A BASE EXPECTANCY MODEL

FOR

FORENSIC RELEASE DECISIONS

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CHAPTER I

INTRODUCTION

The National Institute of Justice (NIJ) instituted the Classification, Prediction, Methodology Development Research Program in response to the growing need to deal with issues of offender classification and prediction of future criminal behavior. The need to identify and classify dangerous offenders and assess individual dangerousness has grown substantially, according to NIJ, due to jail and prison crowding, early release sanctions, pre-trial release alternatives, selective incapacitation programs, and mandatory sentences.

A Base Expectancy Model for Forensic Release Decisions Project was undertaken by Research Management Associates, Inc. in May 1984, for the Classification, Prediction, Methodology Development Research Program. The research was initiated in cooperation with Clifton T. Perkins Hospital Center (CTPHC), a maximum security facility for the evaluation and treatment of mentally ill offenders in Jessup, Maryland. The objectives of the project were:

- To assess and compare the differences in background, characteristics, and treatment given to a group of insanity acquittees, a group of prisoners transferred to the mental hospital for treatment, and a control group of prisoners without identified mental illness matched to the NGRI group.
- To assess the recidivism and outcome during a five year follow-up of these three groups of offenders.
- To assist the clinical staff in making release decisions through the development of actuarial prediction tables of patient release readiness and favorable outcome.

The focus of the study was a population of 135 men found not guilty by reason of insanity (NGRI) in the State of Maryland released from 1967 to

1978 from CTPHC. All NGRI's had been treated at CTPHC, all were males, and nearly all had been originally charged with a violent felony offense. The study was designed with a comparison group and a control group. The comparison group, referred to as prison transfers, was made up of a sample of 135 prisoners transferred to CTPHC for treatment for mental illness from the years 1967 to 1981. All of the prisoners sampled were eventually released on parole. The control group was made up of a sample of prisoners not hospitalized during their incarceration and released on parole from 1969 to 1978. The parolees were matched to the NGRI group one to one on the basis of race, age at discharge, offense, and length of time incarcerated.

Nearly all of the patients in the NGRI group were followed by the CTPHC social workers on a conditional release program for five years. The parolees reported to parole agents for varying lengths of time, ranging from several months to over ten years.

Data collection was based primarily on four sources: case records from the mental hospital, case records from the Division of Parole and Probation, FBI arrest histories or arrest histories from the Maryland State Police, and rehospitalization information from the four Maryland state mental hospitals and St. Elizabeths Hospital in Washington, D.C.

The data collection instrument developed for this study was created with the assistance of the professional staff at CTPHC and the Advisory Group for the project, and is referred to as the Outcome Predictor Inventory. Information was collected on a subject's sociodemographic characteristics, mental hospitalization and criminologic background, childhood and family background, juvenile delinquency record, psychiatric signs and

symptoms, clinical stay, and post-institutionalization (i.e., employment, functioning in the community, income, rehospitalization, utilization of after care services, and rearrests). The Outcome Predictor Inventory appears in Appendix A.

This report is organized into seven chapters. Chapter II presents the Background of the Problem and Literature Review. Prior research on not guilty by reason of insanity acquittees and mentally disordered prisoners is discussed. The chapter also includes a discussion of recidivism research on mentally disordered offender populations, prediction research, and how this project will meet some of the identified research needs in the field.

Chapter III presents the Methodology of the study, beginning with the setting of the research, the Clifton T. Perkins Hospital Center in Jessup, Maryland. The study design, sampling procedures, sources of data, limitations of the study, and data collection instrument are reviewed.

The presentation of the research findings begins with Chapter IV. This chapter introduces the reader to the three groups under study, with background data on sociodemographic characteristics, childhood information, prior juvenile delinquency, prior arrest history, and family background.

Chapter V presents findings first, on the clinical variables prior to hospitalization, such as the number of mental hospitalizations, psychiatric signs and symptoms, functioning in the community, and diagnoses. The second half of the chapter is devoted to an analysis of the treatment received by the NGRI group and the prison transfer group during hospitalization for the instant offense. This includes information on the types of therapies employed, psychological testing, use of seclusion, and assessment

of improvement by the time of discharge. Chapters IV and V are organized with a narrative discussion highlighting findings from each table presented, followed at the end of each chapter by a discussion of the implications of the findings.

Chapter VI presents the Analysis of Outcome data. A variety of outcome indicators have been utilized. In addition to rearrests, these include the employment situation after release, utilization of aftercare services, marital situation, rehospitalization, functioning in the community, compliance with medication, and compliance with other conditions of release. The second half of this chapter presents first, a comparison between pre-instant offense behavior and post-discharge behavior, and second, the relationship between the independent variables and outcome. The variables most strongly associated with successful outcomes are presented. The chapter concludes with a summary of those factors associated with success and failure after release.

Chapter VII presents several useful products which have been developed based on the research findings. These products are intended for use by hospital staff in making release decisions on NGRI patients. The first product is a factor score sheet, consisting of a list of items to be used by staff in rating a patient's readiness for release. Based on this score, the probability that a patient will succeed or fail is determined by the second product, a Favorable Outcome Table.

CHAPTER II

BACKGROUND OF THE PROBLEM AND LITERATURE REVIEW

Introduction

Mentally disordered offenders, including both the criminally insane and the mentally ill in prison, pose serious concerns for society in terms of public policy, management, treatment, and aftercare. Though in most states only a handful of defendants are found NGRI, many of these cases are controversial and receive widespread publicity. In contrast, the mentally disordered in prison generally receive little attention except as management problems and often get inadequate care.

While recidivism rates of prisoners and the mentally ill have been studied, little attention has been paid to the long-term outcome of insanity acquittees or to the mentally ill incarcerated and released from prison. Further, though some research has been conducted on predicting the outcome of prisoners, little work has been done on developing prediction devices for either type of mentally disordered offender. Thus, additional research is needed to determine 1) what differences exists between the mentally ill in prison and the criminally insane; 2) how these two groups compare to the prison population in terms of characteristics, recidivism, and outcome; and, 3) whether devices to predict successful outcome of the mentally disordered offender can be developed.

In this study we have attempted to address these three research needs. We have examined the characteristics, background, treatment, and long-term outcome of mentally disordered offenders. Our investigation included the populations of insanity acquittees, prisoners transferred to the mental hospital for treatment, and a matched control group of

prisoners. The methodology utilized to examine these three groups will be discussed in the next chapter.

In this chapter, we examine, first, the scope of the problem of the mentally disordered prisoner and the criminally insane. This includes the criteria used to define not guilty by reason of insanity acquittees, their proportion of the mentally disordered offender population, and information on length of stay in mental hospitals by mentally disordered offenders. Research findings are presented on their demographic, mental health and criminologic backgrounds, as well as a review of the characteristics of the mentally disordered prison transfer population. Information is also presented on the proportion of mentally disordered that are found among the entire prison population.

The second section reviews research on recidivism and rehospitalization of NGRI acquittees and other mentally disordered offenders. Associations between demographic and prior arrest histories are presented. The third section presents research findings on prediction research and what factors have thus far been identified with future recidivism. The chapter concludes with a discussion of research needs, how this project will meet some of the identified needs and addresses some of the shortcomings of previous research.

Scope of the Problem: Mentally Disordered Prisoners and Criminally Insane

Mentally disordered offenders comprise 7.3 percent of the institutionalized mentally disordered population in the country (Monahan and Steadman, 1983). It has been estimated that approximately 20,000 people are classified as mentally disordered offenders and treated in mental hospitals each year (Steadman et al., 1982). These include people found

not guilty by reason of insanity, mentally disordered prisoners transferred to mental hospitals, persons found incompetent to stand trial, and mentally disordered sex offenders.

The treatment of these types of identified mentally disordered offenders, as well as the mentally ill in prison and jails has grown more complex, due to a variety of developments over the past two decades. Teplin (1984) has outlined six reasons for this, including most importantly:

1) changes in commitment laws and procedures for civil commitment of the mentally ill;
2) the community mental health system movement, which has released a large number of persons into the community who formerly would have been given custodial care;
3) the changing characteristics of public hospital patients, where over fifty percent of the patients now have arrest records;
4) the psychiatrization of the criminal, confirming the right of psychological treatment for prisoners;
5) the decreased financial support for mental health treatment, leading to a lack of treatment programs for the deinstitutionalized person;
6) and the public perception that the insanity defense is pled frequently and successfully.

Thus, the treatment and handling of the mentally disordered offender is influenced by the laws, facilities, and procedures in each state. Currently, over half of the states use the test for criminal responsibility developed in the 1960's by the American Law Institute, which stipulates:

> A person is not responsible for criminal conduct if at any time of such conduct as a result of mental disease or defect he lacks substantial capacity either to appreciate the criminality (wrongfulness) of his conduct or to confirm his conduct to the requirements of law (ALI, 1962).

Sixteen states apply the M'Naghten Rule for insanity or "right-wrong" test, which means that the subject did not know what he was doing was wrong. More recently, there has been a trend toward a "guilty but mentally ill" verdict. Thirteen states have made this change thus far, though it

has been criticized for ill-conception and constitutional unsoundness by the American Bar Association, American Psychiatric Association, and National Mental Health Association (Keilitz and Fulton, 1984).

Though the insanity defense is used infrequently and successfully argued even less frequently, many people grossly overestimate the degree to which it is used. Pasewark and Seidenzahl (1979) and Pasewark and Pantle (1979) interviewed college students and legislators in Wyoming and found that students thought the plea was entered 37 percent of the time and successful 44 percent of the time, and legislators estimated it was entered 20 percent and successful 40 percent of the time. In reality, Pasewark and Lanthorn (1977) found only .46 percent of insanity pleas entered out of all felony indictments in Wyoming from 1970-72, and only one was successful. Other estimates posit that insanity is raised in about 1 percent of all criminal cases (Criss and Racine, 1980), though New York data shows its successful use to be on the rise (Steadman, 1980).

The reason for this overestimation by the public and legislators may be due to the symbolic role the insanity defense plays in our society. Kaufman (1982) feels that acquittals by reason of insanity (such as the Hinckley case) tend to undermine the public's faith in the courts' ability to respond to crime rationally. Keilitz and Fulton (1984) feel that the defense became the focus of the public's dissatisfaction with the failure of the criminal justice system to protect society.

Despite all of this attention they receive, persons found not guilty by reason of insanity actually comprise next to the smallest proportion of all mentally disordered offenders. In the only recent major national survey of mentally disordered offenders admitted to state and federal

hospitals, Steadman et al., (1982) found 20,143 persons admitted to state and federal institutions in 1978. This was composed of 54.1 percent prison transfers, 31.9 percent incompetent to stand trial patients, 8.1 percent NGRI patients, and 6 percent mentally disordered sex offenders. The only other comparative data on the institutionalization of mentally disordered offenders is Scheidemandel and Kanno's national survey (1969), which estimated 29,000 admissions in 1967 and found that 4 percent of the patients were identified as NGRI.

Steadman et al., (1982) also found that the NGRI patients stayed in the hospital an average of 23.2 months, compared to 5.7 months for prison transfers, 6.4 months for those found incompetent to stand trial, and 24.4 months for mentally disordered sex offenders. Since their average stay is longer, NGRI's make up a higher proportion of the average daily census in state and federal hospitals. Out of the 14,140 average daily census in 1978 found by Steadman et al., 22.2 percent were NGRI, 24 percent were incompetent to stand trial, 36.5 percent were prison transfers, and 17.3 percent were mentally disordered sex offenders.

In related work, Steadman and Braff (1983) found 40 percent of the 278 persons found NGRI in New York state from 1965 to 1976 to still be hospitalized in 1978, with an average length of stay of 56 months. They found that persons acquitted of more severe crimes had longer hospitalizations: persons acquitted of murder averaged 16.4 months and those acquitted of assaults averaged 13 months, while those acquitted of burglary averaged 9.5 months.

Characteristics of the Criminally Insane

The earliest major work on the NGRI population was undertaken by Morrow and Peterson (1966), comparing 44 NGRI patients and 43 criminal sexual psychopaths in California. They found the NGRI sample to be: 66 percent white; 88 percent unskilled or semiskilled; average age of 33.5 years; average education of 9 years; 30 percent unmarried and 47 percent separated or divorced; 66 percent with no previous psychiatric admission, 14 percent with one, 16 percent with two, and 5 percent with three or more; 34 percent had no prior criminal history, 11 percent had one prior conviction, 20 percent had two, and 34 percent had three or more. The offense for which they were acquitted included 54 percent economic, 29 percent assaultive (including 11 percent homicide and 2 percent rape). The most frequent diagnosis (45 percent) was functional psychosis (mainly schizophrenia), 14 percent chronic brain syndrome, 14 percent mental deficiency, and 27 percent neurosis or personality or situational disorder.

Since this earliest work, several researchers have confirmed this early portrait of the insanity acquittee as an unmarried white male without previous mental hospitalization, basically unskilled, and in his thirties (Cooke and Sikorski, 1974; Pasewark and Steadman, 1979 a,b; Rogers and Bloom, 1982; Singer, 1978). Less consistency in research findings has been found regarding the offenses of which they were acquitted and the diagnosis categories into which they were characterized.

The seriousness of the charge for which offenders were found NGRI appears to vary greatly from state to state. In New York, the most frequent charge for which NGRI patients from 1965 to 1978 were acquitted was murder (53 percent for those from 1965 to 1976 and 44 percent for those

from 1976 to 1978) (Pasewark, Pantle, and Steadman, 1979 a,b; Steadman, 1980). Similarly, in Michigan, 57 percent of the 167 insanity acquittees studied by Cooke and Sikorski were acquitted on murder. Much less serious charges were found in Missouri, where 10 percent of the 67 NGRI cases studied by Petrila (1981) were acquitted of murder, and 27 percent for assault. Similarly in Oregon, Rogers and Bloom (1982) found only 5 percent of the 440 NGRI defendants were acquitted of murder. It appears that the criminal charges in the East may be more serious than those in other parts of the country (Steadman and Braff, 1983).

This lack of consistency in the charges for which persons are found NGRI tends to refute the stereotypical categories into which society often places the criminally insane. Sales and Hafemeister (1984) identified three such stereotypes: 1) a "mad killer" who attacks victims randomly and repeatedly; 2) a "crafty con" who fakes insanity, and 3) a "desperate defendant" who uses the insanity plea as their only option due to obvious guilt in a crime. The authors claim that if the first category were true, one would expect to find most NGRI acquittees to be charged with murder, or at least serious personal assaults, but that was not found with any consistency across the country. If the second category were true, one would expect acquittees to have had extensive experience with the criminal justice system, and thus exhibit high rates of prior arrests. However, prior arrests ranged from 18 percent in New Jersey (Singer, 1978) to a high of 66 percent (Morrow and Peterson, 1966). Sales & Hafemeister conclude that since a sizeable proportion had prior mental hospitalization and most had serious diagnoses, this tends to suggest that most are not faking their symptoms. Regarding the third category, that of the desperate defendant,

there is insufficient evidence to either support or refute the contention of a person who uses insanity out of desperation.

Other subcategories of the criminally insane have been put forth by Pasewark et al. (1979 a,b). These include 1) those for whom the criminal act was directly associated with a mental disorder and who had little prior or subsequent criminal activity; 2) those who represent the criminal population and have both extensive prior and subsequent psychiatric and criminal histories; and 3) those who are considered by society by the heinousness of their actions to be mentally ill, such as mothers who kill their children, crimes committed by police, and defendants for whom a great deal of empathy can be evoked.

Some differences were found on the basis of diagnosis. In a comparison between acquitted insanity pleas and those found guilty whose original plea was insanity in Erie County, New York between 1970 and 1980, Steadman and Braff (1983) reported similar demographic and background characteristics to those just reported. However, symptomatically, they found the acquittees to be 28 percent psychotic, 53 percent depressed, and 24 percent agitated. They found little difference between those who were acquitted and those who were convicted.

Mentally Disordered Prison Transfers

Prisoners whose mental disorder was not germane to the offense or not identified until after incarceration make up the majority of institutionalized mentally disordered offenders. Out of the 20,143 mentally disordered offenders admitted to state and federal mental hospitals in 1978, 54.1 percent were prison transfers (Steadman et al., 1982). These 10,831 inmates who were transferred from state prisons into separate mental health units

or facilities do not include those who were experiencing mental health problems but received care and remained in the general prison population.

Some reports suggest that the number of mentally disordered inmates is growing. The State of Maryland, in its 1984 Division of Correction Briefing Document, reported that "There continues to be a significant increase in the number of mentally ill individuals being sentenced to the Division of Correction" (p. 69). In a five state survey of corrections staff, Hartstone et al. (1984) also found that 43 percent of the staff believed that the proportion of disordered inmates had gone up. They estimated that 5.8 percent of the prisoners in their populations were seriously mentally ill, and another 37.7 percent were felt to be suffering from psychological problems that would significantly benefit from mental health treatment.

The increase in the number of states using the guilty but insane verdict rather than the not guilty by reason of insanity verdict may be the reason for part of the perceived increase, according to Hartstone et. al., as well as the trend in criminal sentencing which places more offenders into state prisons for longer periods. Hartstone contends that even if the proportion of inmates who were mentally disordered remained constant, the absolute number of inmates requiring mental health services would increase greatly due to the increases in the prison population. It is possible, however, that the perceived increase in mental illness reflects an improvement in correctional staff's ability to recognize mental illness, rather than an increase in actual numbers (Hiday, 1983).

There appears to be little consensus on the most appropriate arrangements for mentally disordered inmates. Steadman et. al. (1982) found that

16 states transferred most of their mentally disordered inmates into mental health facilities or units run by the Department of Corrections, 28 states transferred them into hospitals or units run by the Department of Mental Health, and six states utilized a combination of units run by both groups. The responsibility for mental health services for inmates has shifted back and forth between corrections and mental health departments in many states for decades. At present, two-thirds of the states transfer most of the mentally disordered inmates to the Department of Mental Health, but the larger states tend to use corrections options, so 71 percent of all prison inmates transferred for mental health services in 1978 were placed in DOC operated mental health facilities (Hartstone et. al., 1984).

What proportion of all prison inmates have mental disorders? Collins and Schlenger (1983) examined the prevalence of psychiatric diagnoses among 1,149 male felons at the time of their admission to a North Carolina prison and found that 29 percent had antisocial personality disorder, 1 percent schizophrenia, 49.5 percent alcohol abuse, and 21 percent sexual dysfunction. Overall, more than three-quarters of the sample were found to have symptoms sufficient to cause a psychiatric diagnosis in at least one category. They also found that as the number of prior arrests increased, the percentage of inmates diagnosed as having antisocial personality, alcohol or substance abuse also increased.

Several other studies examined the rate of psychiatric diagnosis among prison inmates. James et. al. (1980) found 35 percent of a sample of Oklahoma inmates to have personality disorders, 25 percent to have a primary diagnosis of substance abuse, and 5 percent to be schizophrenic. Hare (1983) found a sample of Canadian prisoners to be composed of at least

39 percent antisocial personality disorders and 49 percent substance abusers.

Guze (1976) found considerably higher rates of antisocial personality disorder than the two previous works: 78 percent of the male felons were diagnosed as sociopathic, 1 percent schizophrenic, and 54 percent alcoholic. He concluded that sociopathy, alcoholism, and drug dependence are psychiatric disorders characteristically associated with serious crime and schizophrenia, affective disorders and brain syndromes are not.

Though the proportion of mentally disordered in jails is not relevant to this research project, Teplin (1983) has concluded that it cannot be definitively determined whether there has been an increase in the number of mentally disordered in prisons and jails. The problems she cites in conducting prevalence studies in jails (i.e., definitional and methodological shortcomings in existing studies, and a lack of baseline data for comparison), also apply to some research on prevalence of mental disorder in prison. For example, different diagnoses and definitions are used to define mental illness from study to study and state to state. This is illustrated by the frequency of certain diagnoses, such as schizophrenia, but the rarity of others, such as alcoholism, for the NGRI population in Maryland.

Monahan and Steadman (1983) oppose broad definitions of sociopathy such as that used by Guze, and estimate that the true prevalence rate for serious mental illness among offenders in prison or jails varies from 1 to 7 percent. They estimate less severe forms, such as non-psychotic illness and personality disorders, to be from 15 to 20 percent. Roth (1980) states similar findings of psychosis rates to be 5 percent or less of the prison

population, with 15 to 20 percent suffering from less severe psychiatric pathology. When these figures are compared to the general population, Steadman and Monahan (1983) found that the true prevalence rate of psychosis among inmate populations does not exceed the true prevalence rate of psychosis among class-matched community populations.

Outcome After Release: Recidivism and Rehospitalization

There has not been extensive research on the outcome of released NGRI acquittees. The earliest study (Morrow and Peterson, 1966) defined failure as conviction of a felony type offense or rehospitalization beyond temporary observation only in a psychiatric inpatient facility. They determined failure rates for one to five years for the 44 NGRI subjects in their sample and found the following cumulative failure rates for three years:

One year failure rate -- 17 percent
Two year failure rate -- 26 percent
Three year failure rate -- 43 percent

When the cumulative three year failure rate was recalculated to exclude two subjects who were rehospitalized but not reconvicted, the failure rate was 37 percent. Most offenses were for economic charges, and most recidivists repeated their previous offense category. This was not significantly greater than the corresponding rate of 35 percent at the time (1964) for a large federal prison sample.

In New York State, Pasewark et al. (1979a) studies arrest rates of 107 discharged insanity acquittees released from 1965 to 1976. They found 20 percent were arrested after release, most frequently for property crimes (36 percent), followed by crimes against persons (20 percent), drug charges (14 percent), other felonies (8 percent), and misdemeanors (23 percent). These charges were generally less serious than the offenses of which they

were acquitted. This same group of releasees had a 22 percent hospitalization rate.

Steadman and Braff's (1983) study of all insanity pleas in Erie County, New York between 1970 and 1980, examined a comparison between acquitted and convicted groups. They found them to possess similar characteristics, except the acquittees averaged fewer prior arrests. Both groups had similar subsequent arrest rates: 35 percent of the acquittees were rearrested compared to 39 percent of those convicted. Both groups also had low rehospitalization rates: 10 percent of the acquittees were rehospitalized compared to 20 percent of those convicted.

Several researchers have studied the recidivism rates of mentally disordered offenders, the majority of whom were prison transfers, but some of whom were NGRI. Steadman and Cocozza's study (1974) of patients released by judicial order (known as "Baxstrom patients") consisted of 67 percent transfers from regular prison units, 20 percent incompetent to stand trial, and 13 percent other legal statuses. In a four year follow-up, 20 percent were rearrested. Studies of similar groups of patients transferred from maximum security hospitals to state mental hospitals were carried out and subsequent rearrest rates were found between 14 percent within 14 months (McGarry and Parker, 1974) to 24 percent (Thornberry and Jacoby, 1979).

This range of 14 to 24 percent rearrested for mentally disordered offenders is higher than that of civil mental patients studied by Steadman et al. (1978). They found the annual felony arrest rate for persons released from New York State mental hospitals in 1975 was 9.8 percent. However, when civil mental patients with one prior arrest were examined, an

arrest rate of 13.8 percent was found; if two or more prior arrests only were examined, the subsequent arrest rate went up to 41.3 percent. Monahan and Steadman (1983) feel that the subsequent arrest rates for mentally disordered offenders in some studies (14 to 24 percent) closely resembles the arrest rates for civil mental patients who had one or multiple prior arrests (13.8 to 41.3 percent). They conclude that the demographic and criminological correlates of criminal behavior are the same for both civil mental patients and mentally disordered offenders. The variation that is found closely corresponds to the prior criminal history and demographic characteristics of each group.

Prior Research at CTPHC

A survey of 65 insanity acquittees (Madden, 1977) showed that they were most frequently institutionalized for the following offenses:

Murder	25%
Assault with intent to murder	25%
Assault	15%
Rape and sexual assault	15%
Arson and theft	10%

Analysis of the characteristics of these 65 acquittees showed 50 percent had been incarcerated previously, 60 percent hospitalized previously, and 50 percent were white. The diagnostic categories (based on DSM-III diagnoses, APA, 1980) they fell into were schizophrenia (75 percent), personality disorder (10 percent), retardation (10 percent), and other (5 percent).

In a two year aftercare follow-up of 65 patients, it was found that 71 percent were employed during their outpatiency, 61 percent were able to

live in the community alone or with their family, 76 percent had no arrests, and 78 percent remained in a structured activity such as work or school with no more than a six week hiatus and were not discharged from their job for poor performance.

Another study of the criminality of discharged insanity acquittees was undertaken in 1983 by Spodak, Silver, and Wright (1984). The research examined the arrests, convictions, and incarcerations of nearly all insanity acquittees discharged from inpatient treatment between August 1967 and June 1976. Complete data was obtained on 86 of the 91 discharged patients; 60 were between five and ten years postdischarge and 31 were between ten and fifteen years postdischarge. The authors made an extensive search for disposition of arrests beyond the FBI rap sheet. They obtained arrest information from the State's Attorneys offices, families, follow-up therapists, State Police, and the Office of the Public Defender. The following were the major findings from the study:

- 55.8 percent of the patients had at least one arrest post release;
- 30.2 percent of the patients were convicted of at least one charge post release;
- 12.8 percent were incarcerated as a result of a conviction; 34.9 percent were placed on probation, and 4.7 percent were found NGRI again and rehospitalized;
- The average time to post discharge conviction was 4.6 years; 15 percent of the convictions occurred within one year;
- 14 percent of those convicted were found guilty of violent crimes (defined as charges which have clear potential for physical harm to others).

The authors concluded that the insanity acquittees did not present a substantial danger to public safety when discharged from the hospital in comparison with prison populations. Further, they concluded that the five

year time frame for supervised aftercare appeared to cover the period of greatest risk for criminal recidivism.

Prediction Research

Prediction of future behavior may be considered at a number of points in the processing of offenders, such as at the time of bail decisions, sentencing, parole decision, competency to stand trial evaluation, civil commitment, and release from mental hospitals after confinement. It is this last decision which interests us in this study.

With the increasing trend toward determinate sentencing, the importance of predicting future violence has decreased. However, the role of prediction in civil commitment to mental hospitals remains significant. During the 1970's there was heightened interest in the prediction of violent behavior due to the trend away from civil commitment based on a need for treatment and toward civil commitment based upon a standard of dangerousness to self or others (Monahan, 1984). By the end of the decade, however, a number of studies had shown suggested that mental health professionals possessed poor predictive abilities with regard to future violent acts. Doubt was cast on the ability of psychiatrists and psychologists to make accurate predictions (Cocozza and Steadman, 1976; Pfohl, 1978) or the possibility of developing useful predictive scales or tables.

There have been three major problems in the prediction literature. First, the studies conducted during the 1970's were found to overpredict violence regardless of the types of indicators that were used (Wenk and Emrich, 1982; Wenk et al., 1972; Steadman, 1973; Cocozza and Steadman, 1976; Thornberry and Jacoby, 1974; Kozol et al., 1972). These studies had false positive prediction rates from 65.3 percent to 99.7 percent. Many of

these studies used predictive devices, such as psychological batteries of tests, evaluation by psychiatrists, and scales, as well as a variety of independent variables such as number of prior commitments, drug use, and commitment offense.

A study by the State of Maryland (1973) on 421 Patuxent Institution inmates had the lowest false positive prediction rate of 54 percent. A Legal Dangerousness Scale, developed by Steadman and Keveles (1972) found four items to be most predictive of violent behavior: juvenile record, number of previous arrests, presence of convictions for violent crimes, and severity of original offense. However, the authors got a false positive ratio of one for every patient who was under 50 and had an LDS score of 5 or more.

A variety of reasons have been suggested for the thus far low predictive ability and high overestimation of violence predicted in these studies. The problem of predicting an event which has a low base-rate of occurrence has been cited as leading to large numbers of people being erroneously assessed (Megargee, 1976; Monahan, 1978; Meehl and Rosen, 1955). Monahan (1978) suggests several other reasons which might account for the degree of overprediction, including the unreliability of violence as an event, that is, there is little consensus on the definition of violence and unreliability in verifying its occurrence; and the low social status of those subjected to prediction efforts, that is, overprediction may be tolerated due to class biases in the criminal justice and mental health systems.

A second problem in the area of prediction research has been defining what a successful outcome should be. Using recidivism as a measure of the

success of rehabilitation has been criticized as overlooking the true value of programs whose goals may have been legitimate but not alleviated an individual's proclivity towards criminality (Maltz, 1984; Gott and Gott, 1980; Erickson and Paige, 1973). Further, once an outcome such as recidivism is chosen, there has been little agreement among researchers as to a consistent definition for its use. For example, Maltz (1984) argues in favor of using rearrest rates as the most accurate (albeit with many limitations) definition of recidivism. Waldo and Chiricos (1977) used 18 different measures of recidivism. Maltz has identified nine categories of recidivism in his review of ninety research studies that used recidivism as an outcome measure. These nine categories included: arrest, reconviction, incarceration, parole violation, parole suspension, parole revocation, seriousness of offense, absconding, and probation.

Maltz acknowledges that use of raw arrest data will produce Type I errors, to the extent that police arrest individuals who have not committed offenses. However, he concludes that arrest is a better indicator of offender conduct than conviction because "the errors of commission associated with truly false arrests are believed to be far less serious than the errors of omission that would occur if the more stringent standard of conviction were required" (p. 58).

A third major problem in prediction research is determining the independent variables that will be utilized in the prediction model. Most of the studies mentioned earlier utilized psychiatric evaluations made by clinical staff and featured the application of typologies and clinical measures. Attempts at predicting adjustment on parole, however, have

largely relied on actuarial tables and statistical methods (Grygier, 1970; Glaser, 1962; Gottfredson et al., 1978).

The most extensive development and application of a base expectancy approach which combines information about individuals and provides the user with a probability estimate of the likelihood of a specific type of behavior in the future is the Salient Factor Scale used by the U.S. Board of Parole in setting federal terms. The nine item actuarial scale is used to aid in determining the prognosis classification and uses the following factors:

1) Prior conviction as adult or juvenile
2) Prior incarcerations as adult or juvenile
3) Age at first conviction
4) Commitment offense involved auto theft
5) Prior parole revocation or commitment for new offense while on probation
6) History of heroin, cocaine or barbiturate dependence
7) Completed 12th grade or GED
8) Verified employment of full time school attendance for at least six months of the last two years in the community
9) Release plan to live with spouse and/or children

This base expectancy model employed by the U.S. Parole Board uses information about the individual prior to, during, and after institutionalization, when predicting adjustment to the community. While this approach has not previously been applied to releasees from mental hospitals, the literature reviewed earlier which is relevant to community adjustment of mentally disordered offenders suggests that data from all three time periods is important. Other researchers have stressed the importance of the post-institutional factors, such as family support and environmental factors. Monahan (1978) includes the personal characteristics of the environment's inhabitants, such as with whom would the subject be living, working and recreating; the functional or reinforcement properties of the

environment, such as material goods, peer approval, and self-esteem; and the psychosocial characteristics and organization climate, such as how supportive, organized, and controlled is the environment.

Other researchers have stressed the importance of family support and after care services and facilities (Angrist et al. (1968) and Sampson (1964)) presented evidence suggesting that receptiveness and support by the patient's family are important in facilitating favorable adjustment to the community. Lorei (1964, 1967) and Gruel and Lorei (1972) qualified the role of the post-institutional factors in influencing adjustment and suggest that their impact is mediated by the nature of patient adjustment while in the institution. Many of these factors have been incorporated into the Outcome Predictor Inventory developed for this study (discussed in detail in the next chapter).

Implications for this Study

There are a number of ways in which future research can be improved upon to increase its predictive ability. This research will move beyond the current literature in six ways. The major points will be presented below and in more detail in the next chapter on Methodology.

First, there is a need for actuarial or statistical prediction to establish relationships between predictor variables such as age, number of prior offenses and the outcome of a patient. Actuarial methods have come to be recognized as the generally superior way of predicting behavior (Monahan, 1978; Gottfredson, 1967; Hoffman and Goldstein, 1973), yet little has been done to develop actuarial models for mentally disordered offenders. In this study, we develop a base expectancy model for forensic release decisions, incorporating actuarial and psychiatric predictors.

Previous research has shown the need to combine both dispositional information with clinical and criminologic information into an actuarial model.

The earliest base expectancy models included only a few "static factors," such as age, offense type, and number of previous incarcerations. Advocates of this approach added a number of dynamic factors, which included institutional adjustment and parole plans (Hoffman and Goldstein, 1973). Hoffman (1972) found three principal factors important when parole decisions were being made, including offense severity, parole prognosis, and institutional adjustment. These findings led to the formulation of the policy guidelines by the U.S. Parole Board (Gottfredson, 1975; Hoffman and DeGostin, 1974).

The importance of including a variety of factors into the prediction model has been discussed earlier. The model we have developed incorporates a wide variety of factors from the pre-institutional, institutional, and post-institutional periods. Background variables on both the patient and his family, clinical variables on psychiatric symptomology, and post-release variables in addition to recidivism have all been incorporated in the Outcome Predictor Inventory developed for this study.

Second, Monahan (1978) and Maltz (1984) stress the need for defining terms such as violent behavior and recidivism. Both suggest developing hierarchies of definitions when developing categories of recidivism or offenses. Out of Maltz's nine categories of recidivism definitions, we have used five in our analysis: arrest, reconviction, incarceration, parole violation, and seriousness of offense. In line with Monahan's suggestion to define violent behavior as a hierarchy of offenses, we have

categorized all subsequent offenses for which our groups were arrested in terms of a hierarchy of offense type.

Third, Monahan also suggests the need for multiple time periods for follow-up validation (1978). In this study we present results at two and a half years, five years, and longer (depending on the length of time since release). In some cases, we have follow-up periods lasting over 15 years for the NGRI population, thus facilitating development of a time until failure table.

