Predicting Success on Conditional Release for Insanity Acquittees: Regionalized Versus Nonregionalized Hospital Patients

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This research compared the outcomes of two cohorts of insanity acquittees: one group was treated solely in the maximum security state forensic hospital before their release to the community (nonregionalized) and the other group was treated at the state forensic hospital and transferred for further treatment at less secure state regional hospitals (regionalized). This research describes the outcome of a group of insanity acquittees (regionalized patients) never previously studied. The applicability of a prediction model based on earlier research of insanity acquittees was tested on the patients. Findings on four outcome indicators are reported: rearrests within five years after release, overall functioning in the community five years after release, rehospitalizations for mental illness, and successful completion of the terms of the five-year conditional release (nonrevocation). Discriminant analysis was performed on the four outcome variables. The model was found to accurately predict the four types of outcome from 69 percent to 94 percent accurately for the nonregionalized insanity acquittees and from 87.5 percent to 95.8 percent for the regionalized patients. This model is currently being adapted to classify patients into potential high- and low-risk groups at the time of conditional release for the purpose of determining the intensity of outpatient supervision.

Many states have a policy of "regionalizing" nondangerous insanity acquittees from the maximum security state forensic hospital to minimum security regional mental hospitals for a variety of reasons.[1] In the state of Maryland, there have been three reasons for regionalizing an insanity acquittee: 1) a patient is deemed no longer dangerous or in need

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of a maximum security forensic hospital setting but still requires further treatment; 2) a patient is chronically mentally ill and is not anticipated to be released for a significant period of time; and 3) a patient is not considered appropriate for the work release program in the maximum security hospital. The outcome of regionalized patients has never been studied. This article examines the outcome of such regionalized patients in order to determine the effectiveness of the Maryland state policy.

Prediction of successful outcome in the insanity acquittee population is crucial in facilitating patient release decisions. During the 1970s, forensic focus shifted from civil commitment based on a need for treatment toward civil commitment based on a standard of dangerous to self or others.[2] This trend accordingly heightened interest in the prediction of violent behavior.

One major problem in violence research in general has been the overprediction of violence, that is, high false positive prediction rates. This may occur because violence has a low rate of occurrence and thus can easily be overpredicted.[3] Furthermore, as Wenk *et al.*[4] point out, few violent episodes are actually known; only "certified" episodes of violence are known. In addition, there is little consensus on the definition of violence or reliability in verifying its occurrence.

Defining what constitutes successful treatment outcome presents a second problem in prediction research. Recidivism is frequently used as the sole criteria of outcome, but its sole use with the criminally insane population is not appropriate. Other measures of outcome should be included, such as mental health stability, functioning, rehospitalization, and compliance with the conditions of release. The use of recidivism as an outcome measure has also been criticized as overlooking the value of programs whose goals may be other than to alleviate an individual's future criminality.[5,6] Indeed, there is little agreement among researchers as to a definition of recidivism. Maltz[5] has identified nine different definitions of recidivism but advocates using rearrest rates as the most accurate, though limited, definition. We acknowledge rearrest is not a true measure of violence nor true recidivism but is the best available data on criminal behavior. In this research, while we recognize the limitations of rearrest rates,[7] we have chosen to continue to use rearrest as one of several indicators of outcome.

A third major problem in prediction literature is the lack of agreement about which independent variables are significant in a prediction model. Some studies have used standardized psychiatric interviews, mental status findings, and other clinical parameters.[8] Attempts at predicting adjustment on parole have relied largely on actuarial tables and have been somewhat more successful.[9,10] Though actuarial methods have come to be recognized as the generally superior way of predicting behavior,[3] there has been little work conducted on developing actuarial models for mentally disordered criminal offenders. Previous research has shown the need to combine

dispositional information with clinical and criminologic information into one model.[11]

