

Rearrest Among Mentally Ill Offenders

Victoria Harris, MD, MPH, and Thomas D. Koepsell MD, MPH

The importance of criminal recidivism among mentally ill offenders lies in resource allocation and community services for the mentally ill. It has been suggested that jails are used, in part, simply to house the mentally ill. The objective of this study is to determine whether mentally ill criminal offenders have higher rates of rearrest than non-mentally ill offenders. A sample of mentally ill offenders ($n = 127$) was drawn at random from all admissions to the psychiatric unit at the King County Jail in Seattle, Washington, in 1990. They were compared with a sample ($n = 127$) of non-mentally ill offenders also jailed in King County during 1990; the two groups were frequency matched on age, gender, and crime at index arrest. Both groups were followed for up to four years or until the next arrest. After 12 months, 54.3 percent of the mentally ill group and 51.2 percent of the non-mentally ill group were rearrested. Using the log rank test in Kaplan-Meier survival analysis, no statistical difference in the relative risk of rearrest occurred for the mentally ill group (relative risk = .84; 95% CI = .84–1.34). Adjustment for housing, marital status, and previous criminal history had little effect on this finding. The presence of substance abuse or psychosis at the index arrest did not affect rearrest significantly. Mentally ill offenders, as a whole, may not be at increased risk for rearrest. However, there may be specific high-risk subgroups that can benefit from early intervention.

The point prevalence for adult American jail detainees was 500,000 as determined by a 1996 census.¹ Although difficult to determine precisely, it is estimated that up to 22 percent of male detainees have an acute mental illness² and up to 80 percent of female detainees have a lifetime prevalence for a major mental illness.³ Mentally ill offenders (MIOs),

therefore, account for up to 150,000 jail detainees and up to 11 million bed days per year.^{2, 4–7}

Arguably a marginalized and disenfranchised group, MIOs are thought to be high utilizers of the criminal justice system.^{8–14} Conventional wisdom strongly suggests that the rate of rearrest for MIOs is much higher than for non-MIOs. Previous studies have found this to be true among insanity acquittees^{15, 16} and other forensic populations.^{10–12, 14} However, studies directly evaluating the relative risk of rearrest of MIOs to non-MIOs could not be found in the literature.

At issue is resource allocation for

Dr. Harris is acting Assistant Professor, Department of Psychiatry, and Dr. Koepsell is Professor and Chair, Department of Epidemiology, University of Washington, Seattle, WA. This work was conducted while Dr. Harris was a Robert Wood Johnson Clinical Scholar; this does not, however, imply endorsement by the Robert Wood Johnson Foundation. Address correspondence to: Victoria Harris, MD, 901 Boren, Suite 1100, Seattle, WA 98104.

MIOs. Baseline recidivism rates are needed prior to program interventions such as jail diversion programs.^{17, 18} Comparative (to non-MIO) rearrest information may allow identification of subgroups of MIOs who then might receive additional services. Finally, such a comparative study would allow one to estimate an "effect size" that a program would need, to show an improvement in rearrest rates.¹⁹

In light of these needs, this study extended the results of a pilot study that focused on the rearrest of MIOs compared with non-MIOs.²⁰ Misdemeanants and felons released from a county jail in Seattle, WA, were followed for up to four years or until their next rearrest within the same county jail. Results were used to calculate a sample size for the main study reported here.²⁰

Answers to the following questions were sought in this study: How does the rate of misdemeanor and felony rearrest for MIOs compare with that of non-MIOs? Is it possible to describe which mentally ill inmates are more prone to rearrest, on the basis of such factors as substance abuse, domicility, and past criminal history?

Methods

Research Setting The setting has been previously described.²⁰ Briefly, the King County Correctional Facility (KCCF) is classified as a medium-size county jail.¹ It serves as the adult criminal justice detention center for 31 municipal jurisdictions in the metropolitan area of Seattle. Juveniles who have been re-

manded to the adult criminal justice system are also held in the KCCF. There are over 60,000 bookings per year in the facility.

The psychiatric unit within the jail has over 90 beds. Both men and women are housed on the unit, as are both misdemeanants and felons. There are approximately 5,600 admissions to the psychiatric unit per year. In 1990, these admissions involved 1,500 different people.