Fourth, Steadman and Braff (1983) have suggested a need for future research on NGRI acquittees and what happens to them after acquittal. Research thus far has not clearly determined what type of treatment or incarceration is the most appropriate for NGRI's, nor on whether they more closely resemble the inmate population or the mental patient population. In our study, we have included process evaluation variables regarding the treatment program undergone by the NGRI patient, as well as the mentally disordered prison transfer patients. For both groups, we reviewed all case record material and gathered data on over thirty variables related to treatment and services provided.

Fifth, the need for improved comparison and control groups was seen as a problem in several earlier studies. In some cases, NGRI populations were compared to mental patient populations or prison populations that were not similar on basic demographic characteristics, such as age or race. In our research design, we have carefully matched each NGRI patient with a parolee on selected criteria (age, race, type of offense, length of sentence) to generate a control group. In this way, comparisons can be made

between the outcomes of NGRI patients to those of released prisoners who served time for similar offenses.

Sixth, there is a lack of extensive study of mentally disordered prisoners, though they constitute the largest proportion of mentally disordered offenders. Hartstone et al. (1984) states that "Researchers rarely study the less publicized situation where the prisoner's mental health problems were not manifest, or at least not identified, until after placement in prison" (p. 280). A sample of mentally disordered prison transfers treated at the same mental hospital as the NGRI population under study has been included in the research design of this project. Further, we examine their subsequent mental hospitalization rates after release from prison which to date has not been done (Steadman and Monahan, 1983).

In summary, this research moves beyond the current literature in six ways. We incorporated actuarial and psychiatric predictors in our base expectancy model; we utilized a hierarchy of offense types in determining recidivism; we used multiple follow-up time periods; we included process evaluation variables on patients; we produced a matched control group for comparison with NGRI patients; and, finally, we included a frequently overlooked but important population, mentally disordered prison transfers, in our research design. We turn now to how we incorporated each of these steps into our research design and methodology for this study.

CHAPTER III

METHODOLOGY

Introduction

This chapter presents the Methodology and Study design for the Base Expectancy Model for Forensic Release Decisions study. The first section presents information on the setting for the research, the Clifton T. Perkins Hospital Center in Jessup, Maryland. This includes a discussion of the treatment program and the patient population. The second section reviews the overall research design, including sampling procedures, data sources, data collection, coding, and limitations of the data. The chapter concludes with a discussion of the development of the Outcome Predictor Inventory, and presents a brief review of the research that was utilized to develop it.

Setting of the Research

The setting for the project was the Clifton T. Perkins Hospital Center (CTPHC), a 246 bed maximum security facility that provides pretrial psychiatric examinations for men accused of felonies in all judicial circuits and a comprehensive treatment program for men adjudicated NGRI of violent offenses. The hospital is administered by the State of Maryland Department of Health and Mental Hygiene. Patients are assigned to the hospital from throughout the state of Maryland, including Baltimore City.

The CTPHC was established in 1961 as a centralized facility in the state. It has been continuously accredited by the Joint Commission on Accreditation of Hospitals since 1976. The legislative charges of the hospital are:

- To provide a total treatment program for those individuals adjudicated Not Guilty by Reason of Insanity of violent offenses.

- To accept in transfer from the regional state psychiatric hospitals, patients whose mental illness manifests in such aggressive and violent behaviors as to render it impossible for them to be treated successfully in regional (less restrictive) hospital programs.

- To accept in transfer, inmates from correctional institutions who meet the criteria for involuntary civil commitment and need acute psychiatric treatment.

- To provide pre-trial psychiatric evaluations for those individuals accused of felony offenses in all judicial circuits of the state who have either raised the question of defense by NGRI or for whom there is a question regarding their present mental capacity to stand trial.

During 1984, nearly two-thirds of the patients at the CTPHC were NGRI, the remaining one-third was composed of pre-trial admissions sent for evaluation of competency to stand trial and criminal responsibility, mentally disordered prisoners (correctional or jail transfers), and hospital transfers.

The professional staff currently consists of 13 full-time equivalent psychiatrists, five psychologists, 14 social workers, 14 registered nurses, and 12 activities therapists. In addition, there are approximately 140 nursing attendants and forty security personnel. There are eight wards in the hospital, including a pre-release ward where patients spend an average of three to six months just prior to conditional release. During the years from which the two patient samples were drawn (1967-1978), there were between six and seven full-time equivalent psychiatrists on staff.

At the time of their release, insanity acquittees are placed on a five year conditional release as set forth in the Annotated Code of Maryland. Conditional release provides the Department of Health and Mental Hygiene with a legal mandate to monitor an insanity acquittee's compliance with certain treatment-oriented conditions imposed by court order when the patient is discharged. Specific requirements of each conditional release are developed over

a period of several months by the treatment team in conjunction not only with the patient himself but also with family and any involved community support systems. A typical conditional release protocol incorporated in a judicial order includes such items as place of residence, location of outpatient treatment, prohibitions against substance abuse, and limitations on travel outside the state.

Maryland's conditional release statute also includes a procedure to rehospitalize a patient for evaluation upon failure to comply with the conditions of release. Following such evaluation, the conditional release may be reinstated, modified, or revoked at a judicial hearing.

Data in Exhibit 3-1 shows the number of NGRI patients admitted to CTPHC from 1980 to 1985, the average length of stay for those discharged, the number of beds occupied by NGRI patients, and the number of insanity acquittees on conditional release at the close of the year.

EXHIBIT 3-1
FELONY INSANITY ACQUITTEES IN MARYLAND*
(FY 1979 - 1985)

	FISCAL YEAR				
	1980	1981	1982	1983	1984
Number of admissions (all categories)	459	415	413	414	380
Number of persons adjudicated NGRI	31	47	43	47	45
Average length of stay for those discharged in reference yr (days)	912	749	961	462	1149
Estimated average number of security beds occupied by insanity acquittees	156	155	157	147	153
Number of insanity acquittees on conditional release at close of year	83	87	81	84	71

*(Population - 4,216,446)
Source: Clifton T. Perkins Hospital Center

Method and Sampling Procedures

The focus of the study was the entire group of Not Guilty by Reason of Insanity acquittees released from CTPHC from January 1, 1967 through December 31, 1978. This population numbered 135 male felons. The number of female NGRI acquittees during those years was only one to two each year and was judged too small for inclusion in the study population. Case records from CTPHC were requested for each of the subjects, and 130 records were located. Three subjects died while on conditional release and were excluded from the study, therefore the entire group of NGRI's on whom data was collected numbered 127.

The comparison group of the study was made up of a sample of prisoners transferred for treatment to CTPHC. Admissions logs for each of the years 1968 to 1978 were obtained so a sample could be drawn from the population of 617 males. The initial intent was to proportionally match this sample to the NGRI population by year, so if, for example, 15 percent of the NGRI population had been discharged during 1974, 15 percent of the prison transfers sampled would have been from 1974. However, sampling proportionally was not possible because it was necessary to select only prison transfers who had been released on parole in order to guarantee that some follow-up information on employment and community adjustment would be in the case record. To determine parole status required cross checking each subject's name with that of all parolees released from the Division of Parole and Probation during the years under study. Unfortunately, the vast majority of prison transfers served their entire sentences and terminated on mandatory release status rather than parole. Therefore, to obtain a sizeable enough sample of prison transfers,

the years under study were extended to include prison transfers from 1979, 1980, and 1981. A sample of 135 prison transfers was obtained, with a minimum of a four year follow-up period for those released in 1981, and a maximum for a 16 year follow-up for those released in 1968.

The control group for the study was made up of a random sample of parolees matched person to person to the NGRI population. The matching criteria included:

- Age at discharge, based on age categories as follows:

Under 21	36 - 40
21 - 25	41 - 45
26 - 30	46 - 50
31 - 35	Over 50

- Race, based on categories of white and minority
- Length of Incarceration

  Only those parolees who had been incarcerated five years or less were included in the population of potential matching subjects, in order to get a sample of prisoners whose incarceration length more closely approximated the NGRI group's length of time in the mental hospital.
- Offense type, based on the following groups of offense types:

  <u>Crimes Against Persons</u>

  - Murder (includes homicide and manslaughter)
  - Assault (includes assault, assault and battery, assault with intent to rob, assault with intent to rape, assault by placing hands, assault with a deadly weapon and attempted homicide)
  - Rape (includes rape and attempted rape)
  - Robbery (includes robbery, attempted robbery, and robbery with a deadly weapon)
  - Child abuse
  - Kidnapping

  <u>Property and Other Offenses</u>

  - Burglary
  - Breaking and Entry
  - Vandalism
  - Arson
  - Gun violations

In order to obtain the population from which to draw the sample of parolees, RMA purchased a tape from the Department of Public Safety and

Correctional Services (DPSCS). We were provided with a file of approximately 43,000 records of parolees released from the Division of Parole and Probation from 1969 to 1984. The research agreement signed with the Department at this time also included an understanding that they would provide us with Maryland State Police rap sheets on all of the subjects, as well as access to printouts, files, and case records from parole agents.

Runs of the computer tape were made and listings produced of names, case numbers, offenses, dates of birth and other identifying information for each parolee. The most appropriate match and a second choice were selected on a one to one basis. A second choice was selected in the event that the case record of the first choice parolee could not be located. In cases where subjects were charged with more than one offense, matching was always conducted on the most serious offense (see Exhibit 3-3 for Offense Severity Categories).

Sources of Data

Case Records from CTPHC

The major source of data for the NGRI group was case records from the mental hospital. The case records from the hospital contained all of the clinical stay information, psychological reports, psychiatric work-ups, family and social histories, medication records, and all of the aftercare information from the conditional release period. In several cases, partial records were located and additional information was obtained by interviewing social workers and through other sources.

Case Records from Division of Parole and Probation

Records from the Division of Parole and Probation were more difficult to obtain. Since the size of parole records handled is quite large and most are

transferred to the Hall of Records within several years of closing, there is a high proportion of lost records. For the prison transfer group, records from both the CTPHC and parole agent were sought. All but seven records from the hospital were found, but twenty records from parole agents were not located. For the matched control group, the percentage of missing records originally approached fifty percent.

To remedy this, several steps were taken to obtain lost or missing case records for the matched control group. The Office of Research and Statistics coordinated efforts to locate records in field offices and headquarters. Those records that were still open or recently closed were sent to the headquarters and researchers read the records there. The DPSCS Office of Research and Statistics made requests for records that were supposed to be housed in the Hall of Records but were not found. Finally, if the parole agent who handled a missing record was still available, the Office of Research and Statistics interviewed the agent with a questionnaire version of the post-institutional information taken from the Outcome Predictor Inventory. A sample of this questionnaire appears in Appendix A. Through these means, complete data on all but 32 (25.2%) of the matched control group parolees was obtained. For those 32 without follow-up or more detailed information other than FBI and rehospitalization data, information obtained from the original computer tape comprised all of the demographic information available.

FBI Rap Sheets

The FBI Identification Division was contacted for cooperation in obtaining arrest histories for all of the subjects in the study. To facilitate the process, a letter from the Director of NIJ was sent to FBI requesting their cooperation in obtaining these arrest histories, and RMA stated compliance

with U.S. Code of Federal Regulations Title 28, Section 22.23 Privacy Certification and Section 23.24 on Information Transfer. Those documents ensured RMA's compliance with confidentiality of data obtained on all subjects, as well as compliance with privacy regulations and strict access to data. Once approval was received, the names of the subjects and identifying information such as FBI number, social security number, date of birth, and address were transmitted to the FBI one group at a time. It took approximately six months to receive all of the rap sheets for all subjects.

As was mentioned in the last chapter and as has been documented elsewhere (cf Maltz, 1984), there are many problems with the information obtained from FBI records. Complete disposition data is not present on most rap sheets. Since providing information to the NCIC on the part of police and sheriffs' departments is voluntary, oftentimes arrest information is not transmitted, and frequently the disposition of the arrest is not on the sheet. However, there is no alternative informational source for arrest information on a national level.

To augment the information from the FBI, several steps were taken. First, arrest histories for the Maryland State Police were obtained through the DPSCS Office of Research and Statistics. Occasionally a rap sheet was located from Maryland where one had not been found by the FBI. Second, records from the Division of Parole and Probation frequently contained presentence investigation reports which had detailed juvenile and adult criminal histories. In these cases, the disposition of all documented arrests was obtained by the parole agent. When this information was available, which was in well over half of all the cases in both the prison transfer group and the matched control group, it was reproduced and added to the information from the

FBI. In addition, social workers who followed NGRI patients during their conditional release period and parole agents assigned to parolees generally knew about their client being arrested or in jail and what the disposition was of these arrests. This information was added to the information on the rap sheets.

Mental Hospitalization Data

Sources of hospitalization information were the state hospitals in Maryland and St. Elizabeths Hospital in Washington, D.C. The Director of the Mental Hygiene Administration was contacted by the Superintendent of CTPHC to obtain his permission to contact each of the four regional state mental hospitals in Maryland. Once permission was obtained, letters were sent to the director of each hospital and the director of records requesting information on all hospitalizations of any of the subjects in the study from 1950 to 1985. For the Maryland hospitals, all information on any hospitalization episode was obtained. From St. Elizabeths Hospital, permission had been granted from the Institutional Review Board, however, only information on criminal or involuntary hospitalizations was transmitted.

Advisory Group

Throughout the project, the Advisory Group provided the research staff with suggestions and information. The Advisory Group consisted of four members, each an expert in the field of forensic science, mental health and criminal justice, and prediction research. The Advisory Group provided project staff with journal articles, criticism of the study design, review of Outcome Predictor Inventory, review of the reliability results of the Outcome Predictor Inventory, suggestions for analysis, and review of the final report.

Limitations of the Study

There are several limitations of the design and the data which will be mentioned briefly. The problems inherent in the use of archival data were chief among these limitations. Since the entire study was retrospective, the data available was sometimes inconsistent or only as complete or accurate as that which was taken down by those contributing to and maintaining the case records. For example, one social worker monitoring a patient throughout the five year conditional release period may have thoroughly reported all aspects of a patient's life, such as job, salary, working hours, living situation, arrests, and other social factors, while the next worker may only have mentioned that the patient was working. This was discovered early in the project during pre-testing. To accommodate this limitation, data on some variables was gathered in a "softer" manner than would have been desired. However, in this way, we were able to obtain some information on particular items rather than no information at all.

A second limitation of the data was already mentioned, that is, the problem of FBI arrest histories. It was not possible to utilize self-reports in this study, therefore, FBI rap sheets formed the basis of the recidivism information, augmented by other sources. Nevertheless, information on the disposition of arrests was frequently missing from FBI rap sheets. It would have been desirable to have had the resources to contact each reporting jurisdiction contributing an arrest. However, that would have taken months of additional work, given the total number of prior and subsequent arrests for each group of subjects.

One final limitation on the quality of data that was beyond the control of the research staff was inaccuracy of statistical information. This

included inaccurate birth dates, social security numbers, dates of hospitalization or parole, FBI numbers, or unknown aliases. This made it difficult to obtain collateral information, such as FBI reports, and rehospitalization records that were based on this information.

Two methodological limitations must be noted regarding matching the control group to the NGRI group. First, it would have been desirable to have matched on additional variables, such as prior arrest record, educational level, marital status, or other factors associated with criminality. However, given the limited amount of reliable data that was available on the prison population, and the less than fifty percent chance of finding the case record of selected parolees, the matching procedure was kept to the four variables of race, age, offense, and length of incarceration. An adequate match was found in all but two cases where the parties were over fifty and the FBI and parole records were unobtainable. These two patients were matched with slightly younger parolees who fit the criteria on offense, race, and length of incarceration.

Second, it would have been desirable to have matched the subjects on the basis of arresting charges. This would have negated the influence of plea bargaining that may have been involved in the convictions of the parolees. However, information on the arresting charge was not available for consideration in matching criteria. Also, since one-third of the NGRI's were arrested for murder and were matched to those convicted for murder or manslaughter, the effect of plea bargaining in these cases would not have had an impact.

Outcome Predictor Inventory

Prior to the development of the Outcome Predictor Inventory, researchers examined CTPHC case records to determine the type of information available and

the consistency of record keeping. A working committee was formed of psychiatrists, social workers, and research project staff to design the instrument. Hospital staff primarily determined the type and method by which the psychiatric signs and symptoms, medication information, and clinical stay data would be collected.

The initial instrument went through six stages of revision during the initial planning stage. The working committee coded several cases with various versions of the instrument, until an agreed upon version was ready for interrater reliability testing. Interrater reliability testing was undertaken on a pre-test of 25 NGRI cases. The principal investigator and the research assistant each independently coded the 25 cases.

Item by item reliability testing was conducted on the 25 pairs of cases, using measure of agreement (K) values. The K values for most items were in the .55 to .75 range. Items with the highest levels of agreement included prior employment history information, clinical stay data, GAS scores, and hospitalization data. As a result of this testing, questions with low reliability were eliminated or revised, and staff were retrained on collecting data for those items with low agreement levels. Data collection on the remaining NGRI cases was then initiated.

The entire Outcome Predictor Inventory was coded on both the NGRI group and the prison transfer group, with several questions changed for the prison transfer cases. For the matched control parolees, information pertaining to psychiatric signs and symptoms and clinical stay information was not applicable and was eliminated. The copy of the survey in Appendix A contains a notation for those questions that changed from group to group.

The Outcome Predictor Inventory was divided into ten categories of information as follows:

- Patient movement
- Sociodemographic information
- Prior hospitalization or psychiatric treatment
- Childhood and family background
- History of juvenile delinquency
- Psychiatric signs and symptoms exhibited at admission and during prior mental hospitalizations
- Clinical stay information
- Prior arrest and incarceration history
- Post-institutionalization outcome
- Post-institutionalization arrest and incarceration information

The development of some of the items on the Outcome Predictor Inventory was based on previous work both in recidivism and psychiatric patient outcome. In this way, we planned to be able to test whether predictor variables which apply to offender and mentally ill populations also apply to the mentally disordered offender population and to the NGRI population. For example, all of the items on the Salient Factor Scale developed by the U.S. Parole Board have been included in the instrument (see Appendix B).

The following discussion highlights the rationale behind major sections of the instrument. Where previous research has been used and has influenced the design of a section, that research is noted. One important aspect that guided the entire development of the instrument is the notion of parallelism, that is, if a factor was considered important and information was sought on it during the patient's time prior to institutionalization, an attempt was made to seek the same information during the post-institutionalization period.

Patient and Family Background

Importance was placed on obtaining information on the social factors in the patient's background that may have been involved in influencing later criminal behavior. In recent years, much discussion has suggested a link

between child abuse and later criminality (Attorney General's Task Force on Family Violence, 1984). Some studies have suggested that the impact of traumatic events or physical injury may influence later violence (Goldstein, 1974, Lewis et al., 1977). This section of the instrument sought information on the presence in childhood of each of these situations, as well as emotional abuse, incest, and school adjustment.

Consistent information was sought on the employment history of the patient prior to either hospitalization or incarceration, including the source of income, income bracket, length of employment, type of occupation, and whether he was working at the time of arrest. Similar information was sought on each subject during the post-institutional period. Occupation codes were based on Hollingshead (1952) two-factor index of social position (adapted version appears in Appendix C).

Information was sought on a variety of environmental factors influencing a patient's life prior to institutionalization, as well as during the post-institutionalization period. This included the environment in which he was raised as a child (i.e., marital status of parents, domestic violence in family, stability of nuclear family, number of geographic moves, by whom the child was reared, and order of birth in the sibling group); the relationship between mental illness in the family, and the degree to which the immediate family evidenced either alcoholism, suicidal behavior, criminality, or were themselves abused as children.

To obtain consistent information on the functioning of the subject in the community prior to either hospitalization or incarceration, as well as after release, a role functioning scale was developed by the research team. The scale was based on some earlier work by McGlashan (1984). The scale

assessed a subject's functioning in three areas: as a wage earner, mate, and parent. The subject was also given an overall functioning rating. The scale and definitions used to determine the ratings appear in Exhibit 3-2.

The role that alcohol or drugs played in a subject's life was also tracked. Use of alcohol, marijuana, tranquilizers, stimulants, cocaine, heroin, opiates, and other drugs was sought on the subject as a juvenile and as an adult, as well as what role alcohol or drugs played in the commission of the instant offense. This latter information was on the involvement of drugs or alcohol in the instant offense was only consistently available for the NGRI group.

Instant Offense and Prior Arrest History

Information was sought on the instant offense for which the NGRI patient was acquitted and for which the other two groups were convicted. All of the criminal charges for which they were arrested were coded, as well as a description of the offense. These descriptions were primarily only available with consistency for the NGRI group.

The most serious charge of the instant offense was coded for severity, as was the most serious offense for all prior arrests. Though other seriousness structures were considered (cf Rossi et al., 1974), we utilized the Seriousness Categories which were developed by the Maryland Multijurisdictional Sentencing Guidelines Project and appear in the Maryland Sentencing Guidelines Manual (June 1981). This was chosen so that the results would be most useful to the State of Maryland's Department of Correctional Services. A synopsis of the six Seriousness Categories as they were adapted for use appears in Exhibit 3-3.

EXHIBIT 3-2

ROLE FUNCTIONING RATING SCALE

1) Wage Earner

1=Poor (Did not work majority of previous year, provided no monetary support for self)
2=Fair (Worked erratically/several months in past year; arranged for some public assistance)
3=Good (Worked regularly/with only occasional lapses in self-sufficiency)
4=Very Good (Worked continually/no lapses in employment)

2) Mate

1=Poor (Provides no monetary support/abuses wife/frequently absent for long periods)
2=Fair (Provides erratic monetary support/present in home generally/some fighting with wife)
3=Good (Provides regular support-occasional lapse/nearly always present/good spousal relationship)
4=Very Good (Provides consistent support/always present/excellent communication & relationship with wife)

Parent

1=Poor (Creates chaotic or disturbing condition in home/ignores children/provides nothing towards food, clothing or care of children)
2=Fair (Superficially fulfills some fatherly role though provides no effective participation/provides erratic food, clothing or care of children)
3=Good (Regularly interacts with children in some meaningful way/able to provide some warmth or attention to children in addition to physical needs)
4=Very Good (Consistently strong and effective figure to children/positive force in family/provides stable care and attention to children)

Overall Functioning

1=Poor (Seldom or never worked/ignored family responsibilities/provided no support/has no meaningful social relationships/GAS score 1-30)
2=Fair (Works erratically/fights with wife/erratic support of wife and children/GAS score 31-50)
3=Good (Works regularly/provides regular support/present in home to provide care for family/GAS score 51-70)
4=Very Good (Works consistently/good relationship with wife and children/provides stable care and support/GAS score 71-100)

EXHIBIT 3-3
OFFENSE SEVERITY CATEGORIES

Severity Category I
Murder
Manslaughter
Rape
Sex Offense

Severity Category II
Arson
Assault with Intent to Maim
Assault with Intent to Murder
Assault with Intent to Rape
Possession/distribution dangerous substance
Kidnapping
Attempted Murder
Robbery

Severity Category III
Assault with Intent to Rob
Burglary
Child Abuse
Handgun Violation
Attempted Robbery

Severity Category IV
Assault and/or Battery
Attempted Arson
Bribery
Controlled dangerous substance possession, except marijuana
Housebreaking/Breaking and Entry
Extortion
False Imprisonment
Forgery
Theft
Uttering
Vandalism/Malicious Destruction

Severity Category V
Manslaughter by Motor Vehicle
Pandering

Severity Category VI
Possession of Marijuana
Shoplifting
Other Misdemeanors

Source: Maryland Sentencing Guidelines Manual, 1981.

The prior arrest history information that was coded also included the age of first arrest as an adult, the total number of prior arrests, the total number of times on probation or incarcerated, and the number of known convictions for either an FBI Part I or Part II offense. The offenses which make up FBI Index crimes appear in Appendix D. Two items from the U.S. Parole Board's Salient Factor Scale were also included here: 1) whether the subject was incarcerated more than one-half of the two-year period preceding the instant offense arrest; and 2) whether probation or parole was ever revoked, or a new offense committed while on parole.

Prior Mental Hospitalization

Several studies on schizophrenia (cf Mintz et al., 1976) have shown that the best predictor of future hospitalization is prior hospitalization, therefore information was sought to obtain a complete psychiatric hospitalization or outpatient treatment history on all three groups. This was most easily obtained for the NGRI group, since the patient was specifically asked his prior mental hospitalization history and records from earlier hospitalizations appeared in the case record.

For consistency across all three groups, data was coded from all four Maryland state hospitals and from St. Elizabeths Hospital in Washington, D.C. Items coded included the number of prior hospitalizations, the number of times a subject was treated for alcohol or drugs, the length of time in all prior hospitalizations combined, the reason for the most recent hospitalization, the diagnosis categories for the most recent hospitalization, medications prescribed, and the length of time from the last hospitalization prior to commitment of the instant offense until the commission of the instant offense. For

the prison transfer group, the number of times they were transferred to CTPHC and the total amount of time they spent in the mental hospital were coded.

Clinical Data

The emphasis of the clinical section of the Outcome Predictor Inventory was on the signs and symptoms exhibited by the subject at two points in time: 1) during prior mental hospitalizations, and 2) at admission for the instant offense. All symptoms mentioned by the subject or signs observed by psychiatrists, psychologists, or social workers were coded, as well as the specific nature of delusions or hallucinations (if present). These signs and symptoms were reduced by CTPHC Drs. Silver and Spodak to a matrix based on whether the symptoms were neurotic or psychotic and inwardly or outwardly expressed.

Reliance was made in part on the Deregatis Symptom Checklist 90 clinical scales and other work (Deregatis, 1976; Carpenter et al., 1978). Symptomatic expression of the patient's illness was matched to the matrix. Any one or combination of the four matrix cells was coded, yielding 15 possible combinations, and three additional categories for those whose signs and symptoms did not fall into the matrix*. Exhibit 3-4 presents the matrix that was used to code all signs and symptoms, and the definitions that were employed to define the matrix cells.

In order to rate the functioning of a patient prior to admission, at admission, and during post-institutionalization, we examined a variety of scales for their retrospective applicability. These included the Health-Sickness Rating Scale (Luborksy and Backrach, 1974), the Current and Past Psychopathology Scale (Endicott and Spitzer, 1972), and the Global Assessment Scale (Spitzer et al, 1978). For our purpose of rating patients prior to treatment,

EXHIBIT 3-4
SIGNS AND SYMPTOMS MATRIX

	Inwardly Directed$_3$	Outwardly Directed$_4$
Neurotic$_1$	A	B
Psychotic$_2$	C	D

1) Neurotic: Signs and symptoms suggesting a disorder characterized primarily by severe anxiety and related manifestations, such as depression, phobias, somatization, obsessive thoughts, compulsive behavior, anxiety, dissociative phenomena, substance abuse, etc.

2) Psychotic: Signs and symptoms suggesting a loss of reality contact, such as hallucinations, delusions, ideas of reference, persecutory ideations, irrational aggressiveness and assaultiveness, thought blocking, etc.

3) Inwardly directed: Signs and symptoms manifested primarily toward the self such as, suicidal and other self destructive behavior, autistic thinking, ideas of reference, persecution, social isolation, substance abuse, etc.

4) Outwardly directed: Signs and symptoms manifested primarily toward others, such as, projection, aggressiveness toward others, including attention seeking behavior, sociopathy, etc.

*The 15 possible combinations derived from Exhibit 3-4 include: A, B, C, D, AB, AC, AD, BC, BD, CD, ABC, ABD, ACD, BCD, and ABCD. The three other categories included: no signs or symptoms, mental retardation as the exclusive or predominant presentation, and insufficient data to make a judgment.

immediately at the end of treatment, and after release, we found the Global Assessment Scale (GAS) to be best. Many other scales were considered but could not be adapted to our use or required original questioning of patients. The GAS appears in Exhibit 3-5.

Several other items regarding the presence of symptoms such as depression or thought disorder appear in the clinical section. These were adapted

EXHIBIT 3-5
GLOBAL ASSESSMENT SCALE (GAS)

100 | 91 Superior functioning in a wide range of activities, life's problems never seem to get out of hand, is sought out by others because of his warmth and integrity. No Symptoms.

90 | 81 Good functioning in all areas, many interests, socially effective, gen-generally satisfied with life. There may or may not be transient symptoms and "everyday" worries that only occasionally get out of hand.

80 | 71 No more than slight impairment in functioning, varying degrees of "everyday" worries and problems that sometimes get out of hand. Minimal symptoms may or may not be present.

70 | 61 Some mild symptoms (e.g., depressive mood and mild insomnia) OR some difficulty in several areas of functioning, but generally functioning pretty well, has some meaningful interpersonal relationships and most untrained people would not consider him "sick."

60 | 51 Moderate symptoms OR generally functioning with some difficulty (e.g., few friends and flat affect, depressed mood and pathological self-doubt, pressure of speech, moderately severe anti-social behavior).

50 | 41 Any serious symptomatology or impairment in functioning that most clinicians would think obviously requires treatment or attention (e.g., suicidal preoccupation or gesture, severe obsessional rituals, frequent anxiety attacks, serious antisocial behavior, compulsive drinking, mild but definite manic syndrome).

40 | 31 Major impairment in several areas, such as work, family relations, judgment, thinking or mood (e.g., depressed woman avoids friends, neglects family, unable to do housework), OR <u>some impairment in reality testing or communication</u> (e.g., speech is at times obscure, illogical or irrelevant), OR <u>single suicide attempt</u>.

30 | 21 Unable to function in almost all areas (e.g., stays in bed all day) OR behavior is considerably influenced by either delusions or hallucinations OR serious impairment in communication (e.g., sometimes incoherent or unresponsive) or judgment (e.g., acts grossly inappropriately).

20 | 11 Needs some supervision to prevent hurting self or others, or to maintain minimal personal hygiene (e.g., repeated suicide attempts, frequently violent, manic excitement, smears feces), OR gross impairment in communication (e.g., largely incoherent or mute)..

10 | 1 Needs constant supervision for several days to prevent hurting self or others (e.g., requires an intensive care unit with special observation by staff), makes no attempt to maintain minimal personal hygiene, or serious suicide act with clear intent and expectation of death.

Source: Endicott et al., 1976

from research on the outcome of schizophrenic patients in a five year study by Strauss and Carpenter (1977), and some were found to be predictive of successful outcome.

Clinical stay information was coded for all hospitalization episodes, regardless of the length of stay. This included data on the number of episodes of seclusion, types of therapies employed, length of time until a patient was placed on work release, rating or participation in therapeutic activities, adjustment to hospitalization, medications prescribed, and medication compliance. A GAS score was also given for the patient at the time of discharge.

Outcome Data

Outcome variables examined during the conditional release were coded for two points in time for the NGRI group, and at one time for the other two groups. Since prior research has shown contradictory results for short versus longer follow-up periods and the NGRI group was released on a five year conditional release, the outcome variables were rated at midpoint in the conditional release period (2 1/2 years) and again at five years. For the two parolee groups, outcome was rated at the end of the parole period, which was generally less than five years.

A variety of outcome indicators besides recidivism were used. These included:

- Compliance with follow-up treatment plan
- Compliance with follow-up training or other conditions
- Employment
- Degree of inappropriate or prohibited behavior
- Compliance with medication plan
- GAS score
- Role functioning scale score
- Rehospitalization for mental illness

Compliance with the aftercare plan (i.e. follow-up treatment, training, counselling or support group services) was rated on a four point attendance scale: poor, sporadic, regular, and excellent. Prohibited behavior that the patient might have engaged in was coded as present or absent, and included drinking, drug use, socializing with prohibited others, leaving the area or moving without notice, or inappropriate conduct. The subject's employment situation, occupation, and source of employment were coded, as well as the residences and with whom he resided; his marital status and any changes, and whether the social worker or parole agent maintained contact with the subject throughout the entire conditional release period were also noted.

Subsequent mental hospitalization data was coded on each subject. The information included the number of times the subject was hospitalized, the total length of time for all hospitalizations, subsequent diagnosis categories, and the reason for rehospitalization. For the parolee groups, it was also noted whether parole had been revoked.

Post-Institutional Arrests

All subsequent arrests were coded for each subject at two points: at the end of five years and for the entire follow-up period. For the NGRI patients, the entire follow-up period ranged from 7 to 17 years, with an average of 10.5 years. For the prison transfers, follow-up ranged from 4 to 16 years, with an average of 7.9 years. For the control group, follow-up ranged from 7 to 16 years, with an average of 10.8 years. For each arrest episode, the types of offenses, disposition (if known), and number of years elapsed

since discharge were coded. In addition, the following variables were coded for the two points in time:

- Number of times on probation
- Number of time incarcerated
- Number of convictions for an FBI Part I offense
- Number of convictions for an FBI Part II offense

The number of months until the first arrest was coded, as well as the number of months until the first arrest for a violent crime. Finally, the most serious offense for which a subject was arrested was coded, using the Severity categories in Exhibit 3-3.

CHAPTER IV

BACKGROUND AND CHARACTERISTICS OF NGRI's, PRISON TRANSFERS, AND CONTROL GROUP

Introduction

Data collected on the Outcome Predictor Inventory for all three groups is presented in Chapters IV through VI. This chapter presents all data pertaining to the subjects' socio-demographic characteristics, prior arrest history (including juvenile delinquency record), instant offense information, childhood, and family background. The chapter is structured with exhibits accompanied by narratives highlighting each exhibit's findings. The text explains significant differences found between the three groups.