Monahan,[12] in a recent assessment of the state of the art of violence prediction, concluded that there is such a lack of consistency in prediction research that for "every study that reports increases in predictive accuracy, there is another that finds clinical risk assessments no better than chance." He cites four methodological problems that have hampered prediction research: impoverished predictor variables, weak criterion variables, constricted validation samples, and unsynchronized research efforts. To overcome the first problem, he recommends researchers use precise DSM-III-R diagnoses, chronicle aftercare services, record clinical judgments at several points in time, and develop new measures to assess factors that appear theoretically relevant to violent behavior. To remedy the second problem, i.e., detecting violence, Monahan recommends recording rehospitalizations precipitated by violent behavior as well as arrests for violent crime, developing standardized assessment instruments to measure self-reported violence, and assessing subjects repeatedly over periods of time. The third problem, that of limited samples can be addressed by obtaining clinical rating of relative risk for patients judged suitable for release as well as during the very early phase of their hospitalization. Finally, Monahan suggests that research efforts be increasingly coordinated and collaborative.

The objectives of the present study were twofold: 1) to test, on a different cohort of patients, the applicability of a model previously developed to assist with forensic release decisions on Not Criminally Responsible (NCR) patients. This new cohort consisted of insanity acquittees who were regionalized to state mental hospitals after an initial stay in the state forensic hospital; and 2) to examine the outcomes of the regionalized patients to compare their success rate in the community with that of the NCR patients treated and released from the state forensic facility, Clifton T. Perkins Hospital Center (CTPHC).

Our model included patient and family background, clinical, treatment, and criminologic variables. The original model was tested on a cohort of 127 male insanity acquittees in the state of Maryland released from CTPHC from 1967 to 1978, compared with a matched control group of convicted felons, and a comparison group of mentally disordered prisoners transferred to in-patient psychiatric treatment and was reported on earlier.[13,14] In the study described here, the model was tested on insanity acquittees discharged from the state forensic hospital to a regional mental hospital and later discharged to the community.

All of the insanity acquittees had been originally treated at Clifton T. Perkins Hospital Center, a 250-bed maximum security hospital that provides pretrial psychiatric examinations for men and women accused of felonies in all judicial circuits of Maryland, as well as a comprehensive treatment program for men and women adjudicated NCR for violent offenses. At the time of their release

from Perkins (via a halfway house) or discharge from the regional facilities, insanity acquittees are placed on a "five year conditional release" as required by the Annotated Code of Maryland.[15] Conditional release provides the Mental Hygiene Administration with a legal mandate to monitor an insanity acquittee's compliance with certain treatment-oriented and other conditions imposed by court order when the patient is discharged. Specific requirements of each conditional release are developed by the treatment team in conjunction with the patient, his or her family, defense counsel, state's attorney, and any involved community support systems. At the end of the five-year period, a formal evaluation is held to determine whether the conditional release period should be terminated or extended.

Method

Subjects This study is based on a longitudinal investigation of two cohorts of patients: 1) 36 insanity acquittees released from CTPHC between January 1, 1983, to December 31, 1984; and 2) 24 insanity acquittees discharged from CTPHC to regional facilities and then discharged from the regional facility to conditional release. Most patients had been charged with felonies, released on the five-year conditional release program, and living in the community five to seven years.

Measures An abbreviated inventory adapted from the 120-item data inventory of the original study was used to collect data in five areas: 1) socio-demographic information; 2) episodes of prior psychiatric hospitalization; 3) clinical stay information (e.g., DSM-III-R diagnosis, length of stay, adjustment to hospital, improvement in hospital); 4) post-institutional outcome (employment, functioning, treatment, rehospitalization, revocation); and 5) pre- and post-institutional criminal involvement.

The data collection instrument incorporated several scales that were used to facilitate comparisons between pre- and post-time periods. A scale was developed that categorized severity of the charges for which a subject had been arrested before institutionalization, at the time of institutionalization, and during the follow-up period. The scale used six seriousness categories and was based on the Maryland Sentencing Guidelines[16] adopted by the Department of Public Safety and Correctional Services.