At arrest, all detainees are triaged for physical and mental illness in the booking area. They are referred for psychiatric evaluation if their behavior is considered bizarre, if they report taking psychotropic medications, or if they report suicidality. Detainees are then interviewed by psychiatric staff using a semistructured mental status exam. Information provided by the detainee is verified by a community provider (if any). All information is recorded in the detainee's medical record.

Study Design A frequency-matched retrospective cohort design was used, comparing criminal recidivism of MIOs compared with that of offenders who did not suffer from a mental illness. Follow-up for each person began on the release date from the first incarceration in the KCCF in 1990. Subjects in both groups were followed, using the Jail Daily Index to determine rearrest within King County, WA, by December 31, 1994.

Study Subjects and Comparison Group The mentally ill group consisted of 127 randomly selected adult detainees who were housed on the psychiatric unit at the KCCF during 1990. Psychiatric illness was determined by a combination of

Rearrest Among Mentally Ill Offenders

information from the structured mental status exam performed by Jail Health Services psychiatric staff and that supplied by the community psychiatric provider (recorded in the medical records). Only those individuals with a major mental illness—as defined by the presence of symptoms consistent with a psychotic or affective disorder and/or the use of psychotropic medications, which would indicate one of these illnesses in remission—were included in the study. Detainees having only a diagnosis of personality disorder or substance abuse were excluded from the study group.

The mentally ill subjects were frequency matched²¹ for severity and type of index crime, gender, and age group with 127 detainees who were incarcerated in the same facility during 1990 but not on the psychiatric unit. The absence of a major psychiatric illness was determined by reviewing the jail medical record.

Data Collection Demographic information, information concerning the index arrest and rearrest, psychiatric information at both the index and rearrest, and previous criminal history were obtained from two sources: the individual's criminal record, which is available for public perusal, and the medical record kept by Jail Health Services at the KCCF. Compliance with community treatment was coded as a dichotomous variable (yes/no), based on combining the information provided by the detainee (self-report) and that from the community provider (where applicable).

The methodology was reviewed and approved by both the Human Subjects Division at the University of Washington

and the Seattle-King County Department of Public Health. Individual consents were not required, as the study was retrospective in nature and interviews were not employed.

Statistical Analysis The χ^2 test was used to determine the statistical significance of differences between the two groups with respect to other demographic variables and rearrest. Survival curves, showing the cumulative percentage of subjects rearrested as a function of time since release from the index arrest, were constructed by the Kaplan-Meier method.^{21, 22} This form of analysis accounts for the variable time of follow-up for each subject and enables comparison of frequency at any time point. The log rank test was used to test the statistical significance of difference in time in the community before rearrest between the two groups.^{21, 22} Cox regression was used to control for the potential confounding factors and to build a risk assessment model of criminal recidivism for the mentally ill group.

Results

Demographic and Background Information On admission to the psychiatric unit, 40 (31.5%) MIO subjects had symptoms consistent with acute psychosis. 39 subjects (30.7%) had an acute mood disorder. Chronic psychotic symptoms were present in 18.1 percent (23) of the MIOs, and chronic mood symptoms were present in 13.4 percent (39) of the subjects.

Table 1 shows the characteristics of the

Table 1
Age, Gender, and Index Crime Type Among 127 MIOs Housed on the Psychiatric Unit of the KCCF in 1990 and 127 non-MIOs Incarcerated in the KCCF in 1990

	Mentally Ill (N = 127) %	Non-Mentally Ill (N = 127) %
Age group		
<20 years	6.3	6.3
21–29 years	41.7	41.7
30–39 years	35.4	35.4
40–49 years	14.2	14.2
>49 years	2.4	2.4
Gender		
Male	84.3	84.3
Female	15.7	15.7
Crime severity		
Misdemeanant	79.5	79.5
Felony	20.5	20.5
Index crime		
Violence	38.8	38.8
Assault	27.6	27.6
Menacing	3.1	3.1
Rape	3.1	3.1
Hit and run	2.4	2.4
Harassment	2.4	2.4
Violation no contact order	0.8	0.8
Obstruction	0.8	0.8
Crimes against property	40.1	40.1
Theft	26.0	26.0
Trespass	10.2	10.2
Property destruction	3.9	3.9
Crimes against society	12.6	12.6
Alcohol	3.9	3.9
Weapons	3.9	3.9
No valid operator's license	2.4	2.4
Drugs	2.4	2.4
Victimless crimes	7.1	7.1
Prostitution	6.3	6.3
Other	0.8	0.8

mentally ill group* used to frequency match the two groups. The matching was successful for the variables of age group, gender, crime severity, and index crime.