In all analyses presented in Chapters III, V, and VI, the NGRI group formed the basis for comparison with the other two groups. In other words, all comparisons were made between the NGRI group and the prison transfer group, or the NGRI group and the matched control group. When the discussion notes a "significant difference" between two statistics reported in an exhibit, this means that a statistically significant difference has been found at least at the .05 confidence level. Statistics used in the analysis included the differences of proportions tests for two-samples, t-tests, analysis of variance, or chi-square scores. Statistical significance is designated in the exhibits by an *. Means (averages) in the exhibits are designated by x, and all percentages are based on the sample or population sizes indicated, unless otherwise noted. The chapter concludes with a discussion of the implications of the findings, and further questions brought to light as a result of the data.

Socio-Demographic Characteristics

Exhibit 4-1 shows that the NGRI group was significantly older, better educated, more likely to have been married or divorced, and composed of fewer minority members compared to the prison transfers. Approximately three quarters of the prison transfers were minority group members, 30 or under, and had a tenth grade education or less compared to one half of the NGRI group on each of these variables. Thirty-six percent of the NGRI's had completed high school or beyond, compared to just over one-fifth of both other groups. Significantly more in the NGRI group were married or had been married (56.7 percent) compared to the prison transfers (31.8 percent).

Significantly more of the NGRI patients had been living with their spouse and/or children (31.7 percent) or alone (18-19 percent) compared to the prison transfers living with spouses (11.4 percent) or alone (9.8 percent). There were no differences in the living arrangements of the NGRI's compared to the control group, except that more control subjects were living with girlfriends (14.5 percent) compared to NGRI subjects (3.2 percent). Although there were no significant differences in the proportion of each group that served in the military, significantly more of the NGRI's who served were discharged honorably compared to the other two groups. Of the insanity acquittees who served in the military, 83.3 percent were discharged honorably, compared to 61.3 percent of the prison transfers and 55 percent of the control group.

EXHIBIT 4-1
SOCIO-DEMOGRAPHIC CHARACTERISTICS

	NGRI Patients (N=127)		Prison Transfers (n=135)		Matched Control Group (n=127)	
Age at Admission (to hospital or prison)						
18 or under	6	4.7%	10	7.4%	6	4.7%
19 - 21	12	9.4	25	18.5	19	15.0
22 - 25	26	20.4	35	25.9	25	19.7
26 - 30	27	21.3	27	20.0	22	17.3
31 - 35	15	11.8	13	9.6	16	12.6
36 - 40	21	16.5	7	5.2	15	11.8
41 - 45	10	7.9	3	2.2	11	8.7
46 - 50	5	4.0	4	3.0	5	3.9
51 - 60	4	3.2	11	8.1	7	5.5
Over 60	1	.8	0	-	1	.8
	127	100.0	135	100.0	127	100.0
	$\bar{x}$ = 31.0		$\bar{x}$ = 28.7		$\bar{x}$ = 30.9	
	Median = 29.0*		Median = 25.0*		Median = 28.0	
Race						
White	53	41.7%	28	20.7%	53	41.7%
Black	72	56.7*	106	78.5*	73	57.5
Other Minority	2	1.6	1	.7	1	.8
	127	100.0	135	100.0	127	100.0
Highest Grade Achieved						
6th grade or less	20	16.0%	19	14.1%	19	16.1%
8th grade	23	18.4	32	23.7	29	24.6
9th grade	16	12.8	26	19.3	21	17.8
10th grade	10	8.0	21	15.5	13	11.0
11th grade	11	8.8	6	4.4	10	8.5
High school grad.	28	22.4	25	18.5	19	16.1
Some college	11	8.8	5	3.7	6	5.1
College graduate	3	2.4	1	.7	1	.8
Graduate school	3	2.4	0	-	0	-
	125	100.0	135	100.0	118	100.0
Missing data	2		0		9	
	$\bar{x}$ = 9.7		$\bar{x}$ = 9.1		$\bar{x}$ = 9.1	
	Median = 10.0*		Median = 9.0*		Median = 9.0*	
Marital Status						
Married	31	24.4%*	14	10.4%*	38	31.1%
Separated	22	17.3	16	11.9	23	18.9
Divorced	19	15.0	13	9.6	8	6.6
Single	55	43.3*	92	68.1*	53	43.4
	127	100.0	135	100.0	122	100.0
Missing data	0		0		5	
Number of Children						
None	56	44.4%	63	49.6%	35	38.0%
One	20	15.9	28	22.0	19	20.7
Two	23	18.3	17	13.4	16	17.4
Three	12	9.5	9	7.1	11	12.0
Four - five	12	9.5	5	3.9	7	7.6
Six - nine	3	2.4	5	3.9	4	4.3
	125	100.0	127	100.0	92	100.0
Missing data	2		8		35	
	$\bar{x}$ = 1.4		$\bar{x}$ = 1.4		$\bar{x}$ = 1.5	
	Median = 1.0		Median = 1.0		Median = 1.0	

EXHIBIT 4-1 (Cont)

	NGRI Patients (N=127)		Prison Transfers (n=135)		Matched Control Group (n=127)	
Number of Siblings						
None	10	7.9%	5	3.8%	19	20.7%
One	13	10.3	13	9.8	5	5.4
Two	24	19.1	19	14.3	14	15.2
Three	11	8.7	12	9.0	8	8.7
Four - five	22	17.5	32	24.0	22	23.9
Six - seven	24	19.1	25	18.8	10	10.9
Eight - nine	22	17.4	27	20.3	14	15.2
	126	100.0	133	100.0	92	100.0
Missing data	1		2		35	
	$\bar{X}$ = 4.3		$\bar{X}$ = 4.7		$\bar{X}$ = 3.6	
	Median = 4.0		Median = 5.0		Median = 3.0	
Prior Military Service						
Yes	45	35.4%	38	28.4%	21	28.0%
No	82	64.6	96	71.6	54	72.0
	127	100.0	134	100.0	75	100.0
Missing data	0		1		52	
Type Discharge	(n=45)		(n=38)		(n=21)	
Honorable	35	83.3%*	19	61.3%*	11	55.0%*
General	2	4.8	5	16.1	4	20.0
Dishonorable	3	7.1	3	9.7	2	10.0
Undesirable	2	4.8	4	12.9	3	15.0
	42	100.0	31	100.0	20	100.0
Missing data	3		7		1	
Residence at Time of Arrest						
Parents	37	29.4%*	70	56.9%*	23	27.7%
Spouse and/or children	40	31.7*	14	11.4*	23	27.7
Alone	23	18.2	12	9.8	16	19.3
Relatives/friends	15	11.9	16	13.0	8	9.6
Institution	7	5.6	2	1.6	1	1.2
Girlfriend	4	3.2*	9	7.3	6	14.5*
	126	100.0	123	100.0	83	100.0
Missing data	1		12		44	
Age at Discharge						
18 or under	2	1.6%	0	- %	2	1.6%
19 - 21	7	5.5	6	4.4	10	7.9
22 - 25	25	19.7	28	20.7	22	17.3
26 - 30	31	24.4	37	27.4	30	23.6
31 - 35	16	12.6	26	19.3	17	13.4
36 - 40	16	12.6	15	11.1	14	11.0
41 - 45	16	12.6	9	6.7	17	13.4
46 - 50	6	4.7	5	3.7	5	3.9
51 - 60	7	5.5	7	5.2	8	6.3
Over 60	1	.8	2	1.5	2	1.6
	127	100.0	135	100.0	127	100.0
	$\bar{X}$ = 33.1		$\bar{X}$ = 32.5		$\bar{X}$ = 33.0	
	Median = 30.0		Median = 30		Median = 30	

BACKGROUND INFORMATION

Employment History

Exhibit 4-2 shows that at the time of arrest, significantly more of the NGRI's (58.2 percent) and the matched controls (63.4 percent) had been working compared to the prison transfer group (43.5 percent).

This significant difference in employment patterns was evident in the three to five years prior to the instant offense as well: one-third of both the NGRI group and the matched control group had been employed continually full-time compared to 12.8 percent of the prison transfers. Also, when employed, significantly more NGRI's worked full-time (33.6 percent) compared to prison transfers (12.8 percent).

Although not significant at the .05 level, the matched control group was more likely to have been financially self-sufficient than the prison transfers or NGRI's. Over half (51.4 percent) of the control group supported themselves during the year prior to the instant offense arrest, compared to 37.8 percent of the NGRI group and 30.2 percent of the prison transfer group. However, significantly more of the NGRI's had worked in more skilled occupations prior to hospitalization than the other two groups: 13.6 percent of the NGRI's compared to 3.0 percent of the prison transfers and 3.5 percent of the matched control parolees had worked in clerical or sales jobs. Significantly more of the prison transfers (55.2 percent) than NGRI's (40.0 percent) worked as unskilled laborers.

EXHIBIT 4-2
EMPLOYMENT HISTORY PRIOR TO INSTANT OFFENSE

	NGRI Patients (N=127)		Prison Transfers (n=135)		Matched Control Group (n=127)	
Employment Pattern 3-5 Years Prior to Arrest						
Unemployed continually	16	13.1%	27	24.8%	5	6.4%
Employed erratically	55	45.1	53	48.6	41	52.6
Employed continually part-time/seasonal	10	8.2	14	12.8	6	7.7
Employed continually full-time	41	33.6*	14	12.8*	26	33.3
	---	-----	---	-----	--	-----
	122	100.0	109	100.0	78	100.0
Missing data	5		26		49	
Working or in School More Than One Year During the Two-Years Preceding Arrest						
Yes	67	55.8%*	40	36.4%*	42	51.9
No	53	44.2	70	63.6	39	48.1
	---	-----	---	-----	--	-----
	120	100.0	110	100.0	81	100.0
Missing data	7		25		46	
Working or in School at Time of Arrest						
Yes	71	58.2%*	50	43.5%*	52	63.4%
No	51	41.8	65	56.5	30	36.6
	---	-----	---	-----	--	-----
	122	100.0	115	100.0	82	100.0
Missing data	5		20		45	
Occupation						
Unskilled laborer	50	40.0%*	74	55.2%*	40	46.5%
Semi-skilled	26	20.8	22	16.4	19	22.1
Skilled manual labor	19	15.2	20	14.9	15	17.4
Clerical or sales worker	17	13.6*	4	3.0*	3	3.5*
Administrative	3	2.4	1	.7	3	3.5
Professional	3	2.4	1	.7	4	4.7
Never worked in paid employment	7	5.6	12	9.0	2	2.3
	---	-----	---	-----	--	-----
	125	100.0	134	100.0	86	100.0
Missing data	2		1		41	
Source of Income in Year Prior to Arrest						
Self	45	37.8%	29	30.2%	36	51.4%
Public (welfare, SS, unemployment)	19	16.0	21	21.9	9	12.9
Parents	14	11.7	14	14.6	5	7.1
Self/Spouse	9	7.6	5	5.2	7	10.0
Public/Self	8	6.7	8	8.3	7	10.0
Parents/Self	15	12.6	13	13.5	6	8.6
Combination of three (spouse/self/parents)	9	7.6	6	6.3	0	-
	---	-----	--	-----	--	-----
	119	100.0	96	100.0	70	100.0
Missing data	8		39		57	

Childhood

The family settings in which each group was raised differed significantly. More of the NGRI group (53.6 percent) came from intact families compared with prison transfers (36.8 percent) and the control group (40.2 percent). Exhibit 4-3 shows that significantly more of the prison transfers and control subjects were raised in family constellations which changed three or more times, such as from both parents to a single parent to another relative, compared to the NGRI group.

There were no significant differences in the birth order of subjects with the exception of the proportion of only children. Significantly more of the control group (16 percent) were only children compared to NGRI's (4.8 percent).

Approximately one-quarter in the NGRI group on whom information was available as children reported physical abuse and 23.3 percent reported emotional abuse. Approximately 40 percent in all three groups on whom data was available experienced some sort of traumatic event as a child, such as the death of a relative.

In school adjustment, rated on a scale of very poor (failed several grades, frequently in trouble) to good (good grades, no trouble), the NGRI group did significantly better than the prison transfers but no different from the control group. One-third of the NGRI group was rated as having average or good school adjustment compared to 21.8 percent of the prison transfers.

EXHIBIT 4-3
BACKGROUND INFORMATION: CHILDHOOD

	NGRI Patients (N=127)		Prison Transfers (n=135)		Matched Control Group (n=127)	
Sequence of Family Compositions Until Age 18						
Both parents	67	53.6%*	42	36.8%*	33	40.2%
Both parents -- single parent	17	13.6	19	16.7	18	22.0
Both parents -- non-parent (relative or non-relative)	12	9.6	6	5.3	8	9.8
Both parents -- one parent -- non-parent	7	5.6	18	15.7	9	10.9
One parent or parent/stepparent	6	4.8	15	13.2	7	8.5
One parent -- non-parent	7	5.6	11	9.6	3	3.7
Relatives	7	5.6	3	2.6	3	3.7
Non-relatives or combination or non-relatives and one parent	2	1.6	0	-	1	1.2
	---	---	---	---	--	---
	125	100.0	114	100.0	82	100.0
Missing data	2		21		45	
Birth Order						
Youngest	23	18.5%	24	20.7%	10	12.3
Middle	53	42.7	52	44.8	41	50.6
Oldest	42	33.9	35	30.2	17	21.0
Only Child	6	4.8*	5	4.3	13	16.0*
	---	---	---	---	--	---
	124	100.0	116	100.0	81	100.0
Missing data	3		19		40	
Approximate Number of Major Geographic Moves During Childhood						
None	79	65.8%	71	67.6%	53	70.7%
1 - 2 moves	26	21.7	27	25.7	21	28.0
3 - 4 moves	8	6.7	5	4.8	1	1.3
5 or more moves	7	5.8	2	1.9	0	-
	---	---	---	---	--	---
	127	100.0	105	100.0	75	100.0
Missing data	0		30		52	
Physically Abused or Neglected as Child[1]						
Not abused	68	72.3%	46	80.7%	Not Available	
Abuse reported	26	27.7	11	19.3		
	--	---	--	---		
	94	100.0	57	100.0		
Missing data	33		78			

[1]Sources of reported abuse included all information in case records, which generally included interviews with the subject, parents, or other relatives and were based on any mention of abuse made in the case record by any source.

EXHIBIT 4-3 (Cont)

	NGRI Patients (N=127)		Prison Transfers (n=135)		Matched Control Group (n=127)	
Sexually Abused as Child						
Not abused	83	96.5%	50	98.0%	Not Available	
Abuse reported	3	3.5	1	2.0		
	86	100.0	51	100.0		
Missing data	41		84			
Emotionally Abused as Child						
Not abused	69	76.7%	49	87.5%	Not Available	
Abuse reported	21	23.3	7	12.5		
	90	100.0	56	100.0		
Missing data	37		79			
Experienced Traumatic Events as Child						
None	54	58.7%	42	58.3%	34	65.4%
Once	24	26.1	17	23.6	12	23.1
Twice or more	14	15.2	13	18.1	6	11.5
	92	100.0	72	100.0	52	100.0
Missing data	35		63		75	
Major Illness/Accident as a Child						
None	52	55.3%	44	78.6%	Not Available	
Once	25	26.6	5	8.9		
Twice or more	17	18.1	7	12.5		
	94	100.0	56	100.0		
Missing data	33		79			
Adjustment in School						
Very Poor	29	23.0%	12	10.1%	9	11.8%
Poor	54	42.9	81	68.1	49	64.5
Average	25	19.8 *	20	16.8 *	17	22.4
Good	18	14.3	6	5.0	1	1.3
	126	100.0	119	100.0	76	100.0
Missing data	1		16		51	

Family Background

Exhibit 4-4 shows that significantly more subjects in the prison transfer (60 percent) and control groups (50.9 percent) had fathers who worked in unskilled or semi-skilled labor compared to the fathers of patients in the NGRI group (35.5 percent). In all three groups, there were no differences in the proportion of working mothers: over half of all subjects had mothers who worked outside the home.

While there were no significant differences in the proportion of all subjects who had parents who were married at the time of their birth, the proportion of parents who remained married dropped continually during childhood and adolescence for all three groups. For example, in the prison transfer group, the married rate was 82.2 percent at the time of birth, 58 percent during childhood, and 33.3 percent at the time of admission to the mental hospital for the instant offense. In the NGRI group, the figures were 90.4 percent, 65.1 percent, and 41.6 percent. In the control group, the figures were 85 percent, 54.5 percent, and 50 percent.

Based on an overall rating of stability of the nuclear family, which took into account the degree of fighting, divorce, and changes over time in the family, no significant differences were found: about half of all three groups came from families rated very stable or stable. Also, no significant differences were found in the proportion coming from families with a history of domestic violence (about 30 percent).

A significantly greater history of mental illness in the immediate family and among close relatives such as grandparents, aunts and uncles was found among the NGRI group. For our purposes, history of mental illness was defined by mental hospitalizations, long-term psychiatric care, or out-

EXHIBIT 4-4
BACKGROUND INFORMATION: FAMILY

	NGRI Patients (n-82)		Prison Transfers (n=105)		Matched Control Group (n-94)	
Stability of Nuclear Family						
Very stable	24	19.2%	22	20.0%	10	13.2%
Stable	37	29.6	41	37.3	26	34.2
Unstable	35	28.0	39	35.4	32	42.1
Very unstable	29	23.2	8	7.3	8	10.5
	125	100.0	110	100.0	76	100.0
Missing data	2		25		51	
Parents' Marital Status at Time of Subjects' Birth						
Married	113	90.4%	97	82.2%	68	85.0%
Divorced/separated	1	.8	1	.8	0	-
Widowed	1	.8	0	-	1	1.3
Never married	10	8.0	20	17.0	11	13.7
	125	100.0	118	100.0	80	100.0
Missing data	2		17		47	
Parents' Marital Status During Subjects' Childhood						
Married/remarried	82	65.1%	69	58.0%	42	54.5%
Divorced/separated	25	19.8	29	24.4	19	24.7
Widowed or both deceased	14	11.1	16	13.4	11	14.3
Never married	5	4.0	5	4.2	5	6.5
	126	100.0	119	100.0	77	100.0
Missing data	1		16		50	
Parents' Marital Status at Admission to Hospital or Prison						
Married/remarried	52	41.6%	37	33.3%	34	50.0%
Divorced/separated	31	24.8	34	30.6	13	19.1
Widowed or both deceased	38	30.4	36	32.4	14	20.6
Never married	4	3.2	4	3.6	7	10.3
	125	100.0	111	100.0	68	100.0
Missing data	2		24		59	
Mother Employed Oustide Home						
Employed	44	59.5%	50	67.6%	27	50.9%
Not employed	30	40.5	24	32.4	26	49.1
	74	100.0	74	100.0	53	100.0
Missing data	53		61		74	
Father's Occupation						
Executive/manager	5	4.5%	1	1.1%	3	5.7%
Admin. personnel	11	10.0	5	5.6	1	1.9
Sales/clerical	12	10.9	4	4.4	5	9.4
Skilled manual labor	32	29.1	21	23.3	14	26.4
Semi-skilled labor	29	26.4 *	26	28.9 *	14	26.4 *
Unskilled labor	10	9.1 *	28	31.1 *	13	24.5 *
Unempl./never worked	11	10.0	5	5.6	3	5.7
	110	100.0	90	100.0	53	100.0
Missing data	17		45		74	

EXHIBIT 4-4 (Cont)

	NGRI Patients (n-82)		Prison Transfers (n=105)		Matched Control Group (n-94)	
History of Domestic Violence in Family						
None	80	70.2%	59	72.8%	Not Available	
Minor/some mention	19	16.7	10	12.4		
Chronic/long-term	15	13.1	12	14.8		
	---	-----	--	-----		
	114	100.0	81	100.0		
Missing data	13		54			
Indicators of Mental Illness in Immediate Family[1]						
Not present	74	58.3%*	113	83.7%*	Not Available	
Parent(s)	16	12.6	8	5.9		
Parent(s) & sibling	5	3.9	4	2.9		
One or more siblings	11	8.7	6	4.4		
One or more relatives	15	11.8	2	1.4		
Parent and relative	4	3.1	1	.7		
Sibling and relative	1	.8	0	-		
Parent, sibling, relative	1	.8	1	.7		
	---	-----	---	-----		
	127	100.0	135	100.0		
Indicators of Alcoholism Drug Abuse in Immed. Family						
Not present	74	58.3%	93	68.9%	Not Available	
Parent(s)	38	29.9	36	26.7		
Parent(s) & sibling	2	1.5	3	2.2		
One or more siblings	8	6.3	3	2.2		
One or more relatives	3	2.4	0	-		
Parent and relative	1	.8	0	-		
Sibling and relative	1	.8	0	-		
	---	-----	---	-----		
	127	100.0	135	100.0		
Presence of Criminality in Immediate Family[2]						
Not present	104	81.9%	99	73.3%	77	83.7%
Parent(s)	2	1.6	3	2.2	0	-
Parent(s) & sibling	3	2.4	1	.7	0	-
One or more siblings	16	12.5*	30	22.2*	14	15.2
Other relative	1	.8	1	.7	0	-
Sibling and relative	1	.8	0	-	1	1.1
Parent and relative	0	-	1	.7	0	-
	---	-----	---	-----	--	-----
	127	100.0	135	100.0	92	100.0
Missing data	0		0		35	

[1]Indicators of mental illness were defined as known or reported hospitalization for a mental illness.

[2]Indicators of criminality were defined as known or reported arrests or incarceration.

patient care. Among the NGRI group, 41.7 percent were found to have a history of mental illness in their immediate family compared to 16.3 percent of the prison transfer patients.

Indicators of alcoholism or drug abuse among members of the immediate families included any reported information that family members had been alcoholics or had severe drinking problems. Although not significant, 41.7 percent of the NGRI group was found to have had immediate family members who had chronic drinking problems (generally their fathers), compared to one-third in the prison transfer group.

The existence of criminality in the immediate family was defined as evidence that someone had been arrested or incarcerated for an offense. Since this was based on family interviews and not FBI reports, it is probably an underestimate of the actual amount of criminality that may have been present. There was no significant difference found in the overall amount of criminal behavior among immediate family members between groups. However, when examining only criminality among siblings, significantly more siblings in the prison transfer group (22.2 percent) compared to the NGRI group (12.5 percent) had been arrested or incarcerated.

Social History

As seen in Exhibit 4-5, there was a significant difference in the sexual orientation of subjects. Significantly more NGRI patients were reported to be bi-sexual (14.9 percent) compared to the matched control group (0 percent). There was no difference on this variable between the NGRI's and prison transfers. It should be cautioned that this information was based on interviews, and the differences on sexual orientation may be a result of less extensive interviews available on the control group.

As was seen in Exhibit 4-1, significantly more of the NGRI's were married or had been married compared to the prison transfers but not compared to the control group.

This may be because the prison transfers were younger than the NGRI's and hence less likely to have been married. There were no differences in the proportion of subjects married more than once or in the degree of stability of their relationships.

The history of substance abuse among subjects was examined for all three groups, though less detailed information was available for the control group. There were no significant differences in the use of drugs between the three groups. Chronic alcoholism or addiction was found in over one-third of the members of all three groups. Moderate alcohol consumption was found in an additional 25 percent to 40 percent in all three groups. Cocaine or heroin addiction was reported in 18.1 percent of the NGRI group, 26.7 percent of the prison transfer group, and 20.6 percent of the control group. The extent to which alcohol or drugs played a part in the instant offense will be presented in Exhibit 4-9.

EXHIBIT 4-5
BACKGROUND INFORMATION: SOCIAL

	NGRI Patients (N=127)		Prison Transfers (n=135)		Matched Control Group (n=127)	
Sexual Orientation						
Homosexual	9	7.4%	7	6.8%	4	5.5
Bi-sexual	18	14.9*	13	12.6	0	- *
Heterosexual	94	77.7	83	80.6	69	94.5
	121	100.0	103	100.0	73	100.0
Missing data	6		32		54	
Number of Marriages[1]	(n=72)		(n=43)		(n=69)	
One	57	79.2%	39	90.7%	36	75.0%
Two	12	16.7	2	4.7	11	22.9
Three-four	3	4.1	2	4.7	1	2.1
	72	100.0	43	100.0	48	100.0
Missing data	0		0		21	
Stability of Marriages/ Relationships						
Very stable	5	5.6%	0	- %	0	- %
Stable	23	25.6	13	24.5	18	38.3
Unstable	40	44.4	33	62.3	23	48.9
Very unstable	22	24.4	7	13.2	6	12.8
	90	100.0	53	100.0	47	100.0
Missing data	37		82		80	
History of Substance Abuse						
Alcohol						
Chronic/addiction	53	41.7%	55	40.7%	30	32.6%
Occasional	39	30.7	34	25.2	37	40.2
Minimal/none	35	27.6	46	34.1	25	27.2
	127	100.0	135	100.0	92	100.0
Missing data	0		0		35	
Marijuana/Hashish						
Chronic/addiction	16	12.6%	21	15.6%	4	4.3
Occasional	22	17.3	14	10.4	3	3.3
Minimal/none	89	70.1	100	74.0	85	92.4
	127	100.0	135	100.0	92	100.0
Missing data	0		0		35	
Pills (stimulants, barbiturates, tranquilizers)						
Used	29	22.8%	22	16.3%	Not Available	
Did not use	98	77.2	113	83.7		
	127	100.0	135	100.0		
Cocaine, Heroin, Opiates						
Chronic/addiction	23	18.1%	36	26.7%	19	20.6
Occasional	8	6.3	16	11.9	1	1.1
Minimal/none	96	75.6	83	61.4	72	78.3
	127	100.0	135	100.0	92	100.0
Missing data	0		0		35	
Psychedelics						
Used	27	21.3%	23	17.0%	Not Available	
Did not use	100	78.7	112	83.0		
	127	100.0	135	100.0		
Missing data	0		0			

[1]For those who were married.

Arrest History Prior to Instant Offense

Juvenile Record. Significantly more of the prison transfers (70.2 percent) had been arrested as juveniles compared to NGRI (56.1 percent) or control subjects (40.2 percent). Further, the prison transfer group was arrested more often than the NGRI group: 30 percent of the prison transfers compared to 14.6 percent of the NGRI group were arrested three or more times as juveniles.

Exhibit 4-6 shows that significantly more of both the parolee groups were convicted of an offense prior to age 16 compared to the NGRI group: 41.5 percent of the prison transfers, 44.8 percent of the control group, and 21.3 percent of the NGRI group were convicted prior to age 16. No significant differences were found in the types of offenses for which the subjects were charged as juveniles. Of those arrested as juveniles, just under half in each group had been charged with property offenses. There were also no differences in the disposition of offenses from group to group: nearly half of all charges resulted in commitments to juvenile facilities, while approximately one-third resulted in probation. It should be noted that much of the juvenile arrest data was obtained directly from subjects during interviews by social workers or parole agents, and most likely is an underestimation of the actual amount of juvenile delinquency in which individuals engaged.

EXHIBIT 4-6
JUVENILE DELINQUENCY ARREST RECORD

	NGRI Patients (N=127)		Prison Transfers (n=135)		Matched Control Group (n=127)	
Number of Arrests as Juvenile						
None	36	43.9%*	31	29.8%*	55	59.8%*
One	23	28.1	24	23.1	23	25.0
Two	11	13.4	18	17.3	8	8.7
Three or more	12	14.6*	31	29.8*	6	6.5
	82	100.0	104	100.0	92	100.0
Missing data	45		31		35	
	$\bar{X}$ = 1.5		$\bar{X}$ = 1.9		$\bar{X}$ = .5	
Conviction Prior to Age 16						
Yes	27	21.3%*	56	57.7%*	30	44.8%*
No	100	78.7	41	42.3	37	55.2
	127	100.0	97	100.0	67	100.0
Missing data	0		38		60	
Charges (For those arrested)	(n=46)		(n=73)		(n=37)	
Theft/larceny	19	23.5%	32	21.1%	10	19.6%
Breaking & entry	8	9.9	23	15.1	9	17.6
Burglary/att. burglary	8	9.9	17	11.2	2	3.9
Assault	6	7.4	21	13.8	4	7.8
Arson	5	6.2	1	.7	0	-
School truancy/incorrigibility	11	13.5	21	13.8	13	25.5
Vandalism/tampering	4	4.9	3	2.0	3	5.9
Robbery	3	3.7	12	7.9	0	-
Unauth. use of vehicle	2	2.5	6	3.9	5	9.8
Receiving stolen goods	2	2.5	0	-	1	2.0
Weapons violations	2	2.5	0	-	0	-
Possession of marijuana	0	-	2	1.3	1	2.0
Other minor offenses (Drunk & disorderly, disorderly conduct, fighting)	11	13.5	14	9.2	3	5.9
	81	100.0	152	100.0	51	100.0
Dispositions for Arrest Episodes	(n=46)		(n=73)		(n=37)	
Released at intake	8	14.5%	20	18.5%	3	6.8
Probation	20	36.4	36	33.3	14	31.8
Jail	4	7.3	4	3.7	3	6.8
Commitment to juvenile facility	23	41.8	48	44.4	24	54.5
	55[1]	100.0	108[1]	100.0	44[1]	100.0

[1]Youths may have received more than one disposition.

Adult Record. The NGRI subjects had significantly fewer prior arrests than the prison transfers. Exhibit 4-7 shows that 90 percent of the prison transfers, 83.3 percent of the matched control group, and 76 percent of the NGRI's had been previously arrested. The median number of arrests for the two comparison groups was twice as high as for the NGRI group (4.0 compared to 2.0).

Prison transfer patients and controls were also younger than the NGRI's at the time of their first arrest as an adult or as a juvenile being charged as an adult. Forty percent of both groups were 18 or younger at the time of their first arrest (which may have included the instant offense if that was their first arrest), compared to 28.5 percent of the NGRI group. The average age of first arrest for the mentally disordered transfers was 19.3 compared to 24 in the NGRI group.

Significantly more in the prison transfer and the control groups had been convicted of an FBI Part I Index Offense (54.8 percent and 52 percent respectively), compared to the NGRI group (39.7 percent). Further, significantly more of the prison transfers (47 percent) and the control group (33.3 percent) had committed a new offense on probation or parole or had had their probation or parole revoked compared to the NGRI's (19.8 percent).

Fewer of the NGRI's had been incarcerated previously. While two-thirds of the prison transfers had been incarcerated in the past at least once prior to the instant offense, and 57.5 percent of the controls had been previously incarcerated, only 33.9 percent of the NGRI's had been previously in prison.

EXHIBIT 4-7
ARREST HISTORY PRIOR TO INSTANT OFFENSE

	NGRI Patients (N=127)		Prison Transfers (n=135)		Matched Control Group (n=127)	
Age at First Arrest as Adult (or charged as adult)						
17 or younger	20	16.3%	50	37.0%	37	29.4%
18	15	12.2	29	21.5	13	10.3
19	10	8.1	23	17.0	16	12.7
20	14	11.4	12	8.9	13	10.3
21	12	9.8	5	3.7	6	4.8
22 - 25	17	13.8	5	3.7	17	13.5
26 - 30	13	10.6	6	4.4	10	7.9
31 - 35	11	8.9	3	2.2	5	4.0
36 - 45	8	6.5	2	1.5	7	5.5
46 or older	3	2.4	0	-	2	1.6
	123	100.0	135	100.0	126	100.0
Missing data	4		0		1	
	$\bar{x}$ = 24.0		$\bar{x}$ = 19.3		$\bar{x}$ = 21.7	
	Median = 21.0		Median = 18.0		Median = 19.0	
Number of Prior Arrests[1]						
None	29	24.0%*	13	9.6%*	21	16.7%
One	18	14.9	14	10.4	16	12.7
Two	17	14.0	20	14.8	12	9.5
Three	12	9.9	19	14.1	10	7.9
Four	6	5.0	14	10.4	17	13.5
Five	10	8.3	6	4.4	9	7.1
Six - ten	21	17.4	29	21.5	30	23.8
Eleven - twenty-six	8	6.4	20	14.8	11	8.7
	121	100.0	135	100.0	126	100.0
Missing data	6		0		1	
	$\bar{x}$ = 3.7		$\bar{x}$ = 5.3		$\bar{x}$ = 4.6	
	Median - 2.0		Median = 4.0		Median = 4.0	
Number of Convictions for an FBI Part I Offense						
None	73	60.3%*	61	45.2%*	61	48.0%*
One	23	19.0	25	18.5	32	25.2
Two	8	6.6	28	20.7	15	11.8
Three	4	3.3	12	8.9	12	9.4
Four - nine	13	10.7	9	6.7	7	5.5
	121	100.0	135	100.0	127	100.0
Missing data	6		0		0	
Number of Convictions for an FBI Part II Offense						
None	70	57.9%	50	37.0%	51	40.2%
One	28	23.1	36	26.7	27	21.3
Two	12	9.9	16	11.9	21	16.5
Three	7	5.8	12	8.9	10	7.9
Four - seven	4	3.3	18	13.3	14	11.0
Eight - sixteen	0	-	3	2.2	4	3.1
	121	100.0	135	100.0	127	100.0
Missing data	6		0		0	

[1]Excluding instant offense

EXHIBIT 4-7 (Cont)

	NGRI Patients (N=127)		Prison Transfers (n=135)		Matched Control Group (n=127)	
Incarcerated More Than One-Half of the Two-Year Period Preceding Instant Offense						
Yes	15	12.4%	18	13.7%	13	10.3%
No	106	87.6	113	86.3	113	89.7
	121	100.0	131	100.0	126	100.0
Missing data	6		4		1	
Probation or Parole Ever Revoked, or Committed New Offense While on Parole						
Yes	24	19.8%*	62	47.0%*	42	33.3%*
No	97	80.2	70	53.0	84	66.7
	121	100.0	132	100.0	126	100.0
Missing data	6		3		1	
Number of Times on Probation						
None	89	70.0%	89	65.9%	88	69.3%
One	25	19.7	32	23.7	26	20.5
Two or more	13	10.3	14	10.4	13	10.2
	127	100.0	135	100.0	127	100.0
Number of Times Incarcerated						
None	84	66.1%*	44	32.6*	54	42.5%*
One	20	15.7	31	23.0	24	18.9
Two - four	19	15.0	46	34.1	37	29.1
Five - eleven	4	3.2	14	10.3	12	9.5
	127	100.0	135	100.0	127	100.0
	$\bar{x}$ = .73		$\bar{x}$ = 1.8		$\bar{x}$ = 1.6	

All Prior Criminal Charges. Exhibit 4-8 shows that there were no significant differences in the charges for which the subjects were arrested (as adults) prior to the instant offense. In each group, approximately one-quarter were previously arrested for crimes against persons (which included simple and serious assault, murder, robbery, rape, and child abuse), and one-third for property crimes such as, larceny, burglary or breaking and entering. Less than 1 percent of all prior offenses in all three groups were for murder.