A role functioning scale was constructed based on earlier work by McGlashan.[17] The scale assessed a subject's functioning in four areas: as a wage earner, as a mate, as a parent, as well as globally. To measure the overall severity of psychiatric disturbance, Endicott et al.'s[18] Global Assessment of Functioning Scale (GAF) was used.[19]

The sources of dependent variable data were case records from Perkins Hospital and regional hospitals, and aftercare information provided to the Community Forensic Aftercare Department. For each subject, an extensive search for arrest data was undertaken by a review of the FBI arrest histories. Maryland State Police arrest records, and relevant information contained in the hospital and/or aftercare case rec-

ords. Data on prior and subsequent mental hospitalization episodes were obtained from the case records and aftercare files.

Analysis Chi-square tests of independence were performed to analyze the relationships between outcome indicators (dependent variables) and independent variables. For discussion purposes, independent variables have been grouped as follows: sociodemographic, background, and prior functioning data including prior arrests and hospitalizations, and clinical information, such as DSM-III-R diagnosis, GAF scores, assessment of improvement, and adjustment to the hospital (number of seclusions, fights, and degree of participation in hospital therapy). Dependent variables included outcome rearrests, rehospitalizations, violations of conditions of release, and functioning during conditional release.

Four indicators of success after release were predicted: 1) rearrests after release, 2) rehospitalizations after release, 3) functioning after release, and 4) successful completion of the terms of the five-year conditional release, i.e., nonrevocation of the conditional release. These four outcome variables were selected because they were felt to be the most important overall descriptors of a subject's success after release. The rearrest rate after five years is reported in order to afford a common cut-off time at which all subjects could be compared, though rearrests and mental hospitalizations after release were also collected for the length of the entire follow-up period.

All subjects in each group were divided into successful and unsuccessful outcome groups. On the rearrest indicator, those who were rearrested were placed in the "unsuccessful" group, and those not rearrested were placed in the "successful" group. On the indicator of overall functioning after release, those who had been rated on the role functioning scale as functioning "well" or "very well" after release were placed in the "successful" group, and those rated "poor" or "fair" were placed in the "unsuccessful" group. On the indicator of rehospitalization, patients were categorized as rehospitalized or not rehospitalized. On the indicator of successful completion of the terms of the five-year conditional release, patients were categorized as revoked or not revoked.

The Prediction Model In our previous research,[20] all of the variables with significant chi-square scores were used in two stepwise discriminant analyses on the original cohort of 127 insanity acquittees to determine which variables were the best predictors of successful outcome among insanity acquittees. Those variables found to be significant in the chi-square tests and proportional reduction in statistics tests (lambda statistics) were considered to be of value in a prediction context and were used in a stepwise discriminant analysis to determine which variables collectively differentiated between successful and unsuccessful patients. It should be noted that some variables with significant chi-square scores dropped out of the prediction model. Seven variables (listed with their standardized canonical coefficients) were found to correctly predict

functioning after release in 80.4 percent of the cases (lambda = .639; $p = .0001$): 1) severity of instant offense (.630), 2) employment before hospitalization (.510), 3) Global Assessment Scale score at release (−.445), 4) functioning before instant offense (.277), 5) adjustment in hospital (−.269), 6) clinical assessment of patient's improvement (−.255), and 7) marital status (.190). Six variables were found to correctly predict rearrest 75 percent of the time: 1) birth order (−.645), 2) adjustment in hospital (.60), 3) clinical assessment of patient's improvement (.537), 4) Global Assessment Scale score at release (−.512), 5) functioning before instant offense (.49), and 6) heroin addiction (−.349).

These original predictor variables formed the basis of the models that were tested on the two cohorts presented in this paper. Several additional variables were added for the regionalized group that were specific to their situation and not applicable to previous cohorts (i.e., GAF score and clinical assessment of improvement at the time of discharge from the regional facility, and adjustment to the regional hospitalization). Two additional predictions of outcome have been examined in this paper: rehospitalization and revocation of conditional release.

Findings

Descriptive Baseline Data The regional hospital cohort was slightly older (M = 33.0) than the CTPHC group (M = 31.3). The regional group was comprised of nearly all minority members (91.7%), significantly more minority members than the CTPHC group (72.2%). Nearly all patients in both groups were single (91.7%). The regional cohort was significantly more unskilled (70.8%) than the CTPHC group (47.2%), though about one-quarter of each group was working at the time of arrest.