Other demographic variables and back-

ground information are shown in Table 2. Statistically significant differences were observed between groups for marital status, domicile, prior misdemeanor arrests, and a history of alcohol abuse. The difference in prior felony arrests for the two groups approached statistical significance ($p = .07$).

* Twenty-seven of these MIOs and 27 of the non-MIOs were included in the previously reported pilot study.²⁰

Rearrest Among Mentally Ill Offenders

Table 2
Background and Descriptive Variables of the 127 MIOs Housed on the Psychiatric Unit of the KCCF in 1990 and of the 127 non-MIOs Incarcerated in the KCCF in 1990

	Mentally Ill (N = 127) %	Non-Mentally Ill (N = 127) %	p Value
Marital status			<0.01
Never married	57.5	26.8	
No current partner ^a	10.2	18.1	
Currently partnered ^b	16.5	42.5	
Unavailable	15.7	12.6	
Employment			0.18
Employed/Self-employed	41.7	37.8	
Unemployed	49.6	58.3	
Unavailable	8.7	3.9	
Domicility			<0.01
Homeless	31.5	16.5	
Has address	60.6	67.7	
Unavailable	7.9	15.7	
Prior misdemeanor arrests			<0.05
None	33.9	26.0	
1 to 4	38.6	33.1	
>4	27.6	40.9	
Prior felony arrests			0.07
None	63.8	59.1	
1 to 2	26.8	18.9	
>2	9.4	22.0	
Drug abuse			0.70
Yes	67.7	65.4	
No	32.3	34.6	
Alcohol abuse			<0.05
Yes	44.9	59.1	
No	55.1	40.9	
Ethnicity			0.49 ^c
Black	28.3	32.3	
White	68.5	62.2	
Asian	0.8	2.4	
Other	2.4	3.1	

^a Widowed, divorced, or separated.

^b Married, gay, or common-law.

^c Using χ^2 two-tailed *p* test for Black, White, and All Other.

Clinical Characteristics of MIOs

Consistency in the diagnosis and the treatment of the MIOs at the index and subsequent arrest was found. At the time of the index arrest, 77 (61%) of the MIOs had a community psychiatric provider; 69 percent of those with a community provider were rearrested. However, at the

index arrest, only 34 (27%) of the MIOs with a community provider were compliant with treatment recommendations. At rearrest, the compliance rate was 11 percent.

Rearrest Information As shown in Table 3, there was no statistically significant difference in the rate of mentally ill and non-mentally ill offenders. MIOs

Table 3
Rearrest Information for Mentally Ill and Non-Mentally Ill Offenders

	Mentally Ill		Non-Mentally Ill		<i>p</i> Value ^a
	<i>n</i>	%	<i>n</i>	%	
Rearrest	87	68.5	88	69.3	0.89
Crime severity					
Misdemeanant	70	55.1	63	49.6	0.17
Felon	17	13.4	25	19.7	0.17
Rearrest crime					
Violence					
Felony	3	2.4	0	0.0	0.72 ^b
Misdemeanor	12	9.4	16	12.6	0.43
Crimes against property					
Felony	8	6.3	11	8.7	0.48
Misdemeanor	25	19.7	14	11.0	<0.05
Crimes against society					
Felony	2	1.6	7	5.5	0.09
Misdemeanor	8	6.3	7	5.5	0.77
Victimless crimes					
Misdemeanor	6	4.7	6	4.7	0.98
Other					
Felony	4	3.1	7	5.5	0.36
Misdemeanor	19	15.0	20	15.7	0.88

^a Probability of whether proportion rearrested for particular crime type shown was significantly different between the mentally ill and non-mentally groups.

^b Fisher's exact two-tailed *p* test.

were found more likely to be rearrested for misdemeanor crimes against property ($p < .05$). There was no statistical difference in for violent crimes between the two groups (misdemeanant crimes, $p = .43$; felony crimes, by Fisher's exact two-tailed test, $p = .72$).

Figure 1 illustrates the Kaplan-Meier survival plots for the two subgroups of mental illness compared with the non-mentally ill group. No statistical difference was observed between the groups for time from release into the community until (log rank = .67). In the Cox regression analysis models shown in Table 4, controlling for alcohol abuse history, marital status, domicility, and previous criminal history yielded little change in

the effect of mental illness on the relative risk of rearrest.