There were no differences in the most frequent disposition for all prior charges (where the disposition was known). About one-third of all charges received dispositions of prison sentences. Two NGRI patients had been found NGRI before and 17 had been committed to a mental hospital previously in connection with prior offenses. One prison transfer patient was found NGRI before, and 13 had been previously committed to a mental hospital for prior offenses. None of the control subjects had been found NGRI before, but four had been committed to a mental hospital.

The severity ratings of all prior charges showed a significant difference between groups. Significantly fewer NGRI patients had been arrested for charges in the most serious categories (38.2 percent in category 1 or 2), compared to the prison transfer patients (55.6 percent in category 1 or 2).

EXHIBIT 4-8
ALL PRIOR CHARGES

All Prior Charges	NGRI Patients (n=92)		Prison Transfers (n=135)		Matched Control Group (n=127)	
Crimes Against Persons						
Murder	4	.7%	6	.8%	4	.6%
Assault/assault w/i to murder or rape	95	17.7	139	18.7	146	23.0
Rape	10	1.9	4	.5	8	1.3
Robbery	28	5.2	46	6.2	30	4.7
	137	(25.5)	195	(26.2)	188	(29.5)
Property Crimes						
Burglary/B&E/Att.burg.	59	11.0%	97	13.1%	56	8.8%
Car theft	22	4.1	24	3.2	15	2.4
Theft/grand larceny	66	12.2	92	12.4	97	15.3
Bad ck/forgery fraud	19	3.5	4	.5	16	2.5
Vandalism/tampering	25	4.6	24	3.2	12	1.9
Other (arson, receiving stolen goods)	11	2.0	11	1.5	8	1.3
	202	(37.5)	252	(33.9)	204	(32.0)
Public Nuisance Crimes						
Disorderly conduct	34	6.3%	100	13.4%	71	11.1%
Vagrancy	11	2.0	4	.5	4	.6
Trespassing	8	1.5	7	.9	3	.5
Other (harrassment, threatening calls)	4	.7	5	.7	5	.8
	57	(8.7)	116	(15.6)	83	(13.0)
Suspicious Circumstances/ Violations						
Vio. of prob/parole	10	1.9%	17	2.3%	11	1.7%
Weapons charges	23	4.3	32	4.3	28	4.4
Escape	12	2.2	6	.8	2	.3
Resisting arrest	7	1.3	18	2.4	15	2.4
Other (fugitive, in-personating an off. failure to appear)	18	3.3	21	2.8	11	1.7
	70	(13.0)	94	(12.7)	67	(10.5)
Public Morals Crimes						
Drug violations (marijuana)	14	2.6%	14	1.9%	6	.9%
Drug violations (heroin, cocaine)	3	.6	34	4.6	22	3.4
Perverted sex pract.	4	.7	3	.4	13	2.0
Other (gambling, contributing)	9	1.7	9	1.2	16	2.5
	30	(5.5)	60	(8.1)	57	(8.9)
Other Crimes						
Unauthorized use of motor vehicle	15	2.8%	14	1.9%	12	1.9%
DWI/DUI	10	1.9	7	.9	16	2.5
Non-support	8	1.5	2	.3	4	.6
Other	9	1.6	3	.4	6	1.0
	42	(7.8)	26	(3.5)	38	(6.0)
TOTALS	538	100.0	743	100.0	637	100.0

EXHIBIT 4-8 (Cont)

	NGRI Patients (n=92)		Prison Transfers (n=135)		Matched Control Group (n=127)	
Severity Category of Most Serious Prior Charges						
1 (Murder, rape)	12	13.5%	8	6.5%	10	9.6%
2 (Arson, serious assault)	22	24.7*	60	49.1*	40	38.5*
3 (Burg., att. robb.)	23	25.8	30	24.6	10	9.6
6 (Simple assault, theft)	23	25.8	18	14.8	34	32.7
5 (Pandering)	1	1.1	1	.8	1	.9
6 (Shoplifting)	8	9.0	5	4.1	9	8.7
	89	100.0	122	100.0	104	100.0
Missing data	3		0		1	
	$\bar{X}$ = 3.0		$\bar{X}$ = 2.7		$\bar{X}$ = 3.0	
Disposition of all Charges	(n=538)		(n=743)		(n=637)	
Prison	91	34.9%	128	31.2%	148	34.2%
Dismissed/nolle pros	48	18.4	100	24.4	79	18.2
Probation	30	11.5	42	10.2	57	13.2
Jail and/or fine	49	18.8	92	22.4	105	24.2
Suspended sentence	1	.4	9	2.2	9	2.1
Committed to hospital	17	6.5	13	3.2	4	.9
NGRI	2	.8	1	.2	0	-
Parole/prob. revoked	1	.4	6	1.5	5	1.2
Found not guilty	15	5.7	17	4.1	25	5.8
Returned to prison/ extradited	7	2.6	2	.5	1	.2
	261	100.0	410	100.0	433	100.0
Unknown	97		93		76	
Length of Prison Terms Imposed	(n=91)		(n=128)		(n=148)	
One year or less	17	23.0%	14	18.4%	1	1.2%
Two years	22	29.7	29	33.2	31	38.3
Three years	13	17.5	9	11.8	16	19.7
Four to five	10	13.5	13	17.1	21	25.9
Six to ten	8	10.8	9	11.8	5	6.2
Eleven to twenty	1	1.4	2	2.6	3	3.7
Twenty-one to thirty	2	2.7	0	-	2	2.5
Over thirty	1	1.4	0	-	2	2.5
	74	100.0	76	100.0	81	100.0
Unknown	17		52		67	

Instant Offense

Since the NGRI group was not matched with prison transfers (but was matched to control subjects), significant differences were found between the original charges for which the NGRI group was arrested and the charges on which the prison transfer patients were convicted. Exhibit 4-9 shows that significantly more NGRI's were charged with murder (29.9 percent), compared to prison transfers (12.6 percent murder). Significantly more prison transfers were charged with robbery (25.9 percent) compared to NGRI patients (9.5 percent). Correspondingly, the NGRI patients had significantly higher severity ratings for the instant offense (33.9 percent in Category 1) compared to the prison transfers (16.3 percent Category 1).

When the involvement of substance abuse (alcohol or drugs) in the instant offense was examined, it was found that significantly more of the arresting episodes in the prison transfer group involved drugs compared to the NGRI's. One-third of the cases in the prison transfer group involved drugs, compared to 5.7 percent in the NGRI group. Overall, 83.8 percent of the cases in the prison transfer group compared to about half the cases in the other two groups involved at least one substance. Corresponding to their more serious offenses, the prison transfers were in prison for the instant offense significantly longer than the controls (an average of 5.2 years compared to 1.8 years for the control group).

EXHIBIT 4-9
CHARACTERISTICS OF INSTANT OFFENSE

	NGRI Patients (N=127)		Prison Transfers (n=135)		Matched Control Group (n=127)	
Most Serious Charge						
Crimes Against Persons						
Murder	38	29.9%*	17	12.6%*	38	29.9%
Assault	40	31.5	29	21.5	40	31.5
Rape	10	7.9	7	5.2	10	7.9
Robbery	12	9.5*	35	25.9*	11	8.7
Other (child abuse or molestation, kidnapping)	2	1.6	4	3.0	3	2.4
Property Crimes						
Burglary	6	4.7%	13	9.6%	6	4.7%
Arson	7	5.5	4	3.0	8	6.3
Breaking & Entering	5	3.9	6	4.4	5	3.9
Vandalism	4	3.1	0	-	3	2.4
Theft	0	-	6	4.4	0	-
Other (receiving stolen goods, fraud)	0	-	3	2.2	0	-
Other						
Weapons violations	3	2.4%	3	2.2%	2	1.6%
Drug related	0	-	7	5.2	1	.7
DWI	0	-	1	.7	0	-
	---	-----	---	-----	---	-----
	127	100.0	135	100.0	127	100.0
Severity Rating						
1 (Murder, rape)	43	33.9%*	22	16.3%*	49	38.6%
2 (Arson, assault w/i rape or murder)	55	43.3	63	46.7	29	22.8
3 (Burglary)	17	13.4	17	12.6	11	8.7
4 (Assault, B&E)	12	9.4	24	17.8	38	29.9
5 (Pandering)	0	-	5	3.7	0	-
6 (Shoplifting)	0	-	4	3.0	0	-
	---	-----	---	-----	---	-----
	127	100.0	135	100.0	127	100.0
	$\bar{X}$ = 2.0		$\bar{X}$ = 2.5		$\bar{X}$ = 2.3	
Alcohol or Drugs Involved						
Both	14	11.4%	8	10.8%	2	2.2%
Alcohol	42	34.1	30	40.5	26	28.3
Drugs	7	5.7*	24	32.4*	14	15.2*
Neither	60	48.8	12	16.2	50	54.3
	---	-----	--	-----	--	-----
	123	100.0	74	100.0	92	100.0
Missing data	4		61		36	
Length of Incarceration						
Under one year	Not Applicable		10	7.8%	29	22.8%
One - two years			16	12.5	38	29.9
Two - three years			19	14.8	23	18.1
Three - four years			24	18.7	20	15.7
Four - five years			9	7.0	16	12.8
Five - ten years			36	28.1	1	.8
Ten - forty years			14	11.0	0	-
			---	-----	---	-----
			128	100.0	127	100.0
Missing data			7		0	
			$\bar{X}$ = 5.2 years*		$\bar{X}$ = 1.8 years*	

Summary

Exhibit 4-10 presents a summary of z scores between the NGRI group and prison transfers, and the NGRI group and control group on selected variables which have been found to be significantly different. Several important findings are brought out in this table.

EXHIBIT 4-10
SUMMARY OF SELECTED SIGNIFICANT DIFFERENCES

	Between NGRI's and Prison Transfers Z Score[1]	Between NGRI's and Control Group Z Score[1]
Percent under age 30	2.7**	NS
Percent black	3.8**	Matched
Percent high school grad. or more	2.2*	2.2*
Percent single	4.0**	NS
Percent employed at arrest	2.9**	NS
Percent employed full-time (3-5 yrs prior)	3.7**	NS
Percent unskilled laborer	2.6**	NS
Percent raised by both parents	2.6**	NS
Percent with good school adjustment	2.1*	NS
Percent father's unskilled or semi-skilled	3.5**	4.3**
Mental illness in family	4.5**	Not Available
Criminality among siblings	2.0*	NS
Percent bisexual	NS	12.3 (x^2)**
Percent arrested as juvenile	2.0*	2.1*
Percent arrested as adult	3.1**	NS
Percent convicted FBI Part I offense	2.6**	1.9*
Percent highest severity categories	2.5**	NS
Percent murder on instant offense	3.4**	Matched

* = $p < .05$
** = $p < .01$
NS = Not Significant

[1]All z scores have been derived from two sample differences of proportions tests unless otherwise noted.

First, the table shows that on nearly all variables, there were few differences between the NGRI group and the control group of matched parolees, while there were many differences between NGRI's and prison transfers. Aside from the variables of offense, age, race and length of time incarcerated upon which NGRI's and controls were matched, the two groups showed strong similarities in their marital status, employment history, family composition, and history of drug and alcohol abuse. The major differences between the NGRI's and controls were that the NGRI's were better educated, came from families with better educated fathers, and had lower conviction rates for criminal activity both as juveniles and adults. These findings support the contention that the matching procedure was successful in selecting subjects similar on a variety of variables in addition to those on which they were specifically matched. Therefore, the thesis posited by Monahan and Steadman (1983) that the relationship between crime and mental illness has more to do with demographic factors, such as age, race, social class, and life history can be tested with the control group generated from this research. (This will be done in Chapter VI.)

Second, Exhibit 4-10 shows that the prison transfers were significantly different from the NGRI population on most variables. The prison transfers were significantly younger, composed of more minority members, less often married or previously employed full-time. They held significantly lower-class jobs than the NGRI's, came from broken homes more often, had poorer school adjustments, had more mental illness in their families, were more frequently arrested both as juveniles and adults and for more serious crimes. These findings show that the prison transfers appeared to represent the worst of two worlds: not only did they have more

serious criminal histories, starting at a younger age, but they appeared to come from less adequate family backgrounds and have more dysfunctional life histories.

The insanity acquittees, in contrast, appear to be a more stable group than the prison transfers. NGRI's were more often married, employed full-time, honorably discharged from military service, and from more stable families than prison transfers. This more stable background, coupled with a significantly less serious juvenile and adult criminal history, supports the contention that the insanity acquittees exhibited less personality disorder than the prison transfers. As will be seen in the next chapter, they also received treatment at a younger age and more often from a private psychiatrist than did prison transfers.

As will also be seen in the next chapter, there are no differences in the number of prior mental hospitalizations between prison transfers and NGRI's. This means that the prison transfers, while having more severe criminal backgrounds but similar mental hospitalization backgrounds compared to NGRI's, were nevertheless more often found guilty of their crimes. This could be because more of the prison transfers were convicted of robbery and fewer for murder compared to the NGRI patients. This suggests conformance with the common sense notion that crimes against persons are more likely to be the outgrowth of a mental illness at the time of the alleged offense than crimes against property. It also suggests the possibility that the mental illness of the prison transfer patient was not a factor in the charges for the instant offense but manifested itself only after incarceration. More research is needed to determine whether the

question of mental health was raised at the time of their defense in the instant offense.

How do the characteristics of the NGRI patients studied in this research compare to those found in other studies of NGRI's? In many ways, the Maryland NGRI population is quite similar to other states. This study found the NGRI patient to be an average of 31 years old, 42.7 percent white, 75 percent single, and 76 percent with a record of prior arrests. They had an average of a tenth grade education. With the exception of race, this is quite similar to the profiles found in the earliest work by Morrow and Peterson (1966): 67 percent white, 33.5 years old, 23 percent married, and 66 percent with a criminal history.

This profile is also quite similar to the profile of insanity acquittees found in a number of other studies with one major exception: the NGRI population in this study had significantly higher prior arrest rates and fewer instant offense charges for murder than that found in most other studies. For example, in Cooke and Sikorski's work, 57 percent had been acquitted of murder compared to 30 percent in this research. In Petrila's (1981) study, 39 percent had previous arrests, and only 10 percent had been acquitted on murder. These differences on what types of charges persons are found NGRI appears to vary from region to region of the country, and have been noted by Steadman and Braff (1983). The degree to which the groups differed on prior psychiatric hospitalization and functioning will be the focus of the next chapter.

CHAPTER V
PSYCHIATRIC BACKGROUND AND COURSE OF HOSPITAL TREATMENT

Introduction

This chapter presents data pertaining to the psychiatric background of the three groups of subjects. The first section presents information on prior psychiatric hospitalization for all three groups, and it is the only section of this chapter which includes information on the control group. This includes information on the number of prior mental hospitalizations, the reasons for the most recent hospitalization, and previous diagnoses.

The next two sections of this chapter pertain solely to the NGRI group and prison transfer group. The second section presents information on the adequacy of patients' daily functioning during the year prior to commission of the instant offense, and symptoms exhibited prior to hospitalization. The third section of this chapter presents information on clinical variables and on the course of treatment in the hospital. Data is presented on signs and symptoms apparent at admission, diagnosis, IQ scores, types of treatment administered during hospitalization, use of seclusion, medication, and degree of improvement in patient's behavior at discharge.

This chapter is structured similarly to Chapter IV. Each exhibit is accompanied by a narrative highlighting significant findings. All comparisons have been made between the NGRI group and the prison transfer group, or the NGRI group and the matched control group. Statistically significant differences are designated in each exhibit by an *, designating significance at least at the .05 confidence level. The chapter concludes with a summary and analysis of significant findings.

Clinical Information Prior to Hospitalization

Prior Psychiatric Hospitalization

There were no differences in the rate of prior hospitalization between the NGRI group and prison transfers, but they both had been hospitalized more often than the control group. Sixty percent of both the NGRI group and the prison transfers had been hospitalized for mental problems at least once in the past, compared to 18.1 percent of the controls. As seen in Exhibit 5-1, the average number of prior psychiatric hospitalizations in both groups was 1.9, compared to an average of .40 in the control group. Correspondingly, just over one-third of both the NGRI's and the prison transfers had spent over nine months in prior hospitalizations, which was significantly more time than was spent by the control subjects.

Significantly more of the most recent prior psychiatric hospitalizations in the NGRI group had been voluntary commitments (40.3 percent), compared to 21.3 percent voluntary commitments in the prison transfer group. There had been less time between the most recent psychiatric hospitalization prior to the instant offense for the prison transfers (an average of 1.5 years), compared to the NGRI group (an average of 2.2 years). More of the NGRI's were diagnosed as schizophrenic (48.1 percent) compared to the prison transfers (33.3 percent) or the controls (3.7 percent). Significantly more of those in the control group who had been hospitalized were there for alcoholism (33.3 percent) or drug dependence (33.3 percent) compared to the NGRI's (13.9 percent alcoholism and 9.3 percent drug dependence). More NGRI (37.2 percent) patients had seen a private psychiatrist or been an outpatient prior to the instant offense compared to 13.3 percent of the prison transfers.

EXHIBIT 5-1
PRIOR PSYCHIATRIC HOSPITALIZATION

	NGRI Patients (N=127)		Prison Transfers (n=135)		Matched Control Group (n=127)	
Number of Hospitalizations						
None	52	40.9%*	53	39.3%	104	81.9%*
One	24	19.0	33	24.4	9	7.1
Two	17	13.4	8	5.9	10	7.9
Three	5	3.9	16	11.9	2	1.6
Four - five	14	11.0	14	10.4	0	-
Six - eight	11	8.7	6	4.4	1	.8
Nine or more	4	3.1	5	3.7	1	.8
	127	100.0	135	100.0	127	100.0
	$\bar{x}$ = 1.9		$\bar{x}$ = 1.9		$\bar{x}$ = .40	
	Median = 1.0		Median = 1.0		Median = 0	
Length of Time in All Prior Hospitalizations	(n=75)		(n=82)		(n=23)	
Less than 3 months	27	37.5%*	32	40.0%	13	61.9%*
3 - 6 months	8	11.1	14	17.5	3	14.3
6 - 9 months	9	12.5	5	6.3	2	9.5
Over 9 months	28	38.9	29	36.2	3	14.3
	72	100.0	80	100.0	21	100.0
Missing data	3		2		2	
Reason for Most Recent Hospitalization						
Observation/Treatment due to arrest	43	59.7%	59	78.7%	17	73.9%
Voluntary Commitment	29	40.3*	16	21.3*	6	26.1
	72	100.0	75	100.0	23	100.0
Missing data	3		7		0	
Time from Last Hospitalization To Instant Offense						
Thirty days or less	13	18.3%	7	12.3%	3	15.0%
1 - 3 months	7	9.8	6	10.5	2	10.0
3 - 6 months	6	8.5	9	15.7	2	10.0
6 months - 1 year	8	11.2	11	19.3	2	10.0
1 year - 2 years	11	15.5	11	19.3	3	15.0
2 years - 3 years	8	11.3	7	12.3	2	10.0
3 years - 5 years	10	14.1	3	5.3	3	15.0
Over 5 years	8	11.3	3	5.3	3	15.0
	71	100.0	57	100.0	20	100.0
Missing data	4		25		3	
	$\bar{x}$ = 2.2 years*		$\bar{x}$ = 1.5 years*		$\bar{x}$ = 2.1 years	
	Median = 1.2 yrs.		Median = .82 yrs.		Median = 1.3 yrs.	
Most Frequent Diagnosis[1]						
Schizophrenia	52	48.1%*	32	33.3%*	1	3.7%*
Personality disorder	11	10.2	16	16.7	3	11.1
Alcoholism	15	13.9*	13	13.5	9	33.3*
Mental retardation/OBS	11	10.2	13	13.5	4	14.8
Neuroses	1	.9	2	2.1	0	-
Bi-polar disorders	6	5.6	6	6.3	0	-
Drug dependence	10	9.3*	11	11.5	9	33.3*
Other psychoses	2	1.8	0	--	0	-
Other	0	-	3	3.1	1	3.7
	108	100.0	96	100.0	27	100.0

[1]Some patients had more than one diagnosis.

EXHIBIT 5-1 (Cont)

	NGRI Patients (N=127)		Prison Transfers (n=135)		Matched Control Group (n=127)	
Number of Times in Alcohol or Drug Treatment						
None	102	80.3%	99	73.3%	110	86.6%
Once	12	9.5	16	11.9	9	7.1
Two - three	8	6.3	13	9.6	7	3.9
Four - eight	5	3.9	7	5.2	1	2.4
	---	-----	---	-----	---	-----
	127	100.0	135	100.0	127	100.0
Length of Time Seen by Private Psychiatrist or as Outpatient						
Not seen	71	62.8%*	117	86.7%*	Not Available	
Less than 3 months	24	21.2	9	6.7		
3 - 6 months	3	2.7	3	2.2		
6 - 9 months	1	.9	3	2.2		
Over 9 months	14	12.4	3	2.2		
	---	-----	---	-----		
	113	100.0	135	100.0		
Missing data	14		0			

Functioning Prior to Instant Offense

Exhibit 5-2 shows that during the year prior to admission to the mental hospital for the instant offense, the NGRI group scored higher than the prison transfer group on the role functioning scale regarding functioning as a wage earner. Forty percent of the NGRI group compared to 22.6 percent of the prison transfers were rated as good or very good wage earners. On their overall functioning, however, there were no differences: just under one fifth of each group was rated as functioning very good or good during the year prior to admission.

EXHIBIT 5-2
FUNCTIONING DURING YEAR PRIOR TO INSTANT OFFENSE

Role Functioning Scale Rating	NGRI Patients (N=127)		Prison Transfers (n=135)	
Functioning as a Wage Earner				
Poor	40	33.3%*	46	54.8%*
Fair	32	26.7	19	22.6
Good	35	29.2]*	18	21.4]*
Very Good	13	10.8]	1	1.2]
	---	-----	--	-----
	120	100.0	84	100.0
Missing data	7		51	
Functioning as a Mate				
Poor	21	36.2%	Not Available	
Fair	25	43.1		
Good	11	19.0		
Very Good	1	1.7		
	--	-----		
	58	100.0		
Not applicable	69			
Functioning as a Parent				
Poor	23	39.7%	Not Available	
Fair	19	32.7		
Good	12	20.7		
Very Good	4	6.9		
	--	-----		
	58	100.0		
Not applicable	69			
Overall Functioning				
Poor	40	32.8%	20	29.4%
Fair	59	48.4	36	52.9
Good	22	18.0	11	16.2
Very Good	1	.8	1	1.5
	---	-----	--	-----
	122	100.0	68	100.0
Missing data	5		67	

Symptoms Exhibit Prior to Admission

More patients in the NGRI group exhibited symptoms at a younger age than the prison transfers. Exhibit 5-3 shows that 27.3 percent of the NGRI group showed the onset of symptoms of mental disorder prior to age 15, compared to 15.5 percent of the prison transfers. However, significantly more prison transfers exhibited symptoms from ages 16-20 (32.8 percent) compared to NGRI's (19.2 percent), and after age 20, differences in onset of symptoms disappeared.

During the month prior to admission to the hospital, it was more common for patients to exhibit thought disorder, delusions or hallucinations compared to depression, hypomania or mania. Significantly more of the prison transfers (86.4 percent) showed severe or moderate presence of thought disorder, delusions or hallucinations during the month prior to admission compared to 64 percent of the NGRI's.

Examination of the case records for precipitating events or stressors that may have led to the most recent psychiatric upset located no differences between the groups. Some type of stressor or precipitating event was evident in approximately 40 percent of both groups. Stressors generally involved fighting with a spouse, losing a job, fighting with a friend or neighbor, or death of a spouse or friend.

EXHIBIT 5-3
CLINICAL DATA

	NGRI Patients (N=127)		Prison Transfers (n=135)	
Approximate Age of Onset of Psychiatric Symptoms				
Under 10	8	8.1%]*	1	1.7%]*
10 - 15	19	19.2]	8	13.8]
16 - 20	19	19.2*	19	32.8*
21 - 30	35	35.3	22	37.9
Over 30	18	18.2	8	13.8
	99	100.0	58	100.0
Missing data	28		77	
Presence of Thought Disorder, Delusions, or Hallucinations During Month Prior to Admission				
Severe/continuous	51	40.8%]*	30	50.8%]*
Moderate	29	23.2]	21	35.6]
Minimal	4	3.2	3	5.1
None	41	32.8*	4	8.5*
	125	100.0	59	100.0
Missing data	2		76	
Presence of Depression, Hypomania or Mania During Month Prior to Admission				
Severe	16	12.7%	12	20.7%
Moderate	22	17.5	13	22.4
Minimal	6	4.8	4	6.9
None	82	65.0*	29	50.0*
	126	100.0	58	100.0
Missing data	1		77	
Precipitating Events/Stressors for Most Recent Psychiatric Upset During Month Prior to Admission				
No precipitative events	70	56.5%	42	62.7%
Minimal/moderate	28	22.6	14	20.9
Severe	23	18.5	10	14.9
Extreme	3	2.4	1	1.5
	124	100.0	67	100.0
Missing data	3		68	

Hospital Stay Information

Length of Stay

As shown in Exhibit 5-4, the average length of stay in the mental hospital was 25.5 months for the NGRI group, and 4.2 months for the prison transfer patients. The length of stay for NGRI patients ranged from 63 days to 3,455 days, and for prison transfers, length of stay ranged from 2 days to 2,033 days.

Examination of the number of times prison transfers had been at CTPHC previously revealed that 58.5 percent had been there prior to the instant offense. Nine percent had been transferred to Perkins Hospital four or more times. Those who were transferred more than once spent an average of 20.6 months in the hospital for all treatment episodes combined. Over one quarter (27 percent) of the transfer patients hospitalized more than once spent more than three years in the mental hospital.

Diagnosis

There were no significant differences in the diagnosis categories for the NGRI and prison transfer groups at the time of admission or discharge to the mental hospital. Exhibit 5-4 shows that over 70 percent were diagnosed as schizophrenic, most frequently paranoid schizophrenic and chronic undifferentiated. Approximately 10 percent of both groups were diagnosed as having personality disorders, and from 4 to 8 percent were diagnosed as mentally retarded.

EXHIBIT 5-4
CLINICAL STAY INFORMATION

	NGRI Patients (N=127)		Prison Transfers (n=135)	
Length of Hospitalization				
Two months or less	0	- %	21	15.8%
Two to four months	3	2.4	33	24.8
Four to eight months	8	6.3	42	31.6
Eight to twelve months	16	12.6	12	9.0
12 months to 18 months	22	17.3	10	7.5
18 months to 24 months	22	17.3	3	2.3
24 months to 36 months	30	23.6	6	4.5
36 months to 48 months	16	12.6	4	3.0
48 months to 120 months	10	7.9	2	1.5
	---	-----	---	-----
	127	100.0	133	100.0
Missing data	0		2	
	$\bar{x}$ = 25.5 months		$\bar{x}$ = 4.2 months	
	Median = 21 months		Median = 4.7 months	
Primary Diagnosis at Admission				
Schizophrenia	90	70.9%	96	78.0%
Personality disorder	10	7.8	13	10.6
Mental retardation	10	7.8	5	4.1
Organic brain syndrome psychoses	5	3.9	1	.8
Non-psychotic OBS	2	1.6	0	-
Bi-polar disorders-manic/mixed	2	1.6	0	-
Bi-polar disorders-depressed/ psychotic depressive reaction	2	1.6	0	-
Paranoid state	2	1.6	0	-
Alcoholism	1	.8	6	4.9
Drug dependence	0	-	2	1.6
Situational disturbance	2	1.6	0	-
Neuroses	1	.8	0	-
	---	-----	---	-----
	127	100.0	123	100.0
Missing data	0		12	
Primary Diagnosis at Discharge				
Schizophrenia	88	71.0%	92	73.6%
Personality disorder	8	6.5	11	8.8
Mental retardation	11	8.9	5	4.0
Organic brain syndrome psychoses	1	.8	1	.8
Non-psychotic OBS	3	2.4	0	-
Bi-polar disorders-manic/mixed	4	3.2	1	.8
Bi-polar disorders-depressed/ psychotic depressive reaction	3	2.4	3	2.4
Paranoid state	1	.8	0	-
Alcoholism	2	1.6	6	4.8
Drug dependence	3	2.4	3	2.4
Situational disturbance	0	-	0	2.4
	---	-----	---	-----
	124	100.0	125	100.0
Missing data	3		10	

Signs and Symptoms

All signs and symptoms of mental disturbance exhibited by the patients at the time of admission and during prior psychiatric hospitalizations were recorded and categorized into a matrix of mental disorder (see Exhibit 3-4).

Exhibit 5-5 shows that there was only one significant difference between groups on the classification matrix of signs and symptoms when each classification category was viewed individually; more NGRI patients (7.1 percent) than prison transfers (.8 percent) showed no signs of mental illness at admission. However, when all psychotic signs were grouped together, it was seen that significantly more prison transfers (86.1 percent) exhibited psychotic symptoms at admission than NGRI patients (65 percent). During prior hospitalizations, while psychotic-inward and psychotic-inward and outward signs were again the most prevalent classification in both groups, the prison transfer group did not exhibit more psychotic signs than the NGRI's at that time.

Of those who exhibited delusions or hallucinations at the time of admission, there were no differences in the types exhibited: over two-thirds of the delusions in both groups were categorized as persecutory or paranoid, and three-quarters of the hallucinations were auditory. There were also no between-group differences in types of hallucinations or delusions exhibited during prior hospitalizations.

EXHIBIT 5-5
SIGNS AND SYMPTOMS EXHIBITED AT ADMISSION

	NGRI Patients (N=127)			Prison Transfers (n=135)		
Classification of Signs and Symptoms						
Neurotic-inward	7	5.6%		6	4.7%	
Neurotic-outward	6	4.8		4	3.1%	
Psychotic-inward	38	30.1		50	38.8	
Psychotic-outward	16	12.7		21	16.3	
Neurotic-inward & outward	7	5.6	65%*	3	2.3	86.1%*
Neurotic & psychotic inward	6	4.8		0	-	
Neurotic & psychotic outward	2	1.5		1	.8	
Psychotic-inward & outward	28	22.2		40	31.0	
Neurotic-inward & outward/ psychotic outward	1	.8		0	-	
Neurotic-inward/psychotic-inward & outward	1	.8		0	-	
Neurotic outward/psychotic inward and outward	1	.8		3	2.3	
Retarded only or predominantly	4	3.2		0	-	
Without mental illness	9	7.1*		1	.8*	
	126	100.0		129	100.0	
Missing data	1			6		
Nature of Delusions Exhibited (For those who Exhibited Delusional Behavior at Admission)						
Persecutory/paranoid	58	68.2%		20	69.0%	
Grandiose	20	23.5		8	27.6%	
Somatic	3	3.5		0	-	
Sexual	2	2.4		0	-	
Pathological jealousy	0	-		0	-	
Self deprecatory	0	-		1	3.4	
Other	2	2.4		0	-	
	85	100.0		29	100.0	
Nature of Hallucinations Exhibited (For those who Exhibited Hallucinatory Behavior at Admission						
Visual	17	26.2%		17	20.2%	
Auditory	48	73.8		67	79.8	
	65	100.0		84	100.0	

EXHIBIT 5-5 (Cont)
SIGNS AND SYMPTOMS EXHIBITED DURING PRIOR HOSPITALIZATIONS

	NGRI Patients (N=127)		Prison Transfers (n=135)	
Classification of Signs and Symptoms				
Neurotic-inward	3	4.1%	6	8.1%
Neurotic-outward	7	9.5	3	4.1
Psychotic-inward	22	29.7	21	28.4
Psychotic-outward	7	9.5	9	12.2
Neurotic-inward & outward	3	4.1	4	5.4
Neurotic & psychotic inward	6	8.1	3	4.0
Neurotic & psychotic outward	1	1.4	1	1.4
Psychotic-inward & outward	19	25.6	21	28.4
Neurotic-inward & psychotic-inward & outward	1	1.4	2	2.7
Neurotic-outward & psychotic-inward & outward	2	2.6	0	-
Retarded only or predominantly	2	2.6	3	4.0
Without mental illness	1	1.4	1	1.4
	74	100.0	74	100.0
Missing data	1		8	
No Prior Hospitalization	52		82	
Nature of Delusions Exhibited (For those who exhibited delusional behavior during prior hospitalizations)				
Persecutory/paranoid	28	68.3%	47	74.6%
Grandiose	10	24.4	15	23.8
Somatic	2	4.9	0	-
Other	1	2.4	1	1.6
	41	100.0	63	100.0
Nature of Hallucinations Exhibited (For those who exhibited hallucinatory behavior during prior hospitalizations)				
Visual	13	31.7%	8	19.0%
Taste	1	2.4	0	-
Auditory	27	65.9	34	81.0
	41	100.0	42	100.0

Global Assessment Scale

Patients were rated with the Global Assessment Scale (GAS) at three points in time: one year prior to commission of the instant offense, at admission to the mental hospital, and at discharge. While there was no significant difference in the between-group average GAS score during the year prior to admission, there were significant differences on certain GAS intervals. For example, Exhibit 5-6 shows that more NGRI patients scored in the lower interval 21-30 (26.6 percent-unable to function in most areas) and 31-40 (32.3 percent-major impairment in several areas), compared to the prison transfers (9.3 percent and 18.5 percent). More of the prison transfers scored in the 41-50 interval - serious symptomatology or impairment (42.6 percent) compared to the NGRI's (22.6 percent).