While over three-quarters of both groups had been hospitalized previously, the regional cohort had nearly twice as many prior hospitalizations for mental illness (M = 5.9) as the CTPHC cohort (M = 3.1). Over four-fifths (83.3%) of the regional cohort had been arrested previously, which was not statistically higher than the 69.4 percent of the nonregionalized group. However, the regional cohort had an average of 3.3 prior arrests compared with 1.8 in the CTPHC group. There was no difference in the severity rating of the most serious prior arrest: 8.3 percent of the CTPHC group and 4.2 percent of the regional group had prior arrests in the "most severe" category, consisting of murder, rape, assault with intent to murder, and robbery.

There were statistically significant differences in the types of instant offenses for which the patients had been found not criminally responsible (NCR). Over one-quarter (27.8%) of the CTPHC group had been found NCR for murder compared with 4.1 percent of the regional group. Significantly more of the regional cohort had been found NCR for arson (29.1%) compared with the CTPHC group (5.5%). There was no significant difference in the proportion who had been charged with assault: two-fifths of both groups were found NCR

for assault or assault with intent to murder, maim or rape.

There were also statistically significant differences in the types of diagnoses between the two groups: 79.2 percent of the regional group were schizophrenics compared with 50 percent of the CTPHC group; 8.4 percent of the regional group had bipolar disorders compared with 33.4 percent of the CTPHC group.

Clinical Stay The CTPHC patients had made significantly better hospital adjustments while at CTPHC (77.8% rated "good") compared with the adjustments made by the regionalized patients (58.3% rated as "good"). Though over 90 percent of the two cohorts were rated equally highly as having made "some" or "considerable" improvement while in the hospital, the regionalized patients had lower average GAF scores at discharge (M = 52.7) compared with the CTPHC discharges (M = 60).

The regionalized patients were hospitalized considerably longer than the CTPHC patients when all of their hospitalizations for the instant offense were combined. The length of stay (LOS) for all the admissions to CTPHC was 37.1 months for the CTPHC NCRs and 37.8 months for the regionalized patients. The regionalized patients stayed an average of 14 months in the regional hospitals for a combined average LOS of 51.8 months.

Outcome Findings Table 1 presents a summary of the results on the outcome variables for the two groups. Nearly two-thirds (62.5%) of the regionalized patients and 47.2 percent of the nonregionalized NCRs were rearrested during the five-year follow-up period. While the differences in these rates are not statistically significant, there was a significant difference in the severity of the crimes for which they were arrested: significantly more (50%) of the regionalized patients were rearrested for crimes with the most severe ratings (1 or 2) compared with 29.4 percent for the nonregionalized group. The regionalized patients were also rearrested sooner than the CTPHC patients: an average of 1.3

Table 1
Summary of Baseline and Outcome Indicators

	CTPHC NCRs (N = 36)	Regionalized NCRs (N = 24)
Hospitalized		
Prior	77.8%	83.3%
Post	63.9%	79.2%
Arrested		
Prior	69.4%	83.3%
Post	47.2%	62.5%
Functioning		
Prior (% good/very good)	8.4%	16.7%
Post (% good/very good)	30.6%	29.2%
Conditional release revoked	30.5%	58.3%
Employed during conditional release	33.3%	8.3%

years until their first rearrest compared with 1.8 years for the CTPHC group.

Over three-quarters of the regionalized patients (79.2%) and 63.9 percent of the CTPHC group were rehospitalized. While both groups were rehospitalized an average of two times, regionalized patients spent nearly twice as long rehospitalized as the CTPHC group (M = 24.5 months compared with M = 14.2 months). The regionalized patients also had a significantly higher rate of revocation of their conditional release (58.3%) compared with the CTPHC group (36.1%). The primary reasons for revocation of conditional release were rearrest and noncompliance with medication or other requirements of the aftercare plan.

There was no difference in their rating on functioning level with just over one-quarter of the patients in each group rated as "good" or "very good", however, significantly fewer regionalized patients were employed during conditional release (8.3%) compared with nonregionalized patients (33.3%).