Discussion

This study examined the differences in rearrest rates for mentally ill and non-mentally ill criminal offenders. As suggested in the literature,²²⁻²⁴ it was hypothesized that mentally ill offenders are rearrested more frequently than their non-mentally ill counterparts.

The findings of this study are counter to both conventional wisdom and the current literature. Specifically, rearrest statistics for MIOs were very similar to those for non-MIOs when age, gender, and crime severity of initial arrest were controlled. Furthermore, marital status, do-

Rearrest Among Mentally Ill Offenders

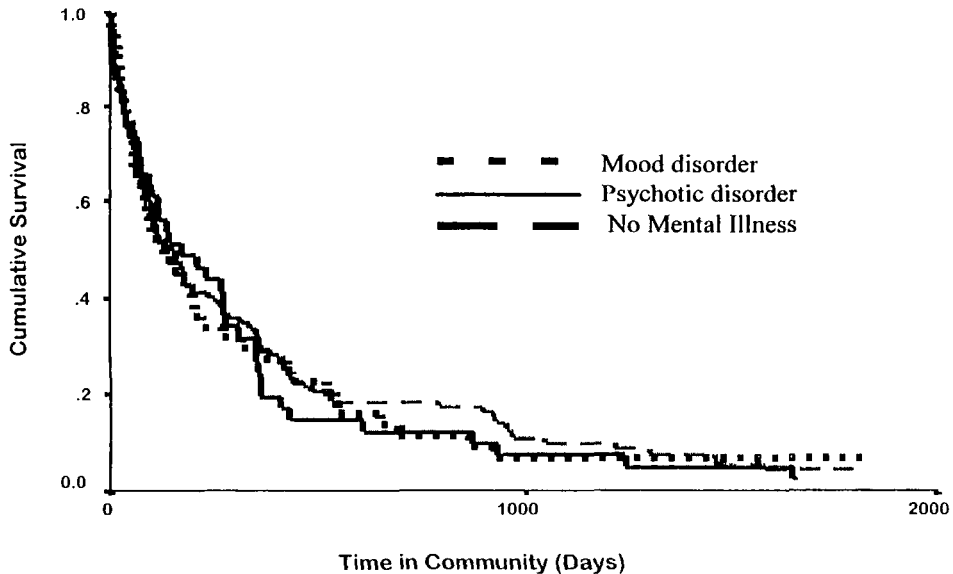


Figure 1. Rearrest of mentally ill offenders and non-mentally ill offenders as a function of time since release from jail.

micity, prior criminal history, and history of alcohol abuse differed between the two groups, but these differences did not importantly confound the findings.

Although this study did not show statistically significant differences between the two groups, the study was limited by

several features inherent in its design. Criminal recidivism, for the purpose of this study, was defined as rearrest. This may have little relationship to actual criminal behavior,¹¹ as only the most serious crimes warrant police intervention and arrest.^{23, 24} This approach may also

Table 4
Cox Regression Analysis: Effect of Mental Illness on Criminal Recidivism After Controlling for Selected Covariates

Model	N	Relative Risk ^a		p Value
		RR	95% CI	
Mental illness + Age + Gender + Crime severity	254	1.05	(0.75, 1.49)	0.77
Mental illness + Age + Gender + Crime severity + Marital status + Housing	218	0.99	(0.63, 1.46)	0.85
Mental illness + Age + Gender + Crime severity + Marital status + Housing + Past criminal history	218	1.18	(0.74, 1.87)	0.48
Mental illness + Age + Gender + Crime severity + Marital status + Housing + Past criminal history + History of alcohol abuse	218	1.10	(0.70, 1.75)	0.67

^a Relative risk (RR) of rearrest among MIOs compared with non-MIOs when potential confounding covariates are added to the model. CI, confidence interval.

represent a systematic bias toward the less severely mentally ill offenders, as floridly psychotic individuals are often diverted directly into the mental health treatment system.^{11, 12, 14, 23, 24}

There are also possible systematic biases inherent in the recognition and diagnosis of mental illness. This is true in the community and particularly true within a correctional facility.^{11, 24, 25} Limiting the study to criminal offenses committed within the KCCF jurisdiction may also reduce the likelihood of finding a difference in rates between mentally ill and non-mentally ill offenders. The relative mobility of one group compared with the other group is unknown, and this also represents a potential systematic (outcome) bias.