At the time of admission, patients continued to exhibit similar GAS scores. Average GAS scores for both groups were in the 21-30 range in which patients are considered to need protection from the possibilities of hurting themselves or others, are frequently experiencing delusions or hallucinations, or are suicidal or violent.

At the time of discharge, GAS scores in both groups had risen to an average of 54.9 in the NGRI group and 49.4 in the prison transfer group. However, the average NGRI score was significantly higher than the average prison transfer score and significantly more NGRI's than prison transfers scored in the 61-70 range (indicating the presence of mild symptoms but generally functioning well) at time of discharge.

EXHIBIT 5-6
GLOBAL ASSESSMENT SCALE SCORES

	NGRI Patients (N=127)		Prison Transfers (n=135)	
Global Assessment Scale (GAS) Score During Year Prior to Admission				
1-10 (Needs constant supervision)	0	- %	1	1.9%
11-20 (Needs some supervision)	5	4.0	6	11.1
21-30 (Unable to function in most areas)	33	26.6*	5	9.3*
31-40 (Major impairment)	40	32.3*	10	18.5*
41-50 (Serious impairment)	28	22.6*	23	42.6*
51-60 (Moderate symptoms)	10	8.1	7	12.9
61-70 (Mild symptoms)	7	5.6	2	3.7
71-80 (Slight impairment)	1	.8	0	-
81-90 (Good functioning)	0	-	0	-
91-100 (Superior functioning)	0	-	0	-
	---	-----	--	-----
	124	100.0	54	100.0
Missing data	3		81	
	$\bar{X}$ = 38.9		$\bar{X}$ = 41.1	
	Median = 38.0		Median = 45	
Global Assessment Scale (GAS) Score At Admission				
1-10 (Needs constant supervision)	4	3.1%	11	8.7%
11-20 (Needs some supervision)	30	23.6	39	30.7
21-30 (Dysfunctional in most areas)	42	33.1*	29	22.8*
31-40 (Major impairment)	33	26.0	33	26.0
41-50 (Serious impairment)	11	8.7	8	6.3
51-60 (Moderate symptoms)	4	3.1	5	3.9
61-70 (Mild symptoms)	3	2.4	2	1.6
71-80 (Slight impairment)	0	-	0	-
81-90 (Good functioning)	0	-	0	-
91-100 (Superior functioning)	0	-	0	-
	---	-----	---	-----
	127	100.0	127	100.0
Missing data	0		8	
	$\bar{X}$ = 29.1		$\bar{X}$ = 27.4	
	Median = 28.0		Median = 25.0	
Global Assessment Scale (GAS) Score At Discharge				
1-10 (Needs constant supervision)	0	- %	0	- %
11-20 (Needs some supervision)	0	-	2	1.6
21-30 (Dysfunctional in most areas)	1	.8	5	4.1
31-40 (Major impairment)	11	8.9	14	11.5
41-50 (Serious impairment)	32	26.0	52	42.6
51-60 (Moderate symptoms)	48	39.0	37	30.3
61-70 (Mild symptoms)	29	23.6*	12	9.8*
71-80 (Slight impairment)	2	1.6	0	-
81-90 (Good functioning)	0	-	0	-
91-100 (Superior functioning)	0	-	0	-
	---	-----	---	-----
	123	100.0	122	100.0
Missing data	4		13	
	$\bar{X}$ = 54.9*		$\bar{X}$ = 49.4*	
	Median = 55.0		Median = 50.0	

Psychological Testing and Medical History

IQ tests were performed during the first several months at the mental hospital on nearly all of the NGRI patients and on approximately one-third of the penal transfers. Exhibit 5-7 shows that there were no significant between-group differences. Verbal IQ scores in the NGRI group ranged from 50 to 142 with an average of 88.5, and among the prison transfer patients, verbal IQ scores ranged from 46 to 113, with an average of 83.9. The performance scores and full scale IQ scores of both groups fell into similar breakdowns and averages as the verbal scores.

Though not significant, more of the prison transfer patients (22 percent) exhibited mild signs of organic brain syndrome during psychological testing, compared to the NGRI patients (10.6 percent). Also, more of the NGRI patients exhibited a severe degree of thought disturbance during psychological testing, (14 percent) compared to 2.9 percent of the prison transfers.

A prior medical history was found in similar proportions of both groups: 38.6 percent of the NGRI patients and 28.9 percent of the prison transfers. In the NGRI group, this history most often included head injuries or headaches, shotgun or stab wounds, and injuries resulting from earlier car accidents. Among prison transfer patients, the most commonly noted medical history included seizures or epilepsy, and injuries resulting from car accidents.

PSYCHOLOGICAL TESTING

	NGRI Patients (N=127)		Prison Transfers (n=135)	
Verbal IQ Scores				
40 - 60	10	8.3%	1	2.3%
61 - 70	10	8.3	5	11.3
71 - 80	18	15.0	15	34.1
81 - 90	34	28.3	9	20.5
91 - 100	15	12.5	8	18.2
101 - 110	14	11.7	3	6.8
111 - 120	12	10.0	3	6.8
121 - 130	6	5.0	0	-
131 - 140	0	-	0	-
141 - 150	1	.8	0	-
	120	100.0	44	100.0
Missing data	7		91	
	$\bar{X}$ = 88.5		$\bar{X}$ = 83.9	
	Median = 87.0		Median = 82.0	
Performance IQ Scores				
40 - 50	4	3.8%	2	4.7%
51 - 60	6	5.0	1	2.3
61 - 70	12	10.1	3	7.0
71 - 80	21	17.7	10	23.3
81 - 90	24	20.3	17	39.5
91 - 100	27	22.9	5	11.6
101 - 110	12	10.1	3	7.0
111 - 120	9	7.6	1	2.3
121 - 130	3	2.5	1	2.3
	118	100.0	43	100.0
Missing data	9		92	
	$\bar{X}$ = 86.2		$\bar{X}$ = 83.1	
	Median = 87.5		Median = 84.0	
Full Scale IQ Scores				
46 - 50	2	1.7%	2	3.7%
51 - 60	11	9.2	1	1.9
61 - 70	9	7.5	5	9.2
71 - 80	16	13.3	16	29.6
81 - 90	33	27.5	13	24.1
91 - 100	23	19.1	11	20.4
101 - 110	17	14.2	4	7.4
111 - 120	6	5.0	2	3.7
121 - 130	2	1.7	0	-
131 - 140	1	.8	0	-
	120	100.0	54	100.0
Missing data	7		81	
	$\bar{X}$ = 86.6		$\bar{X}$ = 83.1	
	Median = 85.5		Median = 82.0	
Degree of Organic Brain Syndrome				
None	92	74.8%	26	63.4%
Mild	13	10.6	9	22.0
Moderate/Severe	18	14.6	6	14.6
	123	100.0	41	100.0
Missing data	4		94	
Degree of Thought Disturbance				
None	59	48.4%	24	68.6%
Mild	17	13.9	5	14.3
Moderate	29	23.8	5	14.3
Severe	17	13.9	1	2.9
	122	100.0	35	100.0
Missing data	5		100	
Medical Problems				
Present	49	38.6%	39	28.9%
Absent	78	61.4	96	71.1
	127	100.0	135	100.0

Treatment During Hospitalization

Due to the different treatment goals the hospital has toward the two groups[1], the NGRI patients received more extensive treatment than the prison transfer patients. As seen in Exhibit 5-8, over 90 percent of the NGRI's received individual psychotherapy, and participated in hospital rehabilitation programs, such as art therapy, occupational therapy, or music therapy. In addition, 82.7 percent went into the hospital work release program, where they worked outside the secure facility prior to their conditional release. Over three-quarters (79.5 percent) received medication as part of their treatment, and 38.9 percent were secluded at least once.

In the transfer patient group, 89.6 percent received medication as the primary mode of treatment, 45.9 percent participated in rehabilitation programs, 39.3 percent received individual psychotherapy, and 26.7 percent participated in group therapy. Over half were secluded at least once. It follows, then, that 79.5 percent of the transfer patients were found to have minimal involvement in the hospital activities, while 79.2 percent of the NGRI's were rated very active or active.

Of those who received medication, the amount received was rated by psychiatrists to be minimal, moderate, or high on the basis of the dosage, duration of treatment, and type of medication. It was found that 86.1 percent of the prison transfer patients received moderate or high levels of medication compared to 53.2 percent of the NGRI patients. The NGRI

[1]The NGRI group was seen as a group to be evaluated, stabilized, treated and prepared for release, while the prison transfers were seen as a group to be evaluated, treated for the acute crisis or symptomatic difficulties, and returned to prison. Therefore, differences between the types of treatment administered are not appropriate for statistical testing.

EXHIBIT 5-8
TREATMENT PROGRAM

	NGRI Patients (N=127)		Prison Transfers (n=135)	
Types of Therapies Employed During Treatment				
Group psychotherapy	95	74.8%	36	26.7%
Individual psychotherapy	116	91.3	53	39.3
Rehabilitation program (i.e., (art, occupational, music)	116	91.3	62	45.9
Educational programs	44	34.6	18	13.3
Work outside security	105	87.2	0	-
Medication	101	79.5	121	89.6
Other	35	27.6	0	-
Degree of Participation in Hospital Therapeutic Activities				
Minimal	26	20.8%	101	79.5%
Average	68	54.4	24	18.9
Very active	31	24.8	2	1.6
	---	-----	---	-----
	125	100.0	127	100.0
Missing data	2		8	
Hospital Adjustment				
Very poor	2	1.6%	7	5.5%
Poor	27	21.8	32	25.2
Fair	31	25.0*	48	37.8*
Good	64	51.6*	40	31.5*
	---	-----	---	-----
	124	100.0	127	100.0
Missing data	3		8	
Assessment of Degree of Change in Patient's Behavior During Stay				
No improvement	7	5.6%	17	13.7%
Some improvement	75	60.5	75	60.5
Considerable improvement	42	33.9	32	25.8
	---	-----	---	-----
	124	100.0	124	100.0
Missing data	3		11	
Number of Episodes of Seclusion During Stay				
None	77	61.1%	56	44.1%
One	23	18.3	28	22.0
Two	11	8.7	23	18.1
Three	8	6.3	8	6.3
Four	2	1.6	7	5.5
Five - ten	2	1.6	5	1.6
Eleven - twenty	3	2.4	0	2.4
	---	-----	---	-----
	126	100.0	127	100.0
Missing data	1		8	
Medication During Hospitalization				
None	26	20.6%	1	.7%
Minimal	33	26.2	16	13.1
Moderate	61	48.4	61	50.0
High	6	4.8	44	36.1
	---	-----	---	-----
	126	100.0	122	100.0
Missing data	1		13	
Compliance with Prescribed Medication	(n=93)			
Difficult	3	3.1%	15	12.7%
Episodic	10	10.4	23	19.5
Very cooperative	83	86.5*	80	67.8*
	--	-----	---	-----
	96	100.0	118	100.0
Missing data	1		17	

patients were also found to be significantly more cooperative with taking the medication: 86.5 percent were reported as very cooperative compared to 67.8 percent of the transfers.

Patients in the NGRI group received an average of 2.3 monthly visits by family or friends. No visitation records were available for the transfer patients.

Significantly more NGRI patients were found to have good hospital adjustments (51.6 percent) compared to the prison transfers (31.5 percent). However, when assessing the degree of change in each patient's behavior during the hospital stay, 60.5 percent of both groups were rated as having shown some improvement.

Summary

Exhibit 5-9 presents a summary of differences between the NGRI and prison transfer patients on clinical variables presented in this chapter. The table shows that, outwardly, these two groups appear quite similar, but when examined in more detail, a variety of differences emerge.

EXHIBIT 5-9
SUMMARY OF SIGNIFICANT DIFFERENCES BETWEEN NGRI AND PRISON TRANSFER PATIENTS

	Z
Percent previously hospitalized	NS
Percent previously hospitalized voluntarily	2.5*
Length of time from last hospitalization until instant offense	4.9(t-test)**
Percent schizophrenic in previous hospitalizations	2.2*
Percent seen by private psychiatrist	4.4**
Percent onset of psychiatric symptoms age 16 - 20	1.9*
Percent exhibiting symptoms prior to admission	3.6**
Without mental illness at admission	2.7**
Average GAS score at discharge	4.4(t-test)**

* = $p < .05$
** = $p < .01$

While there were no differences in the frequency with which the two groups had been hospitalized previously for psychiatric problems (60 percent in both groups), there were distinct differences in the reason for prior hospitalizations, diagnoses, and when they occurred. Compared to the prison transfers, more of the NGRI patients had been hospitalized voluntarily, more had been diagnosed as schizophrenic, and there had been a longer time between their last hospitalization and the time they committed the instant offense. Further, more insanity acquittees than the prison transfers had been seen by a private psychiatrist. Though differences in diagnosis were not apparent at admission, a difference in signs and

symptoms was evident. The prison transfers showed more symptoms of thought disorder, delusions or hallucinations just prior to admission, and exhibited more psychotic signs and symptoms at admission than did the NGRI patients.

All of this data, as well as that presented in the last chapter, points to the insanity acquittees and prison transfer populations as two quite different mentally disordered groups of offenders. In the last chapter, it was seen that the NGRI group was older, composed of fewer minority members, better educated, and more stable (higher marital rates and more continuously employed) than the prison transfer group. In this chapter, it was seen that the insanity acquittees were more likely to have shown psychiatric symptoms at a younger age. In addition, probably due to their higher class status, they were more likely to have been treated by a private psychiatrist and to have been hospitalized voluntarily than the prison transfers. Prison transfers, reflecting their higher prior arrest rates, were more often hospitalized for observation or treatment after being arrested.

These differences in the two populations bring up several issues. First, it appears that the prisoners sent to the hospital for treatment are seriously ill. Therefore, the screening mechanism used at the Department of Corrections to select individuals for transfer appears to be accurate. While 7 percent of the insanity acquittees sent to the hospital showed no signs of mental illness, less than 1 percent of the prison transfers were found to have no mental illness at admission. Prison transfer patients are more psychotic, more difficult to manage (placed in seclusion more often), and make significantly less improvement during their stay than the insanity

acquittees. Further, they are often returned again and again to the hospital: nearly 40 percent had been transferred to Perkins Hospital previously, and 9 percent had transferred four or more times. Since prior to this study, little had been known about this prison transfer group, it might now be appropriate for the treatment program of these patients to be reviewed in light of these findings. As will be seen in the next chapter, these patients do significantly worse after release as well. Therefore, it appears that prison transfers, as alleged in the literature, are not particularly wanted by either the penal or mental health systems, and may not be getting the treatment they need from either system.

Second, the matrix developed by Silver and Spodak (Exhibit 3-4) to categorize signs and symptoms appeared to yield fairly reliable results. In both the NGRI group and prison transfer group, the majority of patients fell into three categories: psychotic-inwardly directed, psychotic-inwardly and outwardly directed, and psychotic-outwardly directed. Further analysis of the reliability of this matrix is warranted, as well as an examination of its usefulness in categorizing patients for treatment.

Third, the relationship between history of medical problems and mental illness warrants further examination. It was seen that about 30 percent of both insanity acquittees and prison transfers had medical problems, most often head injuries and injuries from car accidents. Also, as was seen in the last chapter, 45 percent of the NGRI's and 21.4 percent of the prison transfer patients had suffered a major illness or accident as a child, again usually a head injury. Further, between 12.5 and 23.3 percent had been abused as children. As Lewis et al. (1985) has suggested, there may be a link between abuse and later violence and head injury and

violence. The relationships between these factors and their prevalence in the insanity acquittee population and prison population warrants further examination in light of these findings.

Fourth, when compared to several findings from other studies, our NGRI population showed higher prior hospitalization rates. Previous research that looked at prior hospitalizations of insanity acquittees had findings ranging from 34 percent (Morrow and Peterson, 1966), to 43 percent (Cooke and Sikorski, 1974), to 44 percent in Steadman's study in New York. The only study with higher prior hospitalization than our finding of 59.1 percent was Petrila's (1981) study of insanity acquittees in Missouri, where 79 percent had prior hospitalizations. These differences may be related to regional and state differences for which persons were found NGRI, as well as differing prior criminal backgrounds. This question will be addressed in further detail in the Analysis of Outcome section of Chapter VI.

CHAPTER VI
OUTCOME AFTER RELEASE

Introduction

Information on a variety of outcome variables was obtained for all subjects in all three groups. In addition to the major outcome variables of rearrest and rehospitalization, data was collected on each subjects' employment situation after release, utilization of aftercare services, living arrangements, marital situation, functioning in the community, compliance with medication, and compliance with other conditions of release.

For some of these variables, the length of follow-up differed by group. For example, in the NGRI group, information was obtained on each patient for a five year period after his release from the hospital. While nearly all were released on five-year conditional releases, about 15 percent were terminated early, usually because of excellent compliance, moving out of state, or having received a two year conditional release. For the prison transfer and control groups, detailed information on outcome after release from prison was available only for the length of time for which each individual was on parole. Parole time varied from one month to over ten years, with an average time of over two years for both groups (see Exhibit 6-1).

As discussed earlier in Chapter III, because of this disparity between follow-up lengths, several steps were taken to make the outcome information between groups more comparable. First, to better approximate the average time on parole, the NGRI follow-up period was broken up into halves: patients were rated at two and a half years after release and again at five years after release. The rating at the end of the first half

provided a closer approximation to the average parole period of two years. Second, all rearrest date was coded at two points in time: during the first five years after release and during the entire follow-up period. For comparability between groups, nearly all analysis was done on rearrest data within five years after release.

This chapter is structured into two sections. The first section presents data in a manner similar to that of Chapters IV and V; frequency tables with significant between-group differences (highlighted by an * if significant at least at the .05 confidence level) are accompanied by narrative discussions of major findings. When NGRI group data is compared to data from the two parolee groups, data from the first half of the NGRI follow-up period is used.

The second section of this chapter presents an analysis of the outcome information. The first part of this section examines changes in subjects' pre and post behavior. Comparisons between functioning before hospitalization are made with outcome information on rates of arrest, hospitalization, employment, incarceration and other factors. The second part of this section examines significant relationships between independent variables and outcome variables, and presents those variables that are associated with successful outcome. The chapter concludes with a summary and analysis of the implications of the findings.

Outcome Indicators

Living Situation After Discharge

Exhibit 6-1 shows major differences in the living situations to which each group was released. While about one-third of all releasees were discharged to living situations at home with their parents, significantly more NGRI's were discharged to a halfway house (22.8 percent), compared to prison transfers (7.4 percent) or controls (4.5 percent). Significantly more prison transfers were released to a mental hospital (23.4 percent), compared to none in the other two groups being released to a mental hospital. More NGRI's (16.5 percent) and controls (26.1 percent) lived with a spouse or girlfriend compared to prison transfers (3.2 percent).

Compliance with Conditions of Release

Successful completion of parole or conditional release (where parole or release was not revoked), was achieved by approximately 90 percent of each group. The degree to which the social worker or parole agent maintained contact with the subject during the mandated follow-up period also did not differ between groups: in two-thirds to three-quarters of the cases, the worker maintained contact the entire time. When contact was not maintained, it was generally because the subject had moved and left no clue as to his whereabouts, or because he ceased showing up for appointments and was not relocated.

The NGRI group and the control group were more often found to be "mostly" in compliance with their conditions of release (53.6 percent and 44.4 percent) compared to 32.6 percent of the prison transfers. Of those who were "not at all" in compliance or only "somewhat" in compliance, the

most frequent type of prohibited behavior engaged in differed significantly by group. In both parolee groups, criminal or illegal activity discovered by the parole agent was the most frequent type of prohibited behavior noted (45 percent in both groups), compared to 19.2 percent in the NGRI group. For the NGRI's, at both follow-up time periods, significantly more engaged in drinking (39 percent to 44 percent), compared to the other two groups (16.7 percent and 13.9 percent).

EXHIBIT 6-1
LENGTH OF TIME ON CONDITIONAL RELEASE OR PAROLE
AND COMPLIANCE WITH CONDITIONS OF RELEASE

	NGRI Patients (N=127)		Prison Transfers (n=135)		Matched Control Group (n=127)	
Length of Conditional Release or Parole						
	Conditional Release		Parole Length		Parole Length	
1 to 3 months	0	- %	11	10.3%	9	7.3%
3 to 6 months	1	.8	8	7.5	7	5.6
6 to 9 months	0	-	7	6.5	5	4.0
9 to 12 months	4	3.2	8	7.5	15	12.1
1 to 1.6 years	3	2.4	12	11.2	10	8.0
1.7 to 2 years	4	3.2	10	9.4	14	11.3
2 to 3 years	3	2.4	17	15.9	24	19.4
3 to 4 years	3	2.4	15	14.0	18	14.5
4 to 5 years	78	62.9	7	6.5	9	7.3
5 to 6 years	24	19.4	5	4.7	4	3.2
6 to 10 years	4	3.2	7	6.5	9	7.3
	124	100.0	107	100.0	124	100.0
Missing data	3		28		3	
	$\bar{X}$ = 4.6 yrs. Median = 5 yrs.		$\bar{X}$ = 2.3 yrs. Median = 2.0		$\bar{X}$ = 2.5 yrs. Median = 2.0	
Living Situation After Discharge						
Parents	40	31.5%	35	37.2%	31	35.2%
Halfway house	29	22.8*	7	7.4*	4	4.5*
Other relatives	27	21.3	16	17.0	11	12.5
Spouse/girlfriend	21	16.5*	3	3.2*	23	26.1*
Alone	6	4.7	9	9.6	10	11.4
Mental hospital	0	- *	22	23.4*	0	-
Other	4	3.1	2	2.1	9	10.2
	127	100.0	94	100.0	88	100.0
Missing data	0		41		39	
Successful Completion of Conditional Release or Parole						
Revoked	8	6.3%	9	6.7%	15	11.8%
Not revoked	119	93.7	126	93.3	112	88.2
	127	100.0	135	100.0	127	100.0
Social Worker or Parole Agent Contact						
Maintained entire time	92	74.2%	65	75.6%	59	65.6%
Not maintained	32	25.8	21	24.4	31	34.4
	124	100.0	86	100.0	90	100.0
Missing data	3		49		37	
Compliance with Conditional Release or Parole Conditions						
	At 2 1/2		At 5 yrs			
Not at all	24	19.2	19	18.3%	28	32.6%	22	24.4%
Somewhat	34	27.2	25	24.0	30	34.9	28	31.2
Mostly	67	53.6*	60	57.7	28	32.6*	40	44.4
	125	100.0	104	100.0	86	100.0	90	100.0
Missing data	2		23		49		37	
If Not at All or Somewhat: What was the Prohibited Behavior?[1]								
	(n=58)		(n=44)		(n=58)		(n=68)	
	At 2 1/2		At 5 yrs					
Drinking	40	38.5*	32	43.8%	16	16.7%*	11	13.9%*
Drug use	12	11.5	9	12.3	10	10.4	10	12.7
Socializing w/prohibited others	4	3.8	2	2.7	0	-	0	-
Criminal/illegal act.	20	19.2*	13	17.8	43	44.8*	36	45.6*
Inappropriate conduct	12	11.5	11	15.1	10	10.4	5	6.3
Left area/moved w/o permission	16	15.4	6	8.2	17	17.7	17	21.5
	104	100.0	73	100.0	96	100.0	79	100.0

[1]May have engaged in more than one behavior.

Employment After Release

Exhibit 6-2 shows that the NGRI patients and control subjects had significantly better employment records after release than the prison transfers. More NGRI's (38.5 percent) and controls (48.3 percent) were employed continually full-time compared to prison transfers (11.4 percent). Over half of the prison transfers (54.5 percent) were unemployed continually, compared to only 17.2 percent of the NGRI's and 15.5 percent of controls.

Along the same lines, of those who worked, the most frequently held job was unskilled laborer, such as construction worker, janitor, or gas station attendant. This was followed most frequently by semi-skilled labor jobs such as truck driver, and skilled manual labor jobs, such as a painter or carpenter. The NGRI's however, reflecting their higher education, held more white collar jobs, such as sales, administration, or business than either of the other two groups.

Significantly more (42.6 percent) of the prison transfers were receiving public assistance (either welfare, social security, or unemployment) after release compared to the NGRI group (9 percent), or the control parolees (11.5 percent). The control parolees, consistent with having a high employment rate, had the highest rate of self support after release (56.4 percent) compared to both the NGRI's (27.9 percent), and the prison transfers (21.9 percent). Less than 4 percent of all three groups were solely supported by their parents after release.

EXHIBIT 6-2
EMPLOYMENT AFTER RELEASE

	NGRI Patients (N=127)				Prison Transfers (n=135)		Matched Control Group (n=127)	
Employment Record	At 2 1/2		At 5 yrs		During Parole		During Parole	
Unemp. continually	21	17.2*	25	24.0%	48	54.5%*	18	15.5%
Emp. erratically	46	37.7*	26	25.0	23	26.1	26	22.4*
Emp. continually (part-time)	8	6.6	10	9.6	7	8.0	16	13.8
Emp. continually (full-time)	47	38.5*	43	41.3	10	11.4*	56	48.3
	---	-----	---	-----	--	-----	---	-----
	122	100.0	104	100.0	88	100.0	116	100.0
Missing data	5		23		47		11	
Source of Income								
Self	34	27.9*	32	30.5%	18	21.9%	44	56.4%*
Public (welfare, SS, unemployment)	11	9.0*	13	12.4	35	42.6*	9	11.5
Parents	3	2.4	2	1.9	3	3.7	1	1.3
Parents/self	13	10.7	5	4.8	3	3.7	5	6.4
Self/Spouse	11	9.0	8	7.6	3	3.7	3	3.8
Public/self	37	30.3*	37	35.2	10	12.2*	12	15.4*
Public/parents	8	6.6	5	4.8	10	12.2	1	1.3
Other non-self	5	4.1	3	2.8	0	-	3	3.8
	---	-----	---	-----	--	-----	--	-----
	122	100.0	105	100.0	82	100.0	78	100.0
Missing data	5		22		53		49	
Type of Job Held								
Unskilled laborer		55		48.7%	25	34.2%	39	55.7%
Semi-skilled		15		13.3*	7	9.6	16	22.9
Skilled manual labor		16		14.2	4	5.5	12	17.1
Clerical or sales		15		13.3*	3	4.1	0	- *
Administrative		2		1.8	1	1.4	0	-
Professional		3		2.7	0	-	0	-
No paid employment		8		6.2*	33	45.2*	3	4.3
		---		-----	--	-----	--	-----
		113		100.0	73	100.0	70	100.0
Missing data		14			62		57	

Utilization of Services After Release

Exhibit 6-3 presents subjects' rate of attendance or utilization of mandated services after release. Subjects in the NGRI group and control group were significantly better at maintaining regular contact with their workers compared to the prison transfers. Three-quarters of the NGRI's and control group members maintained regular or excellent contact with their social workers or agents, compared to 57 percent of the prison transfers.

In the NGRI group, however, regular reporting to the social worker declined during the second half of the conditional release (to 64.6 percent). Regarding treatment at other agencies, over half of both the NGRI's and prison transfers maintained regular or excellent attendance in receiving these services, which were generally collateral counseling services. Other services, such as training programs, or attendance in Alcoholics Anonymous, were significantly less well attended on the part of the NGRI patients, though AA was extremely well attended by members of both parolee groups who were mandated to attend.

EXHIBIT 6-3
UTILIZATION OF AFTERCARE SERVICES

	NGRI Patients (n=127)				Prison Transfers (n=135)		Matched Control Group (n=127)	
Reporting to Social Worker or Parole Agent	At 2 1/2		At 5 yrs		During Parole		During Parole	
Poor	11	10.5%	14	15.6%	15	19.0%	6	8.5%
Sporadic	16	15.2	18	20.0	19	24.0	9	12.7
Regular	49	46.7	39	43.3 *	38	48.1 *	48	67.6
Excellent	20	27.6	19	21.1	7	8.9	8	11.3
	105	100.0	90	100.0	79	100.0	71	100.0
Missing data	22		37		56		56	
Treatment at Other Agencies								
Poor	12	30.0%	11	32.4%	11	25.6%	13	21.7%
Sporadic	5	12.5	3	8.8	9	20.9	7	11.7
Regular	14	35.0	13	38.2	19	44.2	39	65.0
Excellent	9	22.5	7	20.6	4	9.3	1	1.6
	40	100.0	34	100.0	43	100.0	60	100.0
Not applicable	87		93		92		67	
Attendance at Alcoholics Anonymous								
Poor	3	30.0%	3	42.9%	1	16.7%	2	15.4%
Sporadic	4	40.0	4	57.1	0	-	1	7.7
Regular	3	30.0*	0	-	5	83.3*	9	69.2*
Excellent	0	-	0	-	0	-	1	7.7
	10	100.0	7	100.0	6	100.0	13	100.0
Not applicable	117		120		129		114	

Functioning After Release

For the NGRI group and the prison transfer group, data was collected on the reappearance of previous disorders or the appearance of new mental disorders during follow-up. Exhibit 6-4 shows that fewer NGRI patients (51.6 percent) than prison transfers (70.9 percent) showed the reappearance of previous disorders or the appearance of new mental disorders during parole or conditional release. Subsequent disorders were noted either by the social worker, parole agent, family members, or the patient himself. In the NGRI group, the types of symptoms most often exhibited by those who showed mental disorder during release were psychotic behavior/ delusional, paranoid behavior, violent or bizarre behavior, drinking excessively or taking drugs, suicidal tendencies, depression, or decompensation due to stopping medication. In the prison transfer group, the symptoms most often noted during release were psychotic behavior/delusional/hallucinating, violent or bizarre behavior, excessive use of alcohol or drugs, and confusion or withdrawal.

Significantly more NGRI patients were prescribed some medication after release (53.2 percent) compared to the prison transfers (15.6 percent). Compliance with medication was significantly higher among the NGRI's as well: 46 percent complied completely during the first half of the release period and 41.3 percent during the second half. In the prison transfer group, 68.4 percent took their medication irregularly while on parole, and only 21.1 percent took it regularly or somewhat regularly. Between 6 and 10 percent in both groups did not take their medication at all.

EXHIBIT 6-4
FUNCTIONING AFTER RELEASE

	NGRI Patients (N=127)				Prison Transfers (n=135)	
Reappearance of Previous Disorders or New Mental Disorders						
Yes	64	51.6%*	50	50.0%	61	70.9%*
No	60	48.4	50	50.0	25	29.1
	124	100.0	100	100.0	86	100.0
Missing data	3		27		49	
Degree of Medication Prescribed During Release						
High	1	.8%			6	4.4%
Moderate	46	36.5			11	8.2
Minimal	20	15.9			4	3.0
None	59	46.8*			114	84.4*
	126	100.0			135	100.0
Missing data	1					
Degree of Compliance with Medication Plan	At 2 1/2 (n=67)		At 5 yrs		During Parole (n=21)	
Did not take at all	4	6.3%	4	8.7%	2	10.5%
Took irregularly	20	31.7*	10	21.7	13	68.4*
Took somewhat regularly	10	15.9	13	28.3	3	15.8
Complied completely	29	46.0	19	41.3	1	5.3
	63	100.0	46	100.0	19	100.0
Missing data	4		21		2	
Global Assessment Scale (GAS) Score During Follow-up						
1-10 (Needs constant supervision)	0	- %	2	1.9%	0	- %
11-20 (Needs some supervision)	2	1.7	5	4.8	1	1.6
21-30 (Dysfunctional in most areas)	12	9.9	13	12.4	8	12.7
31-40 (Major impairment)	14	11.6*	12	11.4	20	31.7*
41-50 (Serious impairment)	25	20.7	12	11.4	18	28.6
51-60 (Moderate symptoms)	26	21.5	21	20.0	9	14.3
61-70 (Mild symptoms)	29	23.9*	22	20.9	5	7.9*
71-80 (Slight impairment)	13	10.7	17	16.2	2	3.2
81-90 (Good functioning)	0	-	1	1.0	0	-
91-100(Superior functioning)	0	-	0	-	0	-
	121	100.0	105	100.0	63	100.0
Missing data	6		22		72	
	$\bar{x}$ = 53.1*		$\bar{x}$ = 52.1		$\bar{x}$ = 44.2*	
	Med. = 54		Med. = 55		Median = 43	

EXHIBIT 6-4 (Cont)

Role Functioning Scale Rating	NGRI Patients (N=127)				Prison Transfers (n=135)	
Functioning as a Wage Earner	At 2 1/2		At 5 yrs		During Parole	
Poor	34	28.3%	31	30.1%	53	65.4%
Fair	27	22.5	20	19.4	12	14.8
Good	32	26.7 *	29	28.2	13	16.0 *
Very Good	27	22.5	23	22.3	3	3.7
	120	100.0	103	100.0	81	100.0
Not appliable	7		24		54	
Functioning as a Mate						
Poor	7	16.7%	11	26.2%	Not Available	
Fair	14	33.3	15	35.7		
Good	18	42.9	14	33.3		
Very Good	3	7.1	2	4.8		
	42	100.0	42	100.0		
Not applicable	85		85			
Functioning as a Parent						
Poor	16	32.7%	16	36.4%	Not Available	
Fair	8	16.3	5	11.4		
Good	23	46.9	22	50.0		
Very Good	2	4.1	1	2.2		
	49	100.0	44	100.0		
Not applicable	78		83			
Overall Functioning						
Poor	24	19.8%	25	24.0%	30	39.5%
Fair	37	30.6	23	22.1	32	42.1
Good	49	40.5 *	46	44.2	13	17.1 *
Very Good	11	9.1	10	9.6	1	1.3
	121	100.0	104	100.0	76	100.0
Not applicable	6		23		59	

The Global Assessment Scale (GAS) scores achieved at discharge from the mental hospital by the NGRI group were maintained, on the average, throughout the five year conditional release period. At discharge, the average GAS score for the NGRI group was 54.9, with a median of 54. Scores in the 51-60 range represent individuals functioning with some difficulty or showing moderate symptoms but not serious symptomatology or impairment that requires treatment. During the first half of the conditional release period, the average GAS score was 53.1, with a median of 54, and during the second half, the average GAS was 52.1, with a median of 55. During both time periods, over one-third were functioning in the over 60 range, which indicates some mild symptoms but generally functioning well. This was significantly better than the prison transfer group, where the average GAS score declined 5 points from the time of discharge from the hospital until parole expired (49.4 to 44.2). The median score declined from 50 at discharge to 43 during parole. More of the prison transfers had scores in the 31 to 40 range, which indicates functioning which shows serious impairment in several areas, such as work, family, judgment or thinking, compared to NGRI's (11.6 percent in this category).