Predicting Outcome

Functioning During Conditional Release Table 2 presents the results of the discriminant analysis on the outcome variable "functioning after release" for both cohorts of patients. The following five variables (listed with their unstandardized canonical coefficients) were found to correctly predict outcome in 83 percent of the CTPHC cohort cases: 1) occupation (−2.4), 2) marital status (1.6), 3) race (−1.0), 4) hospital assessment (.8), and 5) GAF score at discharge (.7). The analysis showed that released patients who functioned well during conditional release were more likely to be married, have some labor skills, been assessed by clinical staff as considerably improved at the time of discharge, been white rather than minority, and had a GAF score better than 50 at discharge from CTPHC.

The following seven variables were found to correctly predict outcome in 87.5 percent of the regionalized group: 1) race (4.3), 2) prior functioning (−3.8), 3) prior hospitalization (−1.8), 4) mari-

Table 2
Functioning During Conditional Release: Predicted Versus Actual Outcome

	Actual Outcome	Correctly Predicted	Incorrectly Predicted
CTPHC group			
Unsuccessful	25 (69%)	21 (84%)	4 (16%)
Successful	11 (31%)	9 (82%)	2 (18%)
Total	36 (100%)	30 (83%)	6 (17%)
Total percent of cases correctly classified—83%			
Regionalized group			
Unsuccessful	17 (71%)	15 (88%)	2 (12%)
Successful	7 (29%)	6 (86%)	1 (14%)
Total	24 (100%)	21 (88%)	3 (13%)
Total percent of cases correctly classified—87.5%			

tal status (1.7), 5) GAF score at discharge from regional hospital (1.5), 6) GAF score at CTPHC discharge (−1.2), and 7) adjustment at regional discharge (.8). The analysis showed that released regionalized patients were those who adjusted well to the regional hospital (few seclusions or incidents of rule breaking), had fewer prior hospitalizations, had been functioning well prior to hospitalization for the instant offense, had been married, and had GAF scores at the CTPHC discharge and regional discharge over 50.

Rearrest During Conditional Release Discriminant analysis was used to predict which patients would be rearrested during the conditional release period. Table 3 shows that 52.8 percent of the CTPHC group and 62.5 percent of the regionalized patients had been rearrested. In the CTPHC group, the discriminant analysis correctly classified 74 percent of the patients who were rearrested and 65 percent of those not rearrested. Five variables (listed with unstandardized canonical correlation coefficients) were found to be of greatest strength in the rearrest discriminant analysis: 1) heroin addiction (1.4), 2) severity rating of instant offense (−1.3), 3) adjustment in hospital (1.2), 4) number of prior arrests (.9), and 5) age at time of admission (.6). The prediction equation showed that successful patients who were not rearrested after release were less likely to be heroin addicts, had adjusted well in the hospital, had lower severity level of instant offense, had fewer prior arrests, and were over 35.

In the regionalized group, the discriminant analysis correctly classified 100 percent of those rearrested and 89 percent of those not rearrested with the following three variables: 1) age at admission (−1.9), 2) GAF score at regional discharge (1.6), and 3) assessment at regional discharge (1.3). The analysis showed that patients under 25 and over 35 had fewer rearrests, those with GAF scores over 50 at the time of discharge from the regional hospital, and those who had been assessed by clinical staff as considerably improved were most likely to not be rearrested.

Rehospitalization During Conditional Release In the nonregionalized group, discriminant analysis correctly classified

Table 3
Rearrests After Release: Predicted Versus Actual Outcome

	Actual Outcome	Correctly Predicted	Incorrectly Predicted
CTPHC group			
Rearrested	17 (47%)	11 (65%)	6 (35%)
Not rearrested	19 (53%)	14 (74%)	5 (26%)
Total	36 (100%)	25 (69%)	11 (31%)
Total percent of cases correctly classified—69%			
Regionalized group			
Rearrested	15 (63%)	15 (100%)	0 (0%)
Not rearrested	9 (38%)	8 (89%)	1 (11%)
Total	24 (100%)	23 (96%)	1 (4%)
Total percent of cases correctly classified—95.8%			

83 percent of those 23 patients who were rehospitalized during conditional release and 54 percent of those not rehospitalized on the basis of three variables: 1) occupation (2.8), 2) functioning before hospitalization (2.3), and 3) age at admission (.8) (see Table 4).