Consistent with these GAS scores, more NGRI patients were found to be functioning "good" or "very good," (49.6 percent) on the overall role functioning scale, compared to the prison transfers (18.4 percent).

Hospitalization After Release

Significantly more prison transfers (59.3 percent) than NGRI patients (45.7 percent) were readmitted to mental hospitals after release (Exhibit 6-5). In comparison, only 8.7 percent of the control group subjects were admitted to a mental hospital after release. Significantly more prison transfers were hospitalized two or more times after release (44.5 percent) compared to the NGRI's (25.9 percent). The average number of readmissions was 1.4 for NGRI patients, 2.0 for prison transfers, and .2 for controls.

The reason for rehospitalization also differed significantly by group. For more NGRI patients (57.1 percent), their first hospitalization after release was most often voluntary, while for prison transfers, 66.7 percent were rehospitalized the first time after release due to observation or treatment resulting from an arrest.

There was no difference between the subsequent amount of rehospitalization time spent by insanity acquittees or prison transfers, or the types of subsequent diagnoses. Approximately half of both groups were rehospitalized a total of less than three months, and about one-third over nine months. The primary diagnosis for the first readmission for both groups was schizophrenia (57.1 percent for the NGRI's and 66.2 percent for the transfers), followed by alcoholism (16.3 percent for the NGRI's and 13.2 percent for the prison transfers). This alcoholism diagnosis is significantly higher than was found at the time of admission, when less than 5 percent in either group had been diagnosed alcoholic. Nearly all control subjects hospitalized during this period were seen for alcoholism or drug dependence.

The location of rehospitalization also differed between groups. Among the NGRI's who were rehospitalized, half went to C.T. Perkins Hospital Center, compared to 21.2 percent of the prison transfers being rehospitalized at Perkins. Nearly three-quarters of the prison transfers had their first rehospitalization at a state mental hospital.

EXHIBIT 6-5
PSYCHIATRIC HOSPITALIZATION AFTER RELEASE

	NGRI Patients (N=127)		Prison Transfers (n=135)		Matched Control Group (n=127)	
Number of Admissions						
None	69	54.3%*	55	40.7%*	116	91.3%*
One	25	19.7	22	16.3	7	5.5
Two	15	11.8	26	19.3	2	1.6
Three	6	4.7	14	10.4	0	-
Four or more	12	9.4	20	14.8	2	1.6
	---	-----	---	-----	---	-----
	127	100.0	135	100.0	127	100.0
	$\bar{x}$ = 1.4*		$\bar{x}$ = 2.0		$\bar{x}$ = .2*	
	Median = 1.0		Median = 1.0		Median = .0	
Reason for First Hospitalization	(n=58)		(n=80)		(n=11)	
Observation/treatment due to arrest	21	42.9%	48	66.7%	7	87.5
Voluntary	28	57.1*	24	33.3*	1	12.5
	--	-----	--	-----	-	-----
	49	100.0	72	100.0	8	100.0
Missing data	9		8		3	
Total Amount of Time in All Post-Release Hospitalizations						
Less than three months	26	47.3	42	52.5	7	63.6
Three to six months	8	14.5	8	10.0	3	27.3
Six to nine months	4	7.3	5	6.2	0	-
Over nine months	17	30.9%*	25	31.3%	1	9.1%*
	--	-----	--	-----	--	-----
	55	100.0	80	100.0	11	100.0
Missing data	3		0		0	
Primary Diagnosis for Those Readmitted						
Schizophrenia	28	57.1%	45	66.2%	1	10.0
Personality disorder	3	6.1	3	4.4	1	10.0
Alcoholism	8	16.3*	9	13.2	5	50.0*
Mental retardation/ OBS	4	8.2	3	4.4	0	-
Bi-polar disorders	3	6.1	0	-	0	-
Drug dependence	2	4.1*	6	8.8	3	30.0*
Neuroses	1	2.0	1	1.5	0	-
Transient situational disturbance	0	-	1	1.5	0	-
	--	-----	--	-----	--	-----
	49	100.0	68	100.0	10	100.0
Missing data	9		12		1	
Location of First Hospitalization After Release						
C.T. Perkins Hospital Center	29	50.0%*	17	21.2%*	0	- %
St. Elizabeths Hospital	3	5.2	4	5.0	0	-
Maryland State Mental Hospital	26	44.8	59	73.8	11	100.0
	--	-----	--	-----	--	-----
	58	100.0	80	100.0	11	100.0

Rearrests Within Five Years After Release

Exhibit 6-6 shows that the prison transfers had a significantly higher rate of rearrest within five years compared to the other two groups. Nearly three-quarters of the prison transfers (73.3 percent) were rearrested compared to 54.3 percent of the NGRI patients and 65.4 percent of the matched control parolees. The prison transfers had an average number of rearrests double that of the NGRI's (2.6 versus 1.3).

The matched control group had more convictions for an FBI Index Part I offense within five years after release than the other two groups. Over one-quarter (28.3 percent) of the control parolees, compared to 22.2 percent of the prison transfers, and 10.2 percent of the NGRI patients were convicted of a Part I offense. Both parolee groups also had significantly higher conviction rates for a Part II offense compared to the NGRI group. Approximately one-third of both prison transfers and controls compared to 16.5 percent of the NGRI group had convictions for Part II offenses.

Significantly more of the prison transfer and controls were reincarcerated during the five year follow-up period compared to the NGRI's. Forty percent of the prison transfers and 35.4 percent of the controls were reincarcerated during the five year period compared to 11.8 percent of the NGRI's.

EXHIBIT 6-6
REARRESTS DURING FIVE YEAR FOLLOW-UP

	NGRI Patients (N=127)		Prison Transfers (n=135)		Matched Control Group (n=127)	
Number of Rearrests Within Five Years						
None	58	45.7%*	36	26.7%*	44	34.6%
One	30	23.6	25	18.5	25	19.7
Two	24	18.9	27	20.0	15	11.8
Three	2	1.6	10	7.4	15	11.8
Four - six	7	5.5	22	16.3	19	15.0
Seven - ten	6	4.7	12	8.9	7	5.5
Over ten	0	-	3	2.1	2	1.6
	127	100.0	135	100.0	127	100.0
	$\bar{X}$ = 1.3		$\bar{X}$ = 2.6		$\bar{X}$ = 2.1	
	Median = 1.0*		Median = 2.0*		Median = 1.0	
Number of Convictions for a Part I Offense						
None	114	89.8%*	105	77.8%	91	71.7%*
One	11	8.7	17	12.6	32	25.2
Two or more	2	1.6	13	9.6	4	3.1
	127	100.0	135	100.0	127	100.0
	$\bar{X}$ = .12		$\bar{X}$ = .33		$\bar{X}$ = .31	
Number of Convictions for a Part II Offense						
None	106	83.5%*	91	67.4%*	88	69.3%*
One	16	12.6	25	18.5	22	17.3
Two or more	5	3.9	19	14.1	17	13.4
	127	100.0	135	100.0	127	100.0
	$\bar{X}$ = .22		$\bar{X}$ = .51		$\bar{X}$ = .54	
Number of Times on Probation						
None	107	84.3%	118	87.4%	108	85.0%
One	16	12.6	13	9.6	16	12.6
Two or more	4	3.1	4	3.0	3	2.4
	127	100.0	135	100.0	127	100.0
	$\bar{X}$ = .20		$\bar{X}$ = .15		$\bar{X}$ = .17	
Number of Times Incarcerated						
None	112	88.2%*	81	60.0%*	82	64.6%*
One	12	9.4	36	26.7	28	22.0
Two or more	3	2.4	18	13.3	17	13.4
	127	100.0	135	100.0	127	100.0
	$\bar{X}$ = .15		$\bar{X}$ = .60		$\bar{X}$ = .54	

Types of Charges

Exhibit 6-7 shows that there were no significant differences in the overall types of charges for which subjects were arrested during the five years after release. Property crimes accounted for over one-quarter of all charges in each group, and crimes against persons accounted for over 20 percent of all charges. Assault, burglary, theft, and disorderly conduct were the four leading types of charges prior to confinement as well as after release.

Significant differences were found, however, among certain types of charges. Exhibit 6-7 shows that out of all charges for which subjects were arrested, significantly more NGRI rearrests were for murder compared to the other two groups; however, in all three groups, the numbers were low. Nine rearrests (2.4 percent) in the NGRI group were for murder, and three each in the prison transfer group (.5 percent) and the control group (.6 percent) were for murder.

More of the prison transfers and control subjects were rearrested for robbery than the NGRI's. More NGRI rearrests were for minor drug violations (e.g. marijuana possession) than in either of the other two groups. Also, more NGRI's than prison transfers had rearrests for drunk driving (DWI). This increase in DWI arrests is consistent with the significant increase in the diagnosis of alcoholism in rehospitalizations seen in this group (see Exhibit 6-5).

There were no significant differences in the types of disposition subjects received for all arrest episodes, except more control subjects were in jail as a final disposition for an arrest compared to NGRI's (25.4 percent versus 11.3 percent). The most frequent dispositions for NGRI's

were dismissal (25.5 percent), probation (24.8 percent), and prison (23.4 percent). For the prison transfers, the most frequent dispositions were prison (32.3 percent) and dismissal (27.2 percent). For the control parolees, the most frequent dispositions were dismissal (28.7 percent), and prison (25.4 percent). For those dispositions involving prison sentences, there were no significant differences in the length of sentences imposed.

More NGRI patients were found NGRI again as a result of new charges, compared to the other two groups. Eight were found NGRI again, and an additional five were committed to a mental hospital as a result of rearrests. Two prison transfers were found NGRI and an additional six were committed to a mental hospital. None of the control group subjects were subsequently found NGRI, but three received dispositions of commitment to a mental hospital.

EXHIBIT 6-7
CHARGES WITHIN FIVE YEARS AFTER RELEASE

	NGRI Patients (N=127)		Prison Transfers (n=135)		Matched Control Group (n=127)	
All Post Charges						
Crimes Against Persons						
Murder	9	2.4%*	3	.5%*	3	.6%*
Assault/assault w/i to murder or rape	71	19.0	88	14.6	98	18.1
Rape	5	1.3	6	1.0	4	.7
Robbery	1	.3*	26	4.3*	21	3.9*
Kidnapping	2	.5	3	.5	1	.2
	88	(23.5)	126	(20.9)	127	(23.6)
Property Crimes						
Burglary/B&E/Att.burg.	25	6.7%	54	9.0%	24	4.5%
Theft/grand larceny	39	10.4	77	12.8	93	17.2
Bad check/forgery	5	1.3	4	.7	14	2.6
Vandalism/tampering	20	5.3	22	3.6	16	3.0
Other (arson, receiving stolen goods)	5	1.3	17	2.8	12	2.2
	94	(25.0)	174	(28.9)	159	(29.6)
Public Nuisance Crimes						
Disorderly conduct	41	11.0%	37	6.1%	49	9.1%
Vagrancy	0	-	6	1.0	2	.4
Trespassing	4	1.1	25	4.1	7	1.3
Other (harrassment, threats)	7	1.9	17	2.8	1	.2
	52	(14.0)	85	(14.0)	59	(11.0)
Suspicious Circumstances/ Violations						
Vio. of prob/parole	8	2.1%	30	5.0%	19	3.5%
Weapons charges	20	5.3	38	6.3	35	6.5
Escape	1	.3	9	1.5	3	.6
Resisting arrest	11	2.9	17	2.8	14	2.6
Failure to appear	5	1.3	21	3.5	16	3.0
Other (court order, contempt)	7	1.9	20	3.3	20	3.7
	52	(13.8)	135	(22.4)	107	(19.9)
Public Morals Crimes						
Drug violations (marijuana)	31	8.3%*	21	3.5%*	18	3.3%*
Drug violations (heroin, cocaine)	27	7.2	35	5.8	33	6.1
Perverted sex pract.	1	.3	8	1.3	11	2.0
Other (gambling, contributing)	10	2.7	1	.2	3	.6
	69	(18.5)	65	(10.8)	65	(12.0)
Other Crimes						
Unauthorized use of motor vehicle	3	.8%	12	2.0%	7	1.3%
DWI/DUI	14	3.7*	6	1.0*	13	2.4
Other	2	.6	0	-	2	.4
	19	(5.1)	18	(3.0)	22	(4.1)
TOTALS	374	100.0	603	100.0	539	100.0

EXHIBIT 6-7 (Cont)

	NGRI Patients (N=127)		Prison Transfers (n=135)		Matched Control Group (n=127)	
Disposition of all Arrests[1]						
Prison	33	23.4%	76	32.3%	53	25.4%
Dismissed/nolle pros	36	25.5	64	27.2	60	28.7
Probation	35	24.8	23	9.8	23	11.0
Jail and/or fine	16	11.3*	29	12.3	48	23.0*
Suspended sentence	0	-	4	1.7	1	.5
Committed to hospital	5	3.5	6	2.6	3	1.4
NGRI	8	5.7*	2	.8*	0	-
Parole/prob. revoked	0	-	16	6.8	7	3.3
Found not guilty	8	5.7	12	5.1	12	5.7
Returned to prison/ extradited	0	-	3	1.3	2	1.0
	---	-----	---	-----	---	-----
	141	100.0	235	100.0	209	100.0
Unknown	111		188		150	
Length of Prison Terms Imposed	(n=33)		(n=76)		(n=53)	
One year or less	6	26.1%	11	14.5%	20	37.7%
Two years	3	13.0	15	19.7	9	17.0
Three years	4	17.4	17	22.4	5	9.4
Four to five	4	17.4	11	14.5	2	3.8
Six to ten	2	8.7	9	11.8	11	20.8
Eleven to twenty	1	4.3	6	7.9	5	9.4
Twenty-one to thirty	1	4.3	2	2.6	0	-
Over thirty	2	8.7	5	6.6	1	1.9
	--	-----	--	-----	--	-----
	23	100.0	76	100.0	53	100.0
Missing data	10		0		0	
	$\bar{X}$ = 9.4		$\bar{X}$ = 6.9		$\bar{X}$ = 6.8	

[1]Disposition of all arrests is based on the number of arrest episodes. Generally, more than one offense was involved in each arrest episode.

Length of Time Until First Rearrest (For Entire Follow-up Period)

Exhibit 6-8 shows that prison transfers and control parolees were rearrested sooner after their release from prison than the NGRI patients were after their release from the hospital. Two-thirds of the prison transfers (66 percent) and 52.1 percent of the control group were rearrested within one year after release from prison, compared to 32.9 percent of the NGRI's. The average length of time until the first rearrest of a prison transfer was half that of the time until the first rearrest of an NGRI (1.3 years versus 2.6 years). The control group parolees averaged 2.2 years until their first rearrest. This data is based on the entire follow-up period, which, for the NGRI group, ranged from 7 to 17 years, with an average of 10.5 years; for the prison transfers, from 4 to 16 years, with an average of 7.9 years; and for the control group, from 7 to 16 years, with an average of 10.8 years.

The NGRI's also had a longer lapse of time until their first arrest for a violent crime, an average of 3.8 years, compared to an average of 2.3 years until the first arrest for a violent crime for prison transfers, and 2.7 years for the control group.

Exhibit 6-8 shows the severity rating of the most serious charge subjects were ever arrested for after release (not just within five years). The median severity rating between the three groups did not differ. Half of all the most serious rearrests were above category 3 (burglary) and half below. While more NGRI's were rearrested for murder or rape compared to the control group (significant at .06 level), this was not true when compared to the prison transfer group. There was also a difference in the number who were arrested for assault or assault with intent to murder or

rape between the three groups. Significantly more control parolees and prison transfers were arrested for charge in this category (40.2 percent and 30.5 percent respectively), compared to NGRI's (18.5 percent). In the next section, we will examine how these rearrests compare to the prior arrest history for the three groups.

EXHIBIT 6-8
LENGTH OF TIME UNTIL FIRST REARREST
FOR ENTIRE FOLLOW-UP PERIOD[1]

	NGRI Patients (n=82)		Prison Transfers (n=105)		Matched Control Group (n=94)	
Length of Time from Release Until First Rearrest						
1 to 6 months	15	18.3%]*	43	41.7%]*	28	29.8%]*
6 to 12 months	12	14.6]*	25	24.3]*	21	22.3]*
13 to 18 months	10	12.2	13	12.6	3	3.2
19 to 24 months	5	6.1	5	4.9	11	11.7
2 to 3 years	11	13.4	5	4.9	5	5.3
3 to 4 years	8	9.8	2	1.9	8	8.5
4 to 5 years	10	12.2	4	3.9	8	8.5
6 to 12 years	11	13.4	6	5.8	10	10.6
	82	100.0	103	100.0	94	100.0
Missing data	0		2		0	
	$\overline{X}$ = 2.6 yrs.*		$\overline{X}$ = 1.3 yrs.*		$\overline{X}$ = 2.2 yrs.	
	Median = 2.0 yrs.		Median = .75 yrs.		Median = .9 yrs.	
Length of Time Until Arrest for First Violent Offense						
1 to 6 months	2	5.0%]*	9	14.5%]*	8	14.0%]*
6 to 12 months	3	7.5]*	12	19.4]*	11	19.3]*
1 to 2 years	7	17.5	16	25.8	10	17.5
2 to 3 years	6	15.0	6	9.7	6	10.5
3 to 4 years	5	12.5	6	9.7	7	12.3
4 to 5 years	5	12.5	3	4.7	7	12.3
5 to 6 years	1	2.5	4	6.5	2	3.5
6 to 8 years	6	15.0	4	6.5	0	-
8 to 10 years	5	12.5	2	3.2	6	10.5
	40	100.0	62	100.0	57	100.0
	$\overline{X}$ = 3.8 yrs.		$\overline{X}$ = 2.3 yrs.		$\overline{X}$ = 2.7 yrs.	
	Median = 3.2 yrs.		Median = 1.4 yrs.		Median = 1.9 yrs.	
Severity Rating of Most Serious Charge at Any Time Since Release						
1 (Murder, rape)	12	14.8%+	9	8.6%	6	6.5%+
2 (Arson, assault w/i to murder or rape)	15	18.5*	32	30.5*	37	40.2*
3 (Burglary, attempt robbery)	16	19.8	26	24.8	9	9.9
4 (Simple assault, theft)	23	28.4	23	21.9	29	31.5
5 (Pandering)	3	3.7	4	3.8	5	5.4
6 (Shoplifting)	12	14.8	11	10.5	6	6.5
	81	100.0	105	100.0	92	100.0
Missing data	1		0		2	
	$\overline{X}$ = 3.3		$\overline{X}$ = 3.1		$\overline{X}$ = 3.1	
	Median = 3.0		Median = 3.0		Median = 3.0	

+ = Significant at .06

[1]For all arrests during follow-up period, not just within five years.

Analysis of Outcome

Comparison of Pre and Post Instant Offense Behavior

For all three groups, subjects' behavior prior to hospitalization or incarceration for the instant offense was compared to their behavior after release. Three outcome indicators were available for before/after measurement: arrest/rearrest data, hospitalization/rehospitalization data, and employment/post employment data.

To standardize comparisons, averages were normalized to rates per year. Exhibit 6-9 shows the average number of street years prior to the instant offense (Pre) and during the entire follow-up period after release from hospital or prison ($Post_2$). It should be noted that street years was defined as available time but may not reflect actual "free" time since the actual length of prior incarcerations was not known for all subjects. The average number of pre and post street years for the NGRI and control group was quite similar: 13 years pre and over ten years post. The prison transfers had an average of 11 years pre and eight years post.

In the following discussion, significant changes in the pre and post behavior <u>within</u> each group are presented. In some tables, data within five years after release ($Post_1$) is also given. Occasionally, differences in the behavior <u>between</u> the three groups, which were presented earlier in this chapter, are reviewed.

EXHIBIT 6-9
AVERAGE STREET YEARS PRE AND POST

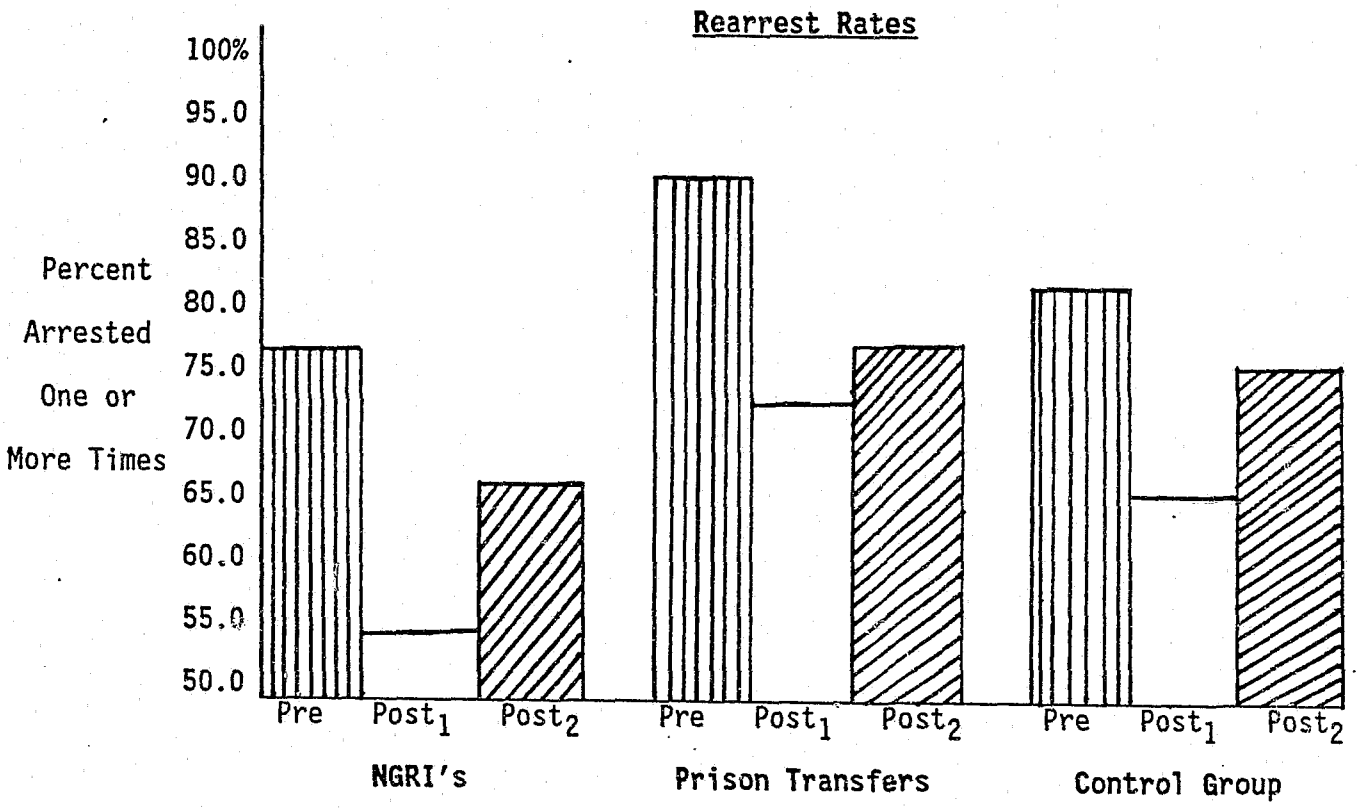
	NGRI's	Prison Transfers	Control Group
x Number Pre Street Years	13.2	10.7	13.0
x Number Post Street Years During Entire Follow-Up Period ($Post_2$)	10.5	7.9	10.8

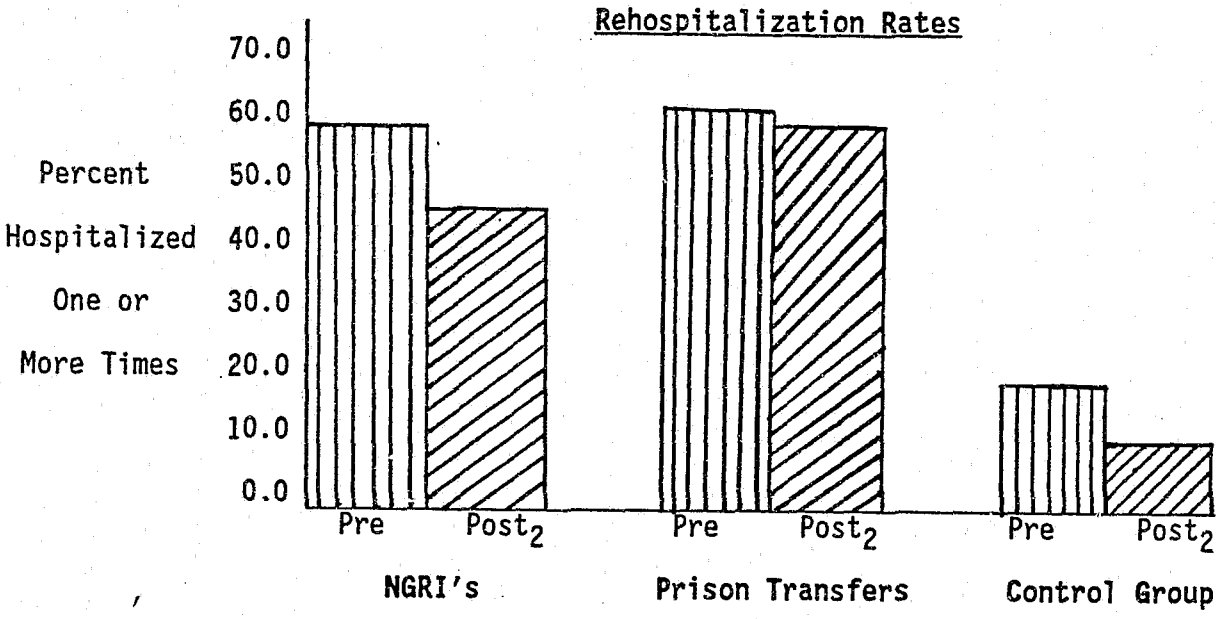
Arrests

Exhibit 6-10 shows that all three groups had significantly fewer arrests during the five year follow-up period compared to the time period prior to their instant offense. However, this reduction grew weaker during the course of the entire follow-up period. Seventy-six percent of the NGRI patients had been arrested prior to the instant offense and this dropped to 54.3 percent rearrested within five years after release (which is a significant reduction at the .01 confidence level). The proportion of NGRI patients who were rearrested grew to 65.8 percent during the course of the entire follow-up period (still a significant reduction at the .05 confidence level). In the prison transfer group, 90.4 percent had been arrested prior to the instant offense; their rearrest rate dropped significantly to 73.3 percent within five years after release (significant at the .01 level), but rose to 78.4 percent during the entire post release period (significant at the .05 level). In the control group, where 83.3 percent had prior arrests, a significant (.01) reduction to 65.4 percent was seen after five years. This significant reduction disappeared entirely during the remainder of the follow-up period, as rearrests increased to 75.4 percent.

In order to make comparisons between the before and after time periods, the number of arrests and charges pre and post (during the entire follow-up) were normalized to average numbers per year. Exhibit 6-11 shows that the prison transfers had the highest average number of arrests pre and post, followed by the control group then the NGRI group. When the rates were normalized, none of the three groups showed very significant changes in the average number of arrests, though all did show a small reduction.

EXHIBIT 6-10
PRE AND POST REARREST AND REHOSPITALIZATION





Pre = Prior to instant offense
$Post_1$ = Within 5 years after release
$Post_2$ = During entire follow-up

The average number of charges however, show that as a group, both the prison transfers and the controls were charged with slightly more offenses during the follow-up period, compared to the time period prior to the instant offense. Only the NGRI group showed a reduction in the average number of charges per year.

EXHIBIT 6-11
AVERAGE NUMBER OF ARRESTS, OFFENSES, AND HOSPITALIZATIONS PER YEAR[1]

	NGRI's	Prison Transfers	Control Group
x Number Arrests-Pre	.28	.50	.35
x Number Arrests-$Post_2$	.22	.46	.31
x Number of Charges-Pre	.32	.51	.38
x Number of Charges-$Post_2$	.28	.56	.39
x Number of Hospitalizations-Pre	.14	.18	.03
x Number of Hospitalizations-$Post_2$	.13	.25	.02

[1]All averages have been normalized to yearly rates and therefore differ from averages presented in earlier exhibits.

Additional before/after arrest information, presented in Exhibit 6-12, shows that all three groups exhibited a significant reduction of the number who were incarcerated. In the NGRI group, 33.3 percent had been incarcerated prior to the instant offense, compared to 13.4 percent incarcerated during the entire follow-up period. In the prison transfer group, 67.4 percent had been incarcerated previously, compared to 46.7 percent incarcerated during the follow-up period. In the control group, 57.5 percent had been incarcerated previously, compared to 40.2 percent during the follow-up period. Exhibit 6-12 also shows that there was no significant change in the proportion who were arrested for murder or rape in any group.

EXHIBIT 6-12
SUMMARY OF SUBJECTS' PRE INSTANT OFFENSE AND POST DISCHARGE BEHAVIOR[1]

	NGRI Patients (N=127)	Prison Transfers (n=135)	Matched Control Group (n=127)
Arrests			
Arrested 1 or More Times			
Pre	76.0%	90.4%	83.3%
$Post_1$ (Within 5 years)	54.3**	73.3**	65.4**
$Post_2$ (Entire followup)	65.8*	78.4*	75.4
Arrested for Murder or Rape			
Pre	9.4%	5.9%	7.9%
$Post_2$	9.4	6.7	4.7
Average Number of Arrests			
Pre	3.7	5.3	4.6
$Post_1$	1.3	2.6	2.1
$Post_2$	2.3	3.6	3.4
Incarcerated 1 or More Times			
Pre	33.3%	67.4%	57.5%
$Post_1$	11.8*	40.0**	35.4**
$Post_2$	13.4*	46.7**	40.2**
Hospitalizations			
Hospitalized 1 or More Times			
Pre	59.1%	60.7%	18.1%
$Post_2$	45.7**	59.3	8.7
Hospitalized Over 9 Months			
Pre	22.0%	21.5%	2.4%
$Post_2$	13.4	18.5	.8
Average Number of Hospitalizations			
Pre	1.9	1.9	.4
$Post_2$	1.4	2.0	.2
Employment			
Employed Continually Full or Part-Time			
Pre	41.8%	25.6%	41.0%
$Post_1$	45.1	19.4	62.1*
Self-Supporting (Soley or with Spouse)			
Pre	45.4%	35.4%	61.4%
$Post_1$	36.9	25.6	60.2

[1]Statistical differences were calculated between pre and post percentages within each group. Post percentages significantly larger than the pre percentages are noted by * if $p \leq .05$ and ** if $p \leq .01$.

Pre = Prior or instant offense
$Post_1$ = Within 5 years after release
$Post_2$ = During entire follow-up

A decrease in rearrests during the follow-up period can most likely be explained by the aging of the three cohorts. All three groups showed similar percentage changes in the number of arrests before versus after:

- NGRI's had a 13.4 percent reduction in the number of arrests;
- Prison transfers had a 13.3 percent reduction in the number of arrests; and
- Controls had a 9.5 percent reduction in the number of arrests.

Since similar decreases were experienced by all three groups, it is not possible to attribute the change to any one particular variable that was peculiar to only one group. Other research has shown (cf Greenfeld, 1985) that age alone can lead to significant reductions in crime patterns over time. The higher five year rearrest rate in the prison transfer group may be due to the fact that they were an average of nearly four years younger than the other two groups.

Hospitalization

Exhibit 6-10, pre and post rehospitalization data, shows there was a significant decrease in the proportion of the NGRI patients who were hospitalized during the follow-up period compared to prior to the instant offense. Prior to the instant offense, 59.1 percent of the insanity patients had been hospitalized, and after release, 45.7 percent were rehospitalized. There was no similar change for the prison transfer patients; 60 percent were hospitalized before as well as after. In the control group, no significant differences were found in the before versus after rate: 18.1 percent had prior hospitalizations compared to 8.7 percent who had after hospitalizations.

When the rates of hospitalization were normalized by year, (Exhibit 6-11), little difference was found in the average number of hospitalizations experienced before versus after in any group. For that matter, the prison transfers actually had a higher average number of post hospitalizations than pre hospitalizations (.25 versus .18). This is because those of the prison transfers who were hospitalized after release had repeat hospitalizations than those who were hospitalized during the before time period.

Employment

Before/after date shows that neither NGRI patients nor prison transfers showed any change in their employment rate but the control group showed significantly improved employment rates after release. Exhibit 6-12 shows that prior to prison, 41 percent of the control group had been employed; this increased to 62.1 percent during parole. Also, the proportion of control parolees who were employed after release is significantly higher than the other two groups.

In addition, significantly more men in the control group (60.2 percent) were either supporting themselves (solely or with assistance from spouses) after release, compared to NGRI's (36.9 percent) or prison transfers (25.6 percent). In the NGRI group, a significant increase was seen earlier in this chapter, (Exhibit 6-2) in the proportion who were supporting themselves with a mixture of public assistance and some work after release compared to prior to the instant offense.

Comparison of Pre and Post Functioning on Clinical Variables

Several clinical variables were used to compare subjects' pre and post behavior. These included Global Assessment Scale scores, ratings for overall functioning, and the proportion who were diagnosed as schizophrenic, alcoholic, or drug dependent during prior and post hospitalizations.

Exhibit 6-13 shows that during the year prior to admission for the NGRI patients, the average GAS score was 38.9 (exhibiting major impairment in functioning), compared to 41.1 for the prison transfers. At the time of admission, both groups had significant declines in their average GAS scores, to just under 30 (unable to function in almost all areas). At the time of discharge, the NGRI patients had significantly raised their GAS score to an average of 55 and maintained this average during the conditional release period. While the discharge scores achieved for the prison transfers were significantly higher than at admission, they were not as high as those for the NGRI group, nor did they maintain these GAS scores during the parole period.

Overall functioning rating scales showed that the NGRI group experienced a significant improvement in their level of functioning from the before to after time period. Prior to admission, 18.8 percent had been rated as functioning good or very good (a combination of functioning as a wage earner, parent, and spouse), while during conditional release, 49.6 percent was rated as functioning well.

Regarding diagnoses, prior to the instant offense, significantly more insanity acquittees were diagnosed schizophrenic during previous mental hospitalizations compared to the percentage diagnosed schizophrenic after release. In the prison transfer group, there was no difference in the

proportion with a schizophrenic diagnosis at either time period. Also, there were changes in the proportions who were rehospitalized in the NGRI group or prison transfer group for alcohol addiction or drug dependence, while, in the control group, significantly more of those who were hospitalized after release were hospitalized for alcohol addiction.

EXHIBIT 6-13
COMPARISON OF NGRI AND PRISON TRANSFERS
CLINICAL PRE AND POST FUNCTIONING

	NGRI Patients (N=127)	Prison Transfers (n=135)	Matched Control Group (n=127)
Average Global Assessment Scale Score			
Pre	38.9	41.1	NA
At admission	29.1**	27.4**	
At discharge	54.9**	49.4**	
$Post_1$	53.1	44.2**	
Overall Functioning Rating (% Good/Very Good)			
Pre	18.8%	17.7%	NA
$Post_1$	49.6*	18.4	
Percent Schizophrenic			
Pre	40.9%	23.7%	NA
$Post_2$	22.0*	33.3	
Alcohol Addiction Problems			
Pre	13.9%	13.5%	33.3%
$Post_2$	16.3	13.2	50.0**
Drug Addiction Problems			
Pre	9.3%	11.5%	33.3%
$Post_2$	4.1	8.8	30.0

* = $p < .05$
** = $p < .0$

All statistical differences were calculated between pre and post percentage within each group.

Relationships Between Independent Variables and Outcome

Correlation coefficients were tabulated between the independent variables and eight primary outcome indicators. Those independent variables that were found to have significant correlation coefficients were then recoded into nominal categories and chi square tests run between selected independent variables and outcome indicators. The independent variables were divided into those that dealt with characteristics, background, functioning prior to the instant offense, prior arrests and hospitalization, and clinical data (for NGRI and prison transfer groups only).

This section presents the relationships between independent variables and outcome indicators that have been found to be significant in at least one of the three groups. Summary tables of all significant relationships for each group are presented at the end of each section.

Socio-Demographic Characteristics and Outcome

Exhibit 6-14 presents significant chi square scores and their significance level for those socio-demographic characteristics that were associated with outcome. The exhibit shows that few characteristics were associated with outcome in the NGRI group, while age and race were associated with rearrests in the two prison groups.

In the NGRI group, age at release was associated only with employment: significantly more patients over 35 were employed (61.4 percent) compared to those 25-35 (41.3 percent) and those under 25 (28.1 percent). In the prison transfer group and control group, age was associated with being rearrested within five years after release: significantly more of those prison transfers rearrested were under 25 (30.3 percent) compared to

EXHIBIT 6-14
RELATIONSHIPS BETWEEN SOCIO-DEMOGRAPHIC CHARACTERISTICS AND OUTCOME

	Age at Release			Race			Marital Status		
Outcome Variables	NGRI	Transfers	Controls	NGRI	Transfers	Controls	NGRI	Transfers	Controls
Rearrests w/in 5 years	NS	5.4+	7.6*	NS	4.7*	4.5*	NS	NS	NS
Rearrests During Entire Follow-up	NS	NS	13.9***	NS	NS	3.1+	NS	NS	NS
Severity of Rearrests	NS	NS	7.2*	NS	NS	NS	NS	NS	NS
Rehospitalization	NS	NS	NS	NS	NS	8.0**	NS	NS	NS
Employment	8.7**	NS	NS	NS	NS	NS	NS	3.4+	NS
Global Assessment Scale Scores	NS	NS	NA	NS	NS	NA	NS	NS	NA
Overall Functioning	NS	NS	NS	NS	NS	NS	NS	NS	NS
Compliance with Release Rules	NS	NS	7.9**	NS	NS	NS	NS	NS	NS

+ $p \leq .10$ * $p \leq .05$ ** $p \leq .01$ *** $p \leq .001$
NA = Not available
NS = Not significant

Statistics are chi square scores

those not rearrested (11.1 percent). In the control group, significantly more of those under 25 (75.5 percent) and more of those 26 to 35 were rearrested (72.3 percent), compared to those over 35 (50 percent).

Race was not associated with any of the outcome indicators for the NGRI group. However, in the prison transfer group and the control group, race was associated with rearrests after release: significantly more minority group members were rearrested compared to whites. In the prison transfer group, 77.6 percent of minority patients were rearrested within five years after release compared to 57.1 percent of whites. In the control group, 73 percent of minority subjects were rearrested within five years, compared to 54.7 percent of whites. This higher rearrest rate of minorities extended throughout the entire follow-up period: 81.1 percent of minorities were rearrested during the entire follow-up compared to 67.3 percent of whites. In the control group, race was also associated with rehospitalization: significantly more whites (17.0 percent) than minorities were rehospitalized (2.7 percent).

Marital status was not associated with any outcome variables in either the NGRI group or the control group. In the prison transfer group, however, significantly more of those who were married were employed (50 percent) compared to those who were single (16.3 percent).

Background Variables and Outcome

Juvenile Delinquency. In all three groups, being arrested as a juvenile was associated with being arrested as an adult. Exhibit 6-15 shows that in the NGRI group, significantly more of those arrested as a juvenile were rearrested within five years after release (65.2 percent) and during the entire follow-up (76.7 percent) compared to those with no juvenile arrests (48.1 percent and 61.3 percent). Similarly, in the prison transfer group, significantly more of those arrested as a juvenile were rearrested within five years (82.2 percent) and during the entire follow-up period (84.9 percent) compared to those with no juvenile arrests (62.9 percent and 70.5 percent). In the control group, juvenile delinquency arrests were not associated with rearrests within the first five years after release, but were associated with rearrests during the entire follow-up. Significantly more of those control subjects arrested as a juvenile were rearrested as an adult (88.9 percent), compared to those with no juvenile arrests (70 percent).

Juvenile delinquency was also associated with unemployment in both the NGRI group and the control group: significantly more NGRI's (67.4 percent) and controls (55.9 percent) who were delinquent were unemployed after release compared to those who were not delinquent (48.1 percent and 30.5 percent).

Absence of delinquent activity in the control group was also associated with satisfactory functioning after release: 69.7 percent of those not arrested as juveniles were functioning well compared to 45.2 percent of those with juvenile records. In the prison transfer group, more of those

EXHIBIT 6-15
RELATIONSHIPS BETWEEN BACKGROUND VARIABLES AND OUTCOME

	Arrests as Juvenile			Abused in Childhood			Traumatic Event in Childhood			Adjustment in School		
Outcome Variables	NGRI	Transfers	Controls	NGRI	Transfers	Controls	NGRI	Transfers	Controls	NGRI	Transfers	Controls
Rearrests w/in 5 years	3.4+	6.4**	NS	NS	NS	NA	NS	5.5**	NS	NS	NS	4.4*
Rearrests During Entire Follow-up	3.0+	4.1*	4.9*	NS	NS	NA	NS	7.6**	NS	NS	NS	10.4**
Severity of Rearrests	NS	NS	NS	NS	NS	NA	NS	NS	4.2*	NS	NS	NS
Rehospitalization	NS	NS	NS	NS	NS	NA	NS	NS	NS	NS	NS	NS
Employment	4.2*	NS	6.6**	5.6**	NS	NA	NS	NS	NS	NS	NS	NS
Global Assessment Scale Scores	NS	NS	NA	NS	NS	NA	NS	3.1+	NA	NS	NS	NA
Overall Functioning	NS	NS	3.9*	NS	NS	NA	NS	NS	NS	NS	NS	NS
Compliance with Release Rules	NS	3.4+	NS	2.8+	NS	NA	NS	NS	NS	NS	NS	NS

+ $p \leq .10$ * $p \leq .05$ ** $p \leq .01$ *** $p \leq .001$
NA = Not available
NS = Not significant

Statistics are chi square scores

without juvenile arrests complied with the rules for aftercare (77.5 percent) compared to those who had been delinquent (58.7 percent).

Childhood. Despite the attention child abuse as a precursor to violence has received in the recent past, abuse was not found to be associated with post arrests, rehospitalization, or functioning in any of the groups. It was only associated with outcome in the NGRI group, and only on two indicators, employment and compliance with the release rules. Regarding employment, significantly more of those who were abused were unemployed after release (76 percent) compared to those who were not abused (49.5 percent). Regarding compliance with the release rules, significantly more of those who were abused did not comply with these rules (30.8 percent) compared to those who were not abused (16.2 percent). It should be pointed out, as mentioned in Chapter 3, that the incidence of abuse reported in case records is thought to be an underestimate of actual physical and sexual abuse.

Experiencing traumatic events as a child (such as the death of a parent) was associated with outcome for the prison transfer group more often than for either of the other two groups. Trauma as a child was strongly associated with rearrests in this group, both within five years and during the entire follow-up. Significantly more of those who experienced trauma were rearrested within five years (90 percent) and during the entire follow-up (96.7 percent) compared to those who did not experience trauma (68.6 percent and 73.1 percent). In addition, significantly more of those who experienced traumatic events as a child were arrested for more serious crimes after release compared to those without trauma (78 percent versus 48.7 percent). Also, in the prison transfer group, trauma as a

child was associated with lower GAS scores after release: significantly more of those with trauma had GAS scores under 50 (86.7 percent) compared to those without trauma (62.5 percent).

Adjustment in school as a child and adolescent was not associated with outcome at all for the NGRI group and prison transfer group. However, it was strongly associated with rearrests for the control group. Significantly more of those with poor school adjustments were rearrested within five years (75.9 percent) versus those with good school adjustments (50 percent), and during the entire follow-up period was well (89.5 percent versus 55.6 percent).

Functioning Prior to Instant Offense and Outcome

Employment. In all three groups, the employment history pattern three to five years prior to the instant offense was the variable most frequently association with successful outcome. A historical pattern of employment (either full-time or part time) was associated with lower rearrests, better Global Assessment Scale scores after release, higher overall functioning after release, and continued employment after release. Exhibit 6-16 shows that in all three groups, significantly more of those who had been unemployed prior to the instant offense were rearrested within five years after release. The proportion of subjects who were unemployed and rearrested compared to those who were employed and rearrested in each group were: NGRI's-66.2 percent versus 39.2 percent; prison transfers-77.5 percent versus 53.6 percent; and controls-78.3 percent versus 53.1 percent. This same pattern continued throughout the entire follow-up period for the NGRI group and the control group, but not for the prison transfer group. However, the types of offenses committed by unemployed subjects were less serious than those committed by those who were employed: significantly more of the unemployed NGRI's and prison transfers committed less serious offenses than those who were employed.

In all three groups, a prior pattern of steady employment was significantly associated with continued employment during follow-up. In the NGRI group, 58.8 percent of those employed continuously previously were employed continuously after release compared to 34.3 percent of those unemployed previously; in the prison transfer group, the corresponding figures were 36.8 percent and 14.0 percent; and in the control group, 71.0 percent and 31.7 percent.

EXHIBIT 6-16
RELATIONSHIPS BETWEEN FUNCTIONING PRIOR TO INSTANT OFFENSE AND OUTCOME

	Alcoholism			Drug Dependence			Employment Pattern			GAS Score		
Outcome Variables	NGRI	Transfers	Controls	NGRI	Transfers	Controls	NGRI	Transfers	Controls	NGRI	Transfers	Controls
Rearrests w/in 5 years	3.5+	2.9+	NS	5.4*	NS	NS	8.7**	5.8**	5.4**	NS	NS	NA
Rearrests During Entire Follow-up	6.0**	NS	NS	NS	NS	NS	7.1**	NS	4.8*	NS	NS	NA
Severity of Rearrests	NS	11.6***	7.7**	NS	NS	NS	9.7**	2.6+	NS	NS	NS	NA
Rehospitalization	NS	NS	NS	NS	NS	NS	NS	NS	2.9+	3.4+	3.6*	NA
Employment	NS	NS	7.0**	NS	NS	3.5+	7.0**	4.7*	10.9**	NS	3.0+	NA
Global Assessment Scale Scores	NS	NS	NA	NS	NS	NA	11.4***	2.7+	NA	NS	8.3**	NA
Overall Functioning	NS	NS	NS	3.2+	NS	NS	11.5***	NS	5.6**	2.9+	NS	NA
Compliance with Release Rules	NS	NS	NS	NS	3.2+	NS	NS	NS	3.1+	NS	9.8***	NA

+ $p \leq .10$ * $p \leq .05$ ** $p \leq .01$ *** $p \leq .001$
NA = Not available
NS = Not significant

Statistics are chi square scores

For the insanity acquittees and the prison transfers, employment prior to the instant offense was also related to better GAS scores after release. For the control group, previous continuous employment was associated with significantly more compliance with the release rules and less hospitalization. For the NGRI's and prison transfers, prior employment was not associated with rehospitalization after release.

Alcoholism and Drug Dependence. Chronic alcoholism problems were associated with significantly more rearrests after release in the NGRI group and the prison transfer group, but not in the control group. Significantly more NGRI's who were chronic alcoholics were rearrested within five years (64.2 percent) compared to non-alcoholics (47.3 percent). This association was also true during the entire follow-up period: alcoholics were rearrested significantly more during the entire follow-up period (78.8 percent) compared to non-alcoholics (57.7 percent). In contrast, in the prison transfer group, the relationship between alcoholism and rearrest was reversed. Significantly more non-alcoholics were rearrested within five years (78.8 percent) compared to alcoholics (65.5 percent). This trend was not seen during the entire follow-up for prison transfers, but was reflected in the severity of the rearrests. Significantly more alcoholics were arrested for less severe crimes (82.1 percent) compared to non-alcoholics (48.5 percent). This association was also found for the control group: significantly more alcoholics were rearrested for less severe crimes than non-alcoholics (78.3 percent and 44.9 percent). Also, in the control group, significantly more alcoholics were unemployed (58.6 percent) compared to non-alcoholics (31 percent).

Drug dependence (heroin addiction) was associated with several different outcome indicators in each group. In the NGRI group, significantly more heroin addicts were rearrested within five years (84.6 percent) compared to non-addicts (50.9 percent). Also, significantly fewer addicts were reported to be functioning well during the release period (25 percent) compared to non-addicts (52.3 percent). In the prison transfer group, significantly more non-addicts were in compliance with the rules of release (72.1 percent) compared to addicts (50 percent). In the control group, more heroin addicts were unemployed (35 percent) than non-addicts (61.5 percent).

Global Assessment Scale Scores. In both patient groups, GAS scores during the year prior to admission to hospital or prison were associated with outcome after release on all indicators except rearrests. In both groups, significantly more of those with prior low GAS scores (under 30) were readmitted to mental hospitals after release (62.5 percent of NGRI's and 90 percent of prison transfers). In the prison transfer group, more of those with low GAS scores were also unemployed (100 percent), did not comply with the release plan (18.2 percent), and had low GAS scores during parole (48 percent). In the NGRI group, those with higher prior GAS scores performed significantly better in overall functioning during release compared to those with lower prior GAS scores (53.4 percent and 35.5 percent).

Relationship Between Prior Arrests and Prior Hospitalizations and Outcome

Prior Hospitalization. In all three groups, prior hospitalization was strongly associated with hospitalization and unemployment after release. Significantly more of those previously hospitalized were hospitalized after release compared to those not previously hospitalized: 58.7 percent versus 30.8 percent in the NGRI group, 69.5 percent versus 43.6 prevent in the prison transfer group, and 21.7 percent versus 5.8 percent in the control group. Significantly more of those hospitalized prior to admission were unemployed after release compared to those not previously hospitalized: 64.8 percent versus 44.2 percent in the NGRI group, 86.8 percent versus 71.4 percent in the prison transfer group, and 54.5 percent versus 34 percent in the control group. In addition, in the NGRI and prison transfer groups, prior hospitalization was associated with less severe criminal histories and lower GAS scores after release. In the NGRI group and the control group, prior hospitalization was also associated with lower overall functioning after release.

Prior Arrests and Criminal History. A prior arrest record was associated with rearrests within five years after release in the prison transfer group and control group, this association disappeared during the entire follow-up in the NGRI group, however, the pattern was reversed: there was no association within five years but a strong association during the entire follow-up. Three-quarters of the prison transfers with prior arrest records and 68.9 percent of the controls with prior arrest records were rearrested within five years after release, compared to 53.8 percent and 47.6 percent, respectively, without prior arrests. Nearly three-quarters (72 percent) of NGRI patients with prior arrests were arrested

EXHIBIT 6-17
RELATIONSHIPS BETWEEN PRIOR ARRESTS AND HOSPITALIZATION VARIABLES AND OUTCOME

	Prior Arrests			Prior Severity Rating			Instant Offense			Prior Hospitalization		
Outcome Variables	NGRI	Transfers	Controls	NGRI	Transfers	Controls	NGRI	Transfers	Controls	NGRI	Transfers	Controls
Rearrests w/in 5 years	NS	2.8+	3.5+	12.0**	NS	NS	3.5*	9.7***	NS	3.6*	NS	NS
Rearrests During Entire Follow-up	4.9*	NS	NS	12.8***	NS	NS	5.6+	5.7**	NS	NS	NS	NS
Severity of Rearrests	NS	NS	NS	16.3**	2.9+	NS	NS	NS	NS	5.4+	7.8**	NS
Rehospitalization	NS	NS	NS	NS	NS	NS	7.4**	NS	NS	9.6**	6.7**	6.1**
Employment	NS	NS	2.7+	NS	NS	NS	4.9*	NS	6.2**	6.7**	3.2+	3.2+
Global Assessment Scale Scores	NS	NS	NA	NS	NS	NA	9.9***	NS	NS	9.6***	5.9**	NA
Overall Functioning	NS	NS	2.8+	NS	NS	2.8+	9.6**	NS	3.4+	7.1**	NS	3.6*
Compliance with Release Rules	NS	NS	4.5*	NS	NS	NS	8.7**	NS	NS	NS	NS	NS

+ $p < .10$ * $p < .05$ ** $p < .01$ *** $p < .001$
NA = Not available
NS = Not significant

All chi squares are reported if $p < .10$

during the entire follow-up period compared to 50 percent of NGRI's without prior arrests.

While prior arrests were associated with no other outcome variables in the NGRI or prison transfer group, they were associated (though not strongly) with unemployment, poorer overall functioning, and poorer compliance with release requirements in the control group.

In the NGRI group, the preseverity rating was associated with post severity, rearrests within five years, and the total number of rearrests during the entire follow-up. Nearly all (91.2 percent) of those who had been arrested for prior offenses in severity categories 1 or 2 (murder, rape, arson, assault) were rearrested during the entire follow-up, compared to 58.2 percent of those with prior arrests in less serious categories. Significantly more of those NGRI's who had prior arrests for the most severe crimes were rearrested for equally severe crimes: 61.8 percent of those with the most serious arrest histories had rearrests in the same categories compared to 38.2 percent with less severe prior arrests rearrested for the most severe categories.

Instant Offense. For analysis purposes, the instant offense charges were categorized into crimes against persons and property offenses. In all groups, significant differences were found on many outcome variables. All differences were in the direction of property offenders having poorer outcomes than violent offenders. Exhibit 6-18 provides an in-depth table of differences between violent and property offenders in all three groups. The table shows that though violent offenders in the NGRI group were treated at Perkins Hospital longer than property offenders, they had better GAS scores at discharge, fewer post hospitalizations, fewer post convic-

EXHIBIT 6-18
COMPARISON OF VIOLENT AND PROPERTY OFFENDERS

	NGRI Patients (N=127)		Prison Transfers (n=135)		Matched Control Group (n=127)	
	Violent	Property	Violent	Property	Violent	Property
$\bar{X}$ Age at Admission	32.2**	27.0	27.8	30.4	31.8*	26.2
$\bar{X}$ Length of Time in Hospital or Prison	825.2*	569.4			196.1**	105.7
$\bar{X}$ Age at Release	34.3**	28.4	33.1	31.1	33.9**	28.2
$\bar{X}$ No. Prior Hospital.	1.7	2.7	1.5**	2.5	1.0	1.9
$\bar{X}$ No. of Arrests as Juv.	.6	1.0	1.5	1.6	.9	1.9
$\bar{X}$ GAS score prior to Admission	40.2*	34.0	42.7	39.6	NA	NA
$\bar{X}$ GAS score at Admission	29.7	26.8	28.9*	24.0	NA	NA
$\bar{X}$ No. of Times in Seclusion	.81*	1.8	1.7	1.8	NA	NA
$\bar{X}$ GAS Score at Discharge	55.6*	51.8	10.3	11.9	NA	NA
$\bar{X}$ No. of Prior Arrests	3.8	3.5	4.2***	7.5	4.5	5.1
$\bar{X}$ No. of Part I Convictions	.95	.70	.98***	1.7	1.1	1.0
$\bar{X}$ No. of Prior Incarcerations	.77	.59	1.4***	2.5	1.7	1.4
$\bar{X}$ No. of Post Hospital.	.89***	2.5	1.6	2.2	.15	.45
$\bar{X}$ No. of Post Arrests w/in 5 years	1.1*	2.1	2.3*	3.4	2.2	1.9
$\bar{X}$ No. Post Part I Convictions	.08*	.26	.23**	.56	.27	.5
$\bar{X}$ Number of Post Incarcerations	.12	.26	.48**	.88	.9	.8
$\bar{X}$ GAS Score During Release	55.5***	43.9	43.5	46.5	NA	NA
$\bar{X}$ Number of Arrests During Entire Follow-Up Period (7 - 17 yrs)	2.0*	3.5	2.9**	5.0	3.5	3.5
$\bar{X}$ Severity of Post Arrest	2.0	1.9	3.2	3.0	3.2*	2.4
Length of Time on Parole	NA	NA	987.8**	618.8	985.6*	629.8

*$p \leq .05$ **$p \leq .01$ ***$p \leq .001$

tions for a Part I offense, and fewer arrests during the entire follow-up period. Many of these associations also appear for the prison transfer group, but not for the control group. It appears then, that the mentally disordered property offenders, whether NGRI's or prison transfers, as seen earlier in this section, have worse outcomes than violent offenders.

Clinical Variables and Outcome

Seclusion. For the NGRI group, the use of seclusion during hospitalization at Perkins was the best predictor of seven out of eight outcome indicators (all but number of rearrests after release). Exhibit 6-19 shows that, when the NGRI patients were divided into those who were secluded during their hospitalization and those who weren't, significantly more of those who were secluded were unemployed after release, were readmitted to mental hospitals, were arrested for more severe offenses after release (murder, rape, arson, assault), had lower post GAS scores, complied less with their release requirements, and did more poorly in overall functioning. For example, 75.6 percent of those who had been secluded were unemployed after release, compared to 43 percent of those not secluded; and 63.3 percent of those secluded were readmitted to mental hospitals, compared to 37.2 percent of those not secluded. It is interesting to note that use of seclusion in the prison transfer group was not associated with any outcome indicators.

Hospital Adjustment and Hospital Assessment. Hospital adjustment was rated by the researchers as a composite of a patient's programmatic success or failure and frequency of infractions. Strong associations were found between the degree to which patients adjusted to their hospital stay and nearly all outcome indicators. In the NGRI group, significantly more of those with poor hospital adjustments were rearrested within five years after release (82.8 percent) compared to those with good adjustments (46.3 percent); more with poor adjustments were rehospitalized (82.1 percent versus 57 percent); more were unemployed (84 percent versus 47.9 percent); more had lower GAS scores after release (72 percent versus 33.3 percent);

EXHIBIT 6-19
RELATIONSHIPS BETWEEN CLINICAL VARIABLES AND OUTCOME

	Hospital Seclusion		Hospital Adjustment		Hospital Assessment		Medical Compliance After Release	
Outcome Variables	NGRI	Transfers	NGRI	Transfers	NGRI	Transfers	NGRI	Transfers
Rearrests w/in 5 years	NS	NS	16.1***	5.1*	5.3*	NS	NS	NS
Rearrests During Entire Follow-up	NS	NS	10.2**	4.0*	NS	NS	NS	NS
Severity of Rearrests	3.1+	NS	12.7**	NS	NS	NS	NS	NS
Rehospitalization	8.2**	NS	7.1*	3.3	NS	NS	18.8***	NS
Employment	12.3**	NS	15.6***	NS	9.0**	3.2+	10.9***	(1)+
Global Assessment Scale Scores	4.2*	NS	13.5***	NS	5.0*	NS	25.9***	NS
Overall Functioning	4.7+	NS	15.7***	5.9**	8.1**	3.7*	22.0***	NS
Compliance with Release Rules	3.5+	NS	22.9***	NS	7.9**	NS	19.3***	NS

+ $p < .10$ * $p < .05$ ** $p < .01$ *** $p < .001$
NA = Not available
NS = Not significant
(1) = Fisher's Exact Test

All chi squares are reported if $p < .10$

more had worse overall functioning after release (84 percent versus 42 percent); and more complied inadequately with the requirements of release (10.5 percent versus 51.9 percent). Similar associations were found between hospital adjustment and outcome measures in the prison transfer group, except poor adjustment was not associated with unemployment, lower GAS scores or compliance with the requirements of release.

Hospital assessment (a rating of patient's improvement at discharge as a result of his treatment) was found to be similarly associated with outcome for the NGRI patients in much the same way as hospital adjustment, but less so for the prison transfers. NGRI patients assessed as not improved were rearrested more within five years after release (62.2 percent) compared to those rated as improved (40.5 percent); more of those not improved were rehospitalized (53.7 percent) compared to those who improved (38.1 percent); fewer of those not improved were employed after release (34.6 percent versus 63.1 percent); and fewer of those rated as not improved had high GAS scores after release (51.9 percent) compared to those rated as improved (73.2 percent). In the prison transfer group, significantly more of those rated as improved versus not improved were employed (34.8 percent versus 14 percent). Also, more of those rated as improved functioned well after release (33.3 percent) compared to those who did not improve (10.6 percent).

Medication Compliance After Release. There was a significant relationship between medication compliance on release and functioning well for NGRI patients. Those who took their medicine regularly or somewhat regularly were rehospitalized significantly less often, were employed more regularly, had higher GAS scores, had a better level of functioning and

complied better with the rules of release. In the NGRI group, the associations between medical compliance and outcome had the highest consistent levels of significance of all independent variables. For example, 91.7 percent of those who took their medicine irregularly were readmitted to mental hospitals after release, compared to 35.9 percent of those who took their medicine regularly.

Summary

It was seen in this chapter that during the five years after release, 54.3 percent of the NGRI patients, 73.3 percent of the prison transfers, and 65.4 percent of the control group were rearrested. All three groups showed a decrease in their normalized rates of arrest before versus after. The actual percentage change in the number of arrests pre to post was 13 percent in the NGRI and prison transfer groups, and 9.5 percent in the control group. Since all three groups experienced similar declines in rearrests it may be possible that the overall reductions in rearrests for all three groups was a result of aging.

Prison transfers were found to have not only more frequent rearrests but the worst outcomes after release on nearly all outcome variables. Compared to either the NGRI's or control group, prison transfers had higher unemployment rates, lower GAS scores after release, poorer overall functioning, more rehospitalizations, and were less likely to be in compliance with the rules of release They also were rearrested sooner after their release from prison than the other two groups.

As seen in Chapters IV and V, prison transfers were also found to have poorer levels of functioning prior to the instant offense, higher prior arrest rates, and the same amount of prior mental hospitalizations as the NGRI group. They also were more psychotic at the time of admission to the mental hospital, and received considerably less and shorter treatment than the NGRI patients. It should be recalled from Chapter IV, however, that the prison transfers were composed of different types of offenders than either the NGRI's or matched control group. They were composed of fewer murderers and more men who had been arrested for robbery and property

offenses than the other two groups. Prison transfers were an average of three years younger than the other two groups.

Some of the differences in outcome can probably be attributed not only to the younger age of the prison transfers but to the fact that more prison transfers were repeat offenders to begin with. They were functioning more poorly than the other two groups prior to hospitalization and continued to function worse than the other groups after release.

In contrast, the NGRI's showed reductions in the number of pre and post hospitalizations, arrests, and the number of offenses committed, and appeared to return to the same or slightly higher level of functioning as prior to the instant offense. The control group, while functioning well in terms of significantly more employment during release than prior to the instant offense, did show an increase in their normalized average number of offenses, and no significant reduction in the proportion who were arrested over the entire follow-up period. These findings suggest that prison transfers would be the group most in need of additional treatment.

It is interesting to note that in all three groups, the rearrest rates found in this study were considerably higher than those found in other research. (It should be recalled from Chapter IV that the prior arrest rates were also higher than those reported in other research.) For example, Pasewark et al. (1979a) found a 20 percent rearrest rate among insanity acquittees, and Steadman and Braff (1983) found a 35 percent rearrest rate. In a four year follow-up of prison transfers, Steadman and Cocozza (1974) found 20 percent rearrested. In a study of prison releasees, Steadman et al. (1978) found that offenders released from jail

and prison had three to six times higher rates of arrest compared to ex-mental patients.

The trend of rearrests going up over time, as seen in our study, has been seen in other research as well as in national statistics. For example, in a study by the State of Illinois (Illinois Criminal Justice Information Authority, 1985), a random sample of prison releasees was found to have the following arrest statistics:

40 percent rearrested within eight years;
48 percent rearrested within one year; and
60 percent rearrested within 20 months.

In the Morrow and Peterson study (1966), though reconvictions were used rather than rearrests, 17 percent failure rates were found at one year post release, which increased to 37 percent after three years.

It is possible that the higher post arrest rates were found in this study because of a longer follow-up period (five years), compared to most other studies which used a shorter follow-up period. The relationship between length of time post release and time till rearrest will be explored in greater detail in the next chapter. It is also possible that the use of multiple sources for arrest data, that is, state police arrest histories, FBI rap sheets, and information gathered from social workers and parole agents, gave a more accurate picture of the actual amount of offending behavior in which subjects had been involved, compared to studies that use only one source (i.e. FBI rap sheets).

We have no reason to believe that the prison control group generated for this study was atypical from other prison releasees, except on the characteristics on which they were matched to the NGRI group. For example, the Maryland prison population from 1969 to 1980 (roughly the years from

which the control group was drawn) was composed of 66.1 percent minority members, compared to 58.3 percent for our control group. Nationally, 47.1 percent of those entering prison in 1979 were admitted for a violent offense while our control group was made up of 80.4 percent violent offenders. However, given previous research, both these factors should have led to lower rearrest rates, not higher rates. For that matter, when compared to U.S. Bureau of Justice Statistics (1985), the control group had fewer prior incarcerations compared to a national sample of prison admissions: 57.5 percent had been previously incarcerated compared to 61 percent of national prison admissions.

Finally, the independent variables associated with outcome after release differed somewhat between the insanity acquittees and prison groups. For example, the traditional variables that are associated with criminality were found to hold true for the control group: age, race, prior employment, prior arrests as a juvenile and adult, and poor school adjustment. However, while all of these variables were significantly associated with criminality in the prison transfer group, the associations were weaker, and the variables of trauma as a child, alcoholism, type of instant offense (property crime versus crime against persons), GAS score, and hospital adjustment were all related to rearrests as well. In the NGRI group, fewer of these variables traditionally related to criminality were found to be associated with rearrest, though several were: prior arrests as a juvenile and adult, alcoholism, unemployment, and type of instant offense. Equally strong associations were found in this group, however, on prior hospitalizations, hospital adjustment, and hospital assessment. Therefore, it appears that the correlates of criminality put forth by

Monahan and Steadman (1984) hold true for the control group, and are somewhat less applicable to the prison transfers and the insanity acquittees. In these last two groups, these variables are overshadowed by the correlates of mental illness, that is, prior hospitalization, alcoholism, drug dependence, and adaptation to the hospital environment.

CHAPTER 7

METHODS FOR PREDICTING PATIENT OUTCOME

Research Objectives

One of the most difficult decisions faced by the staff of the hospital is whether a patient should be recommended for release. While the court is ultimately responsible for the release decision, the recommendation of the hospital staff carries a significant weight. Release can only occur when the hospital administrators have sufficient reasons to believe that a patient has improved to the point that successful integration into the community is very likely. As described in Chapter 3, patients can then be placed by court order on a five year conditional release program as set forth in the Annotated Code of Maryland.