In the regionalized group, discriminant analysis correctly predicted 80 percent of the patients not rehospitalized and 92 percent of those rehospitalized with the following four variables: 1) adjustment at CTPHC (2.3), 2) age at admission (1.6), 3) GAF score at regional discharge (−1.6), and 4) assessment of improvement at regional discharge (−.9). The prediction equation showed that patients with successful hospital adjustments, GAF scores over 50 at discharge, those who had been assessed by clinical staff as considerably improved at the time of discharge, and were between 25 and 35 had the fewest rehospitalizations.

Revocation During Conditional Release Table 5 shows the results of the discriminant analysis on the dependent variable of revocation during conditional release. The results show an ex-

Table 4
Rehospitalization After Release: Predicted Versus Actual Outcome

	Actual Outcome	Correctly Predicted	Incorrectly Predicted
CTPHC group			
Not rehospitalized	13 (36%)	7 (54%)	6 (46%)
Rehospitalized	23 (64%)	19 (83%)	4 (17%)
Total	36 (100%)	26 (72%)	10 (28%)
Total percent of cases correctly classified—72%			
Regionalized group			
Not rehospitalized	5 (21%)	4 (80%)	1 (20%)
Rehospitalized	19 (79%)	18 (95%)	1 (5%)
Total	24 (100%)	22 (92%)	2 (8%)
Total percent of cases correctly classified—91.7%			

Table 5
Revocation After Release: Predicted Versus Actual Outcome

	Actual Outcome	Correctly Predicted	Incorrectly Predicted
CTPHC group			
Revoked	13 (36%)	10 (77%)	3 (23%)
Not revoked	23 (64%)	17 (74%)	6 (26%)
Total	36 (100%)	27 (75%)	9 (25%)
Total percent of cases correctly classified—75%			
Regionalized group			
Revoked	14 (58%)	14 (100%)	0 (0%)
Not revoked	10 (42%)	9 (90%)	1 (10%)
Total	24 (100%)	23 (96%)	1 (4%)
Total percent of cases correctly classified—95.8%			

tremely high predictive ability for regionalized patients: ten variables correctly predicted 100 percent of the regionalized patients who were revoked and only incorrectly predicted one false positive. Overall, for the regionalized patients, the following ten variables correctly classified 95.8 percent of the patients: 1) prior functioning (−6.1), 2) assessment of improvement at CTPHC (5.8), 3) marital status (5.1), 4) severity rating of the instant offense (−3.6), 5) race (2.8), 6) adjustment at CTPHC (2.4), 7) assessment of improvement at time of regional discharge (1.7), 8) GAF score at CTPHC discharge (−1.7), 9) GAF score at regional discharge (1.4), and 10) adjustment at regional hospital (−.9).

The model did not predict the revocation of the nonregionalized patients who remained at CTPHC nearly as well as the regionalized group: it correctly classified 76.9 percent of the patients who were revoked and incorrectly picked six patients (26.1%) as false positives. Overall, it correctly classified 75 percent of the nonregionalized patients with the following four variables 1) race (1.7), 2) functioning before the instant offense (−1.6), 3) adjustment at CTPHC (−1.2), and 4) birth order (.8).

Table 6 summarizes all of the predictor variables in rank order (with unstandardized canonical correlations) for each of the four dependent outcome variables. It shows that a total of 16 variables appear throughout each of the discriminant analyses. These variables will be used in a prediction equation that produces a classification score to be used to assess each patient's risk level at the time of discharge.

Summary and Conclusions

In comparing the two groups, it was evident that the regionalized group was more severely ill, had been in treatment longer, was more dysfunctional, and was rearrested for more serious crimes. While the hospital stay for the regionalized patients is approximately one year longer, they do not fare as well after release and have significantly higher rates of revocation.

In all cases, the prediction model more accurately predicted the outcome of regionalized patients than patients who were not regionalized. The independent variables associated with successful outcome after release differed somewhat between the regionalized and nonregionalized cohorts. Many of the variables in the original prediction model based on CTPHC NCRs dropped out of the discriminant analyses for regionalized patients. For example, the model predicted 100 percent accurately which regionalized patients would be rearrested on the basis of age, GAF score at regional discharge, and clinical assessment at regional discharge. This is very different from the variables that are traditionally associated with criminality that were found in the model on nonregionalized patients (i.e., severity of instant offense, number of prior arrests) and earlier tests of the model conducted on parolees.[13] These findings reinforce the conclusion that the regionalized NCR patients are more chronically mentally ill and less functional than

Table 6
Summary of Predictor Variables

	CTPHC NCRs (N = 36)	Regionalized NCRs (N = 24)
Predicting functioning		
Occupation	(1) −2.4*	NS
Marital status	(2) 1.6	(4) 1.7
Race	(3) −1.0	(1) 4.3
Hospital assessment	(4) .8	NS
GAF score at discharge	(5) .7	(6) −1.2
GAF score at regional	NA	(5) 1.5
Hospital adjustment	NS	(7) .8
Prior functioning	NS	(2) −3.8
Prior hospitalizations	NS	(3) −1.8
Predicting rearrest		
Heroin addiction	(1) 1.4	NS
Severity of instant offense	(2) −1.3	NS
Hospital adjustment	(3) 1.2	NS
Number of prior arrests	(4) .9	NS
Age	(5) .6	(1) −1.9
GAF score at regional discharge	NS	(2) 1.6
Hospital assessment at regional	NA	(3) 1.3
Predicting rehospitalization		
Occupation	(1) 2.8	NS
Prior functioning	(2) 2.3	NS
Age	(3) .8	(2) 1.6
Hospital adjustment	NS	(1) 2.3
GAF at regional discharge	NA	(3) −1.6
Hospital assessment at regional	NA	(4) −.9
Predicting revocation		
Race	(1) 1.7	(5) 2.8
Prior functioning	(2) −1.6	(1) −6.1
Adjustment at CTPHC	(3) −1.2	(6) 2.4
Birth order	(4) .8	NS
Hospital assessment at CTP	NS	(2) 5.8
Marital status	NS	(3) 5.1
Severity of instant offense	NS	(4) −3.6
Hospital assessment at regional	NA	(7) 1.7
GAF at CTP discharge	NS	(8) −1.7
GAF at regional discharge	NS	(9) 1.4
Adjustment at regional	NA	(10) −.9

* Scores are unstandardized canonical correlations; number in parentheses is the rank order for each group. NS = not significant; NA = not applicable for that group.

those patients the hospital retains for continued treatment until discharge.

The variables that become predictive within the model are more heavily oriented toward the functioning and behavior of the patient, both before and during hospitalization, rather than the patient's diagnosis. This occurs in this study despite significant differences in diagnosis between these two groups (the regional group was more populated with schizophrenics). This is consistent with the axiom that the best predictor of future behavior is past behavior, and that di-

agnosis has little to do with a patient's violence.

The decision to transfer patients to regional hospitals has traditionally been made on the basis of expected chronicity, lack of need for maximum security, and inappropriateness for work release. These patients, however, do much worse in outcome than patients released directly from CTPHC who have typically been considered to be more "dangerous." The effects of differences in treatment and clinical environment between the regional hospitals and CTPHC may have been important factors but were not considered in this article and will be examined in future research.

The ability to identify high risk patients is an important step in guiding aftercare policy decisions. Predicting outcome success and failure by using variables available at the time of discharge is a critical adjunct to clinical judgment. With scarce treatment resources and high costs associated with rehospitalization, rearrest, and revocation, it is important to identify patients at risk for poor outcome. In Maryland, "regionalization" itself is an indicator of high risk. Plans are now underway in Maryland to intensify outpatient supervision of high-risk patients. Future research will address whether more intensive supervision improves outcome for these patients.

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