Patient improvement while in CTPHC does not, of course, guarantee that a patient can cope successfully in society. Even with careful attention under the conditional release program, a releasee may have adjustment problems due to traumatic personal crises, family instability, and inability to find or keep employment. The greatest fear is that the releasee will commit another offense against society. On the other hand, too much caution on release decisions can result in keeping patients in CTPHC unnecessarily.

One of the research objectives of the project was to determine the extent to which the information collected on patients and outcomes can be applied in a practical manner to assist in the release decision. The general approach for this research is to compare the characteristics of the group of patients who were successful after release against the group who were not successful. Differences in the characteristics of the two groups point the way to procedures for predicting whether individual patients should be recommended for conditional release.

As described in Chapter 6, there are several potential outcome measures on which to judge the success of releasees. Two of the most important measures are the overall functioning of the releasee and rearrests during the conditional release period. Failure at overall functioning during the conditional release period meant that a patient either had a reappearance of previous disorders or the appearance of new mental disorders. As shown in Exhibit 6-4, sixty-one of the releasees were rated as "poor" or "fair" at overall functioning while sixty were "good" or "very good" (outcomes for six patients could not be determined). On the outcome measure of rearrests, 58 of the releasees were not rearrested during the conditional release period while 69 releasees were. Both these outcomes are discussed in this chapter.

The general procedure for developing the prediction tools described in this chapter was as follows. The patients were divided into "successful" and "unsuccessful" groups. On the variable of overall functioning, the successful group was comprised of those patients judged as "good" or "very good" with regard to functioning during conditional release while the unsuccessful group was judged as "fair" or "poor." Chi-square tests and proportional reduction in error statistics (lambda statistics) were then made to determine which key variables from the Outcome Predictor Inventory produced significant differences between the two groups. Many variables were found not to be significant, and therefore not considered to be of value in a prediction context, while other variables were found to be significant. The significant variables were then used in a stepwise discriminant analysis to determine a group of variables which collectively differentiated between the two groups. The resulting discriminant function serves as a guide for determining the risks involved in releasing a particular individual. A discussion of these risks is included to illustrate the application of the discriminant function.

Overall Functioning

Exhibit 7-1 summarizes the results of the tests for determining which Outcome Predictor Inventory variables are significant. As an example of how these tests were performed, the following table relates the outcome of overall functioning to the single variable called EMPLOY1 which reflects the employment status during conditional release. The table is based on the 120 patients for whom employment status could be determined.

	Employment Status			
Overall Functioning	Unemployed Continually	Employed Erratically	Employed Continually	Total
Poor/Fair	17	33	10	60
Good/Very Good	4	11	45	60
Total	21	44	55	

The trend in these figures is clear. Those patients who were employed continually were also more likely to be successful in regard to overall functioning. Of the 55 patients who were employed continually, 45 (81.8 percent) were successful in overall functioning. On the other hand, of the 21 patients who were continually unemployed, only 4 (19.0 percent) were successful in overall functioning. The chi-square value for this table is 41.3 which is significant at the 1 percent level.

Exhibit 7-1 also shows the values of the *lambda* statistic developed by Goodman and Kruskal (1954) as a measure of "proportional reduction in error." The value of lambda always ranges between zero and one. A value of zero means that the associated variable is of no help in predicting the overall functioning outcome while a value of one means that the variable is a perfect predictor of the category of overall functioning. A lambda equal to one is virtually impossible since it would mean that the variable is perfectly correlated with outcome. However, the

EXHIBIT 7-1

STATISTICALLY SIGNIFICANT VARIABLES FOR OVERALL FUNCTIONING

Variable Name	Outcome Predictor Inventory Question	Chi Square	Lambda
MARITAL	7. Marital status at admission	6.3	.22
MILITARY	11. Military service	3.9	.18
PSEVERIT	14. Severity of most serious instant offense	21.7	.33
PRIORHOS	17. Number of prior mental illness hospitalizations	6.1	.23
RESIDENC	24. Residence at time of arrest	10.1	.22
WORKING	26. Working or in school at time of arrest	12.0	.33
EMPLHIS	27. Employment history (in past 4-5 years)	13.6	.29
WORK2YRS	28. Working or in school more than one year during the 2 year period preceding arrest	14.0	.36
INCOME	29. Source of income in year prior to arrest	35.4	.47
PROLEA	40A. Wage earner functioning in previous year	12.4	.28
PROLED	40D. Overall functioning in previous year	11.1	.22
SECLUDE	64. Number of episodes of seclusion during stay	6.9	.18
ADJUST	69. Adjustment at CTP based on suspensions, programmatic failures, revocation of privileges	15.7	.28
ASSESS	70. Social worker's assessment of degree of change in patient's behavior during stay	8.2	.24
GASDIS	71. GAS score at discharge (t-test)	4.9	N/A
DOSAGE	72. Number of medications	7.0	.22
CONTACT	75. Social worker contact during conditional release period	3.6	.15
EMPLOY1	82. Patient's employment situation in first half of conditional release	41.3	.58

value of lambda is a good measure of the reduction in prediction error when values of one variable are used to predict the overall functioning outcome. For the variable EMPLOY1, lambda is equal to .58 which indicates that this variable should be considered as a predictor.

The variables from Exhibit 7-1 found to be significant were next used in a stepwise discriminant analysis. The objective of this analysis was to identify a set of variables which collectively predict outcome with a high degree of success. That is, the resulting discriminant function should be able to assign patients to either the successful or unsuccessful group based on the key variables. In discriminant analysis, a linear combination of the variables is formed to serve as the basis for assigning cases to groups.

The analysis showed that seven of the variables were of benefit in discriminating between the two groups: EMPLOY1, PSEVERIT, GASDIS, MARITAL, WORKING, PROLEA, and PRIORHOS. The linear discriminant equation has the following form:

$$\begin{aligned} \text{SCORE} = {} & 8.21*\text{EMPLOY1} - 4.74*\text{PSEVERIT} + .49*\text{GASDIS} + 2.62*\text{MARITAL} \\ & - 7.36*\text{WORKING} - 3.38*\text{PROLEA} - 1.44*\text{PRIORHOS} + 33.94 \end{aligned}$$

This equation can be used for classification purposes by placing the specific values for a patient into the equation and performing the arithmetic calculations to obtain a score. The result of the calculation will be a number between zero and 100. Higher scores indicate that the patient is a good risk to be released while lower scores reflect greater risk. In general, patients with scores greater than the midpoint of 50 should be considered for release.

One way of judging the utility of this procedure is to apply the discrimination equation to the entire sample of patients. Comparisons can then be made between the predicted and actual outcomes. Exhibit 7-2 shows the results of this classification

procedure under the decision rule that patients with scores greater than 50 were placed on conditional release.

EXHIBIT 7-2

OVERALL FUNCTIONING RESULTS
PREDICTED VERSUS ACTUAL OUTCOMES

	Predicted Outcome		
Actual Outcome	Poor/Fair	Good/Very Good	Total
Poor/Fair	45 73.8%	15 26.2%	60 100%
Good/Very Good	10 16.7%	50 83.3%	60 100%

NOTE: 7 patients could not be classified because of missing data.

These figures show that 95 patients (79.1 percent) were correctly classified. Of the 60 patients in the Poor/Fair group, 45 (73.8 percent) were predicted correctly while 16 (26.2 percent) were not while with the 60 patients in the Good/Very Good group, 50 (83.3 percent) were predicted correctly while 10 (16.7 percent) were not.

It should be noted that the same group was used to develop the discrimination equation and to validate the equation. Applying the equation to an independent sample may not produce the same results. Because the initial sample size of 120 patients was small, it was not possible to split the sample into test and validation subgroups.

Another way of judging the utility of the discriminant equation is to develop success and failure rates for ranges of scores. Exhibit 7-3 gives percentages of

success and failure based on the scores of the patients.

EXHIBIT 7-3

FAVORABLE OUTCOME TABLE
OVERALL FUNCTIONING

	Score				
Actual Group	<40	40-50	50-60	60-70	>70
Poor/Fair	100%	95%	38%	22%	0%
Good/Very Good	0%	5%	62%	78%	100%

This table shows, for example, that all patients with scores less than 40 points were unsuccessful in overall functioning during their conditional release. With patients in the 60-70 point range, 78 percent were successful in overall functioning while 22 percent were not.

Recidivism

The other outcome of interest concerns whether releasees were arrested again during their period of conditional release. As shown in Exhibit 6-6, there were 58 releasees (45.7 percent) who were not rearrested within five years after release and 69 (54.3 percent) who were rearrested at least once. Using this dichotomy on rearrest, the same procedure for developing a discriminant equation and prediction technique can be developed as was done with the overall functioning outcome.

Exhibit 7-4 shows the Outcome Predictor Inventory variables which were found to be significant with regard to rearrest. Chi-square tests and proportional reduction in error (lambda) statistics were used to identify these variables.

It should be noted that the variables in Exhibit 7-4 differ in many respects from those found to be significant in regard to overall functioning. Since rearrest

EXHIBIT 7-4

STATISTICALLY SIGNIFICANT VARIABLES FOR REARRESTS

Name	Outcome Predictor Inventory Question	Chi Square	Lambda
PSEVERIT	14. Severity of most serious instant	7.0	.12
PRIORHOS	17. Number of prior mental illness	3.0	.10
EMPLHIS	27. Employment history	8.8	.20
BIRTH	31. Birth order	6.8	.11
MOVES	33. Approximate number of major geographic moves during childhood	7.7	.16
STABILTY	38. Stability of patient's marriages/ relationship history	3.0	.18
PROLEB	40B. Functioning as mate in previous year	7.0	.27
PROLEC	40C. Functioning as parent in previous year	7.6	.31
PROLED	40D. Overall functioning in previous year	4.9	.13
SECLUDE	64. Number of episodes of seclusion	7.8	.08
ADJUST	69. Adjustment at CTP based on suspensions, programmatic failures, revocation of privileges	16.1	.25
GASDIS	71. GAS score at discharge	1.8	N/A
REAPEAR1	76. Reappearance of previous disorders or new mental disorders during first half of conditional release	5.4	.17
COMPLY1	77. Has patient complied with rules of aftercare plan during first half of conditional release?	22.5	.36
EMPLOY1	82. What has been patient's employment situation in first half of conditional release?	15.7	.30

NOTE: Since GASDIS is a continuous variable, a t-test was performed. The lambda statistic is not applicable for continuous variables.

outcome is not the same type of outcome as overall functioning, it cannot be expected that the significant variables will be the same.

The variables in Exhibit 7-4 were used in a stepwise discriminant analysis procedure. The analysis showed that four of the variables were of greatest utility in discriminating between patients who were rearrested and patients who were not. These variables were BIRTH, MOVES, ADJUST, and COMPLY1. The linear discriminant equation has the following form:

SCORE = -10.56*BIRTH + 5.18*MOVES + 10.05*ADJUST + 11.30*COMPLY1 - 4.28

This equation can be used for classification purposes in the same manner as previously discussed. That is, the score for a particular patient can be calculated by placing the specific values for a patient into the equation and performing the arithmetic calculations.

If a decision rule is established that patients with scores greater than 50 can be released, then the comparative results are as shown in Exhibit 7-5.

EXHIBIT 7-5

REARREST RESULTS
PREDICTED VERSUS ACTUAL OUTCOMES

	Predicted Outcome		
Actual Outcome	No Rearrest	Rearrest	Total
No Rearrest	43 74.1%	15 25.9%	58
Rearrest	21 30.4%	48 69.5%	69

The overall percentage of releasees correctly classified is 71.7 percent. Of the 58 patients who were not rearrested, the discriminant analysis correctly predicted that 43 (74.1 percent) would not rearrested be while with the 69 patients who were rearrested, the analysis correctly predicted that 48 (69.5 percent) would be.

Finally, Exhibit 7-6 shows the Favorable Outcome Table under this decision rule. From this table, it can be seen that, as expected, the chances of success

EXHIBIT 7-6

FAVORABLE OUTCOME TABLE
REARREST

	Score				
Actual Group	<40	40-50	50-60	60-70	>70
Rearrest	93%	52%	44%	21%	12%
No Rearrest	7%	48%	56%	79%	88%

increase as the scores increase.

In conclusion, this chapter has demonstrated that procedures can be established to assist in the decision for release. The choice of outcome measure is particularly important in the decision process. The analysis shows that different predictor variables emerge depending on whether the outcome measure is overall functioning or rearrest. The outcome of rearrest is more difficult to predict based on the variables in the Outcome Predictor Inventory and there is apparently greater risk involved in predicting this outcome.

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APPENDIX A

OUTCOME PREDICTOR INVENTORY

OUTCOME PREDICTOR INVENTORY

PATIENT MOVEMENT

___ Survey Number

Name _____ (aka _____)

CTP# _____

CTP Admission Date _____

CTP Discharge Date _____

CTP Cond. Release Discharge Date _____

_____ 1. Age at discharge

** ____ 2. Length of time in CTP (days) relating to current charges (including evaluation time)

*____ 3. Length of time from discharge til discharge from cond. release (days)

ACE SHEET*

Last Address _____ Other Address _____

_____ _____

_____ _____

***

Birthdate __/__/__ (mm dd yy) SS# _____

__ 4. Age

_____ 5. Race 1=White 2=Black 3=Other

__ 6. Highest grade achieved (If < 12th: GED? 1=Yes 2=No)

_____ 7. Marital status at admission : 1=Married 2=Separated 3=Divorced/Widowed 4=Living together/commonlaw 5=Single

_____ 8. Number of children NGRI Date*: _____

_____ 9. Number of siblings

_____ 10. Occupation : _____

_____ 11. Military service : 1=Yes 2=No

_____ 12. If yes: Type discharge : 1=honorable 2=general 3=dishonorable 4=Undesirable

*Length of time in prison on Prison Transfer survey
**Omitted for Control Group
***Length of time on parole for Prison Transfers and Control Group was added.

___/___/___/___ 13. Criminal charge(s): (code up to 4 charges)

_____ _____

_____ _____

Instant Offense Brief description of instant offense: _____

_____

Date of this offense: _____ Date of Arrest: _____

_____ 14. Severity of most serious instant offense

_____ 15. Degree of overt bizarre behavior involved in instant offense:
1=none 2=some 3=a great deal

_____ 16. Alcohol or drugs involved: 1=both 2=one or the other 3=neither
What type and amount _____

Prior Hospitalization/Private Therapy or Outpatient Treatment

Hospital	Dates	Reason for Stay

_____ 17. Number of prior mental illness hospitalizations: Actual number

_____ 18. Number of times in alcohol/drug treatment center or treated for either

_____ 19. Length of time in all prior hospitalization(s):
1=>9 mon 2=6-9 mon 3=3-6 mon 4=<3 5=none

_____ 19a. Length of time seen by private psychiatrist or as outpatient (same scale)

____ 20. Length of time from last hospitalization (prior to commitment of instant offense) to commission of instant offense (days)

_____ 21. Reason for most recent hospitalization prior to instant offense:
1=Observation/treatment due to arrest 2=Voluntary commitment

___/___/___ 22. Diagnosis categories for most recent prior hospitalization (not for this offense) _____ _____ _____

_____ 22a. Medications prescribed during prior hospitalization or by psychiatrist

_____ _____

_____ _____

*___ 23. Number of times in Perkins as a penal transfer

*___ 23a. Total number of months in hospital as penal transfer

PATIENT BACKGROUND

_____ 24. Residence at time of arrest: 1=parents 2=alone 3=spouse and/or children 4=other relatives/friends 5=institution 6=girlfriend

_____ 25. (If institution) type: 1=mental hospital 2=prison 3=jail 4=halfway house/group home 5=alcohol/drug treatment 6=other

_____ 26. Working or in school at time of arrest: 1=Yes 2=No 0=NA

_____ 27. Employment history (in past 3-5 years): 1=unemployed continually 2=employed erratically 3=employed continually-part time or seasonal 4=employed continually fulltime 5=NA.

_____ 28. Working or in school more than one year during the 2 year period preceding arrest: 1=Yes 2=No

_ _ 29. Source of income in year prior to arrest: 1=public 2=spouse 3=parents/relatives 4=self 5=other

_____ 30. Income bracket in year prior to arrest: 1=$0-5,000 2=$6-10,000 3=$11-15,000 4=$16-20,000 5=Over $21,000 6=Unknown

_____ 31. Birth order: 1=youngest 2=middle 3=oldest 4=only child

_ _ _ 32. Reared by: 1=non-relatives 2=aunt/uncle/grandparents 3=mother only 4=father only 5=parent/stepparent 6=both parents

_____ 33. Approximate number of major geographic moves during childhood: (state to state or city to city) 1=5 or more moves 2=3-4 moves 3=1-2 moves 4=none

34. Presence in childhood: 5=none 4=once 3=2-5 times 2=regularly for short time 1=regularly for years

_____ a. Sexual molestation

_____ b. Abuse/neglect/exploitation (physical) (_____)

_____ c. Emotional abuse (By whom? _____)

_____ d. Traumatic events (ex. death of relative) (Specify _____ _____)

_____ e. Major illnesses/accidents (Specify_____)

_____ f. Incest

_____ 35. Adjustment in school: 1=Very poor (failed grades/always in trouble)
2=Poor (poor grades/some trouble)
3=Average
4=Good

_____ 36. Sexual orientation: 1=homosexual 2=bi-sexual 3=heterosexual

_____ 37. Number of marriages

_____ 38. Stability of patient's marriages/relationships history:
1= Very unstable 2=Unstable 3=Stable 4=Very stable
0=NA

39. History of substance abuse: 1=Chronic/addiction 2=Occasional
3=Minimal use 0=DK

As Juvenile	As Adult	
_____	_____	a. Alcohol
_____	_____	b. Marijuana/hashish
_____	_____	c. Tranquilizers
_____	_____	d. Stimulants
_____	_____	e. Barbiturates, sedatives
_____	_____	f. Cocaine
_____	_____	g. Heroin
_____	_____	h. Opiates (codeine, morphine)
_____	_____	i. Psychedelics (LSD, PCP, Angel dust)
_____	_____	j. Other _____

40. Role functioning in year prior to offense: 1=poor 2=fair 3=good
4=very good 0=NA

_____ a. Wage earner
_____ b. Mate (Did patient abuse wife? _____)
_____ c. Parent (Did patient abuse children? _____)
_____ d. Overall functioning

_____ 41. Social activity in previous year:
1=Does not meet with friends
2=Does not meet except at work
3=Meets with friends about monthly
4=Frequently socializes
0=DK

History of Juvenile Delinquency

_____ 42. Number of arrests
_____/_____/_____ 43. Types of offenses
_____ 44. Conviction prior to age 16? 1=Yes 2=No
45. Dispositions (Number of times):
_____ Released at court intake
_____ Probation
_____ Jail/Detention Hall
_____ Commitment to juvenile facility

:ROUND DATA - FAMILY

_____ 46. Stability of nuclear family: 1=Very unstable (frequent moves, frequent parental absence) 2=Unstable (some moves, divorce) 3=Stable (minimal change/normal change) 4=Very stable (no change)

_____ 47. Parents' marital status at birth: 4=Married 3=Divorced/Separated 2=Widowed 1=Never married

_____ 48. Parents' marital status during childhood (early years through adolescence): 4=Married/Remarried 3=Divorced/Separated 2=Widowed 1=Never married (Who remarried? _____)

_____ 49. Parents' marital status at admission: 4=Married/Remarried 3=Divorced/Separated 2=Widowed 1=Never married (Who remarried? _____)

50. Presence in immediate blood relatives:

_____ a. Mental illness 1=mother 2=father 3=sibling 4=other rel.-(who?)_____

_____ b. Alcoholism/drug abuse 1=mother 2=father 3=sibling 4=other rel.-(who?)_____

_____ c. Suicidal behavior 1=mother 2=father 3=sibling 4=other rel.-(who?)_____

_____ d. Abused as children 1=mother 2=father 3=sibling 4=other rel.-(who?)_____

_____ e. Criminality 1=mother 2=father 3=sibling 4=other rel.-(who?)_____

_____ 51. History of domestic violence in family:
4=none 3=minor 2=some 1=chronic/long-term

_____ 52. Father's Occupation _____

Mother's Occupation _____

CLINICAL DATA *

53. SIGNS/SYMPTOMS List all symptoms mentioned by the patient or signs observed by psychiatrists, psychologists, or social workers. Mention any symptoms denied. Include affect or appearance.

(a) Prior Hospitalization(s)	(b) At Admission (For this offense)

54. Specific nature of delusions (If present at either (a) or (b):
1=Yes 2=No

__ Persecutory/paranoid
__ Grandiose
__ Somatic
__ Sexual
__ Pathological jealousy
__ Self depreciating
__ Other

55. Specific nature of hallucinations (If present at either (a) or (b):
1=Yes 2=No

__ Sight
__ Touch
__ Taste
__ Smell
__ Hearing

*Questions 53 through 73 for NGRI group and prison transfer group onl .

56. Psychological Testing at Admission

___ IQ-Verbal score
___ IQ-Performance score
___ IQ-Full scale score

List any elements of organic brain syndrome or thought disturbance discussed in the Admission Psychological Report.

_____

_____

_____

_____ Rate organic brain syndrome: 1=none 2=mild 3=moderate 4=severe
_____ Rate thought disturbance: 1=none 2=mild 3=moderate 4=severe

57. Diagnosis

___.___/___.___/___.___ Diagnosis at admission (per medical staff conference)
___.___/___.___/___.___ Diagnosis at discharge (Use final Summary Staff recommending Cond. Release or Discharge Summary)

_____ 58. Approximate age of onset of any psychiatric symptoms noted.
1=under 10 2=10-15 3=16-20 4=21-30 5=over 30

_____ 59. Presence of thought disorder, delusions, or hallucinations during month prior to admission for this offense.
1=Severe or continuous presence of any or all
2=Moderate amount of any or all
3=Minimal amount of any or all
4=None of any

_____ 60. Presence of depression, hypomania, or mania during month prior to admission for this offense.
1=Severe or continuous presence of any or all of above
2=Moderate amount of any or all
3=Minimal amount of any or all
4=None of any

_____ 61. Precipitating events/stressors for most recent psychiatric upset that led to this hospitalization during month prior to admission for this offens
4=No precipitative events
3=Minimal/moderate (argument with neighbor, new career)
2=Severe (serious illness in self or family, financial loss, marital separation)
1=Extreme/catastrophic (Divorce, financial ruin, death of relative, devastating natural disaster)

_____ 62a. GAS score during one year prior to admission

_____ 62b. GAS score at admission

_____ 63. Medical problems or disabilities _____

_____

CLINICAL STAY DATA

_____ 64. Number of episodes of seclusion during stay

* _____ 65. Length of time (days) until placed on work release (Ward 1 transfer date til January 1973 (_____); Ward 5 transfer date (_____)

* _____ 66. Prior to Ward 5, number of visits (visits divided by months since first admission)

67. Types of therapies employed (1=Yes 2=No)

_____ a. Group psychotherapy

_____ b. Individual psychotherapy (Name of SW _____)

_____ c. Rehabilitation program which one(s)? (AA, art, music, occupational) _____

_____ d. Educational programs

_____ e. Work outside security (where? _____)

_____ f. Medication

_____ g. Other _____

_____ 68. Global rating of participation in therapeutic activities:
1=minimal 2=average 3=very active

_____ 69. Adjustment at CTP based on suspensions, programmatic failures, revocation of privileges:
1=Very poor (frequently breaks rules, suspended, privileges revoked)
2=Poor (occasionally breaks rules, etc.)
3=Fair (seldom)
4=Good (rarely)

_____ 70. Hospital's assessment of degree of change in patient's behavior during stay: 1=No improvement 2=Some improvement 3=Considerable improvement

_____ 71. GAS score at discharge

Medications

_____ 72.

Name of drug (include mg)	Dosage	Dates
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

_____ 73. Medication compliance 1=Difficult 2=Episodic 3=Very cooperative

*Omitted for prison transfer group.

OUTCOME DURING CONDITIONAL RELEASE

74. Aftercare services plan/Rate of utilization or attendence: First Half? Second?
(1)Poor (2)Sporadic (3)Regular (4)Excellent (0)Not applicable
__ a. Follow-up with social worker or parole agent _____
__ b. Follow-up-other agencies (where?) _____
__ c. Training program (where?) _____
__ d. School (where?) _____
__ e. Alcoholics Anon.
__ f. Get/maintain job
__ g. Other (specify) _____

____ 75. Did social worker maintain contact throughout cond. release period? 1=Yes 2=No
If no, what year did contact cease? _____

__ 76. Reappearance of previous disorders or new mental disorders during first half? 1=Yes 2=No During second half?
(If yes: which one(s) and when? _____)

__ 77. Has patient complied with the rules of aftercare plan during first half? Second half? 1=not at all 2=somewhat 3=mostly

78. If not: What prohibited behavior has patient engaged in during first or second half of conditional release? (1=Yes 2=No)
__ Drinking
__ Drug use
__ Socializing with prohibited others
__ Criminal/illegal activity
__ Inappropriate/marginally unlawful conduct
__ Left area/moved
__ Other _____

____ 79. Residence released from CTP (or prison) to: 1=parents 2=Hamilton House 3=other group/halfway living 4=other relatives 5=friends 6=alone 7=spouse/lover 8=other (_____)

79a. Length of time at Hamilton House (months) _____

_____ 80. Subsequent residences: same list (up to 5)

__/__/__ 81. Jobs held during conditional release, approximate duration and wages:

_____

_____

_____

__ 82. What has been patient's employment situation in first half and second half of conditional release?
1=unemployed continually 2=employed erratically/going to school (sev. months a year/on again-off again) 3=employed continually part-time/seasonal 4=employed continually full-time

__/__ 83. Patient's source of income: 1=public 2=spouse 3=parents/relatives 4=self 5=other

83a. Briefly describe major events of outcome period _____

_____

_____

__ 84. Changes in patient's marital status since recorded at time of admission: 1=married 2=separated 3=divorced 4=living with someone 5=widowed 6=no change (up to 2 changes)

85. Role functioning during conditional release period: first half & second half
1=poor 2=fair 3=good 4=very good 0=NA

__ a. Wage earner
__ b. Mate
__ c. Parent
__ d. Overall functioning

*__ 86. Social activity during conditional release period: first half? second?
1=Does not meet with friends
2=Does not meet people except at work
3=Meets with friends monthly
4=Frequently socializes

__/__ 87. GAS scores during conditional release: first half and second half

____ 88. Medicine(s) and dosage taken during majority of conditional release period: 4=none 3=minimal (0-100mg) 2=moderate (100-400) 1=high (400-800) Specify drug(s) (dosage & dates): _____

_____

__ 89. To what extent did patient comply with medication plan while on conditional release: 1=did not take at all 2=took irregularly 3=took somewhat regularly 4=complied completely 5=none prescribed

____ 90. Was patient readmitted to any mental hospital during conditional release? 1=Obser/treatment due to arrest 2=Voluntary 3=No

__/__/__ 91. If yes: Which hospitals? 1=CTP 2=St. Eliz. 3=Other (_____)

____ 92. Number of readmissions (Dates: _____ _____ _____)

____ 93. Amount of time in mental hospital since release: 1=>9 months 2=6-9 3=3-6 months 4=<3 months 5=not in hospital

__ 94. Subsequent diagnosis category

*Questions 86 to 89 not applicable to control group

PRIOR ARREST HISTORY DATA

95. Charges (up to 5)/conviction/disposition for each arrest episode (use codes)

(1) _ _ _/_ _ _/_ _ _/_ _ _/_ _ _/_ _ _/_ _

(2) _ _ _/_ _ _/_ _ _/_ _ _/_ _ _/_ _ _/_ _

(3) _ _ _/_ _ _/_ _ _/_ _ _/_ _ _/_ _ _/_ _

(4) _ _ _/_ _ _/_ _ _/_ _ _/_ _ _/_ _ _/_ _

(5) _ _ _/_ _ _/_ _ _/_ _ _/_ _ _/_ _ _/_ _

(6) _ _ _/_ _ _/_ _ _/_ _ _/_ _ _/_ _ _/_ _

(7) _ _ _/_ _ _/_ _ _/_ _ _/_ _ _/_ _ _/_ _

(8) _ _ _/_ _ _/_ _ _/_ _ _/_ _ _/_ _ _/_ _

(9) _ _ _/_ _ _/_ _ _/_ _ _/_ _ _/_ _ _/_ _

(10) _ _ _/_ _ _/_ _ _/_ _ _/_ _ _/_ _ _/_ _

Date of most recent arrest prior to instant offense /_____/

_ _ 96. Age of first arrest as adult (or charged as adult)

_ _ 97. Total number of prior arrests

_ _ 98a. Total number of convictions for felonies

_ _ 98b. Total number of convictions for misdemeanors

_ _ 99. Number of times on probation

_ _ 100. Number of times incarcerated

_____ 103. Incarcerated more than one-half of the two-year period preceding the instant offense arrest: 1=Yes 2=No

_____ 104. Was probation or parole ever revoked, or committed new offense while on parole? 1=Yes 2=No

_____ 105. Severity of criminal history

POST DISCHARGE ARREST DATA

Date of first arrest after release from CTP /_____/

106. Charges/convictions/disposition/years since arrest (up to 5 charges per arrest episode)

(a) __ __/__ __/__ __/__ __/__ __/____/__/__

(b) __ __/__ __/__ __/__ __/__ __/____/__/__

(c) __ __/__ __/__ __/__ __/__ __/____/__/__

(d) __ __/__ __/__ __/__ __/__ __/____/__/__

(e) __ __/__ __/__ __/__ __/__ __/____/__/__

(f) __ __/__ __/__ __/__ __/__ __/____/__/__

(g) __ __/__ __/__ __/__ __/__ __/____/__/__

(h) __ __/__ __/__ __/__ __/__ __/____/__/__

(i) __ __/__ __/__ __/__ __/__ __/____/__/__

(j) __ __/__ __/__ __/__ __/__ __/____/__/__

__ __ 107. Total number of post arrests

__ __ 108. Total number of convictions for felonies (Part I offenses)

__ __ 109. Number of times on probation

__ __ 110. Number of times incarcerated

__ __ __ 111. Number of convictions for Part II offenses

____ 113. Severity of criminality based on post record (use codes)

__ __ 114. Length of time from CTP discharge to first post arrest (months)

__ __ 115. Number of post arrests within 5 years

__ __ 116. Number of convictions for Part I offense within 5 years

__ __ 117. Number of times on probation within 5 years

__ __ 118. Number of times incarcerated within 5 years

__ __ 119. Number of convictions for Part II offense within 5 years

__ __ 120. Number of months until first violent offense arrest

APPENDIX B

SALIENT FACTOR SCORES

SALIENT FACTOR SCORE

Item A

No prior convictions (adult or juvenile) = 3
One prior conviction = 2
Two or three convictions = 1
Four or more prior convictions = 0

Item B

No prior commitments (adult or juvenile) = 2
One or two prior commitments = 1
Three or more prior commitments = 0

Item C

Age at behavior leading to first commitment (adult or juvenile):
26 years or older = 2
18 - 25 years old = 1
17 years or younger = 0

Item D

Commitment offense did not involve auto theft or checks (forgery/larceny) = 1
Commitment offense involved auto theft, or checks, or both = 0

Item E

Never had parole revoked or been committed for a new offense while on parole, and not a probation violator this time = 1
Has had parole revoked or been committed for a new offense while on parole, or is a probation violator this time, or both = 0.

Item F

No history of heroin or opiate dependence = 1
Otherwise = 0

Item G

Verified employment (or full-time school attendance) for a total of at least 6 months during the last 2 years in the community = 1
Otherwise = 0

NOTE: For purposes of the Salient Factor Score, an instance of criminal behavior resulting in a judicial determination of guilt or an admission of guilt before a judicial body shall be treated as if a conviction, even if a conviction is not formally entered.

APPENDIX C

OCCUPATION CODES

OCCUPATIONAL CODES*

1 = Higher executive, proprietor of large concern, major professional.

2 = Business manager of large concern, proprietor of medium-sized business, lesser professinal (e.g., teacher, administrator, computer programmer).

3 = Administrative personnel, owner of small independent business, minor professional (e.g., artist, lab assistant, dispatcher).

4 = Clerical or sales worker, technician, owner of small business, student.

5 = Skilled manual employee (e.g., painter, fireman, carpenter, plumber).

6 = Machine operator, semi-skilled employee (e.g., truck driver, waiter, welder).

7 = Unskilled employee (e.g., construction worker, laborer, domestic).

8 = Never worked in paid employment.

*Adopted from A.B. Hollingshead, Two-factor Index of Social Position, Yale University, 1952.

APPENDIX D

FBI INDEX CRIMES

FBI INDEX CRIMES

Murder and Nonnegligent Manslaughter: The willful (nonnegligent) killing of one human being by another.

Rape: The carnal knowledge of a female forcibly and against her will.

Robbery: The taking or attempting to take anything of value from the care, custody, or control of a person or persons by force or threat of force or violence and/or by putting the victim in fear.

Aggravated Assault: An unlawful attack by one person upon another for the purpose of inflicting severe or aggravated bodily injury.

Burglary: The unlawful entry of a structure to commit a felony or theft.

Larceny-theft: The unlawful taking, carrying, leading, or riding away of property from the possession or constructive possession of another.

Motor Vehicle Theft: The theft or attempted theft of a motor vehicle.

Arson: Any willful or malicious burning or attempt to burn, with or without intent to defraud, a dwelling house, public building, motor vehicle or aircraft, personal property of another, etc.