Despite these limitations, the study also had some notable strengths. The comparison group was frequency matched to the MIO group on the basis of age, gender, year of arrest, and severity of index crime. These factors, which are known to be strong determinants of recidivism, were therefore controlled in the study design.^{19, 26} To our knowledge, the pilot study for these findings was the first in the literature that has been able to control simultaneously for these factors.²⁰

Although it is possible that the MIOs in this study represent an unusual sample, the background demographics suggest otherwise. The proportion of women was approximately the same as the proportion of women jailed across the United States.¹ The finding that the MIO group contained a larger percentage of Caucasians than non-Caucasians is also consistent with previous findings that racial mi-

norities tend to be streamlined away from mental health care, even within correctional facilities.²⁵ Thus, it is possible that the study group is more broadly representative of MIOs housed on a psychiatric unit of a medium-size county jail.¹

The method of statistical analysis employed in this study may have also contributed to the unexpected findings. Survival analysis assessed the risk of rearrest over time.²² Other reported studies employed techniques that assessed the cumulative risk of rearrest at a particular point in time.^{8, 10, 11, 15, 23, 24, 26} Survival analysis also accommodates variable follow-up periods by each subject. Finally, the use of proportional hazard (Cox) regression allowed the simultaneous effects of multiple covariates on rearrest to be analyzed.^{19, 22, 23}

Although this study did not show a significant difference in recidivism for mentally ill offenders, community treatment programs still need to address the needs of this vulnerable population. Forty percent of the MIOs in this study did not have a community mental health provider at the time of index arrest, despite showing clinical characteristics of a major mental illness. Adherence to the *parens patriae*[†] principle requires that further efforts be undertaken to engage this population in treatment. Although MIOs are difficult to recruit and retain in treatment programs, it is possible that criminal recidivism in this group would decrease if

[†] Translation from the Latin is "father of the country." *Parens patriae* originally referred to the sovereign's power and duty to act in the best interest of his subjects. More liberally, the concept of *parens patriae* underlies society's responsibility to act so as to benefit those who are unable to act responsibly for themselves.²⁷

Rearrest Among Mentally Ill Offenders

its members were engaged in therapeutic modalities.

This study suggests that factors that describe MIOs who are rearrested through a county jail also describe non-MIOs who are rearrested. Rearrest rates for MIOs and non-MIOs appear comparable. However, it still remains feasible that a decrease in the number of rearrests for subpopulations of MIOs may be possible through intervention. From the perspective of this study, it is the lack of psychiatric information on release that precludes further comment.

References

1. Bureau of Justice Statistics Bulletin: Prison and Jail Inmates at Mid-Year, 1996. NCJ-162843. Washington, DC: US Department of Justice, 1997
2. Teplin LA: Psychiatric and substance abuse disorders among male urban jail detainees. *Am J Public Health* 84:290-93, 1994
3. Teplin LA, Abram KM, McClelland GM: Prevalence of psychiatric disorders among incarcerated women. I. Pretrial jail detainees. *Arch Gen Psychiatry* 53:505-12, 1996
4. Teplin LA: The prevalence of severe mental disorder among male urban jail detainees: comparison with the epidemiologic catchment area program. *Am J Public Health* 80:663-9, 1990
5. Teplin LA: Detecting disorder: the treatment of mental illness among jail detainees. *J Consult Clin Psychol* 58:233-6, 1990
6. Abram KM, Teplin LA: Co-occurring disorders among mentally ill jail detainees. *Am Psychol* 46:1036-45, 1991
7. Haddad J: Managing the special needs of mentally ill inmates. *American Jails*. March/April 1993, pp 62-5
8. Draine J, Solomon P, Meyerson A: Predictors of reincarceration among patients who received psychiatric services in jail. *Hosp Community Psychiatry* 45:163-7, 1994
9. Morrissey JP, Levine IS: Researchers discuss latest findings, examine needs of homeless mentally ill persons. *Hosp Community Psychiatry* 38:811-12, 1987
10. Pogrebin MR, Poole ED: Deinstitutionalization and increased arrest rates among the mentally disordered. *J Psychiatry Law* 15:117-27, 1987
11. Teplin LA: Criminalization of mental disorder: the comparative arrest rate of the mentally ill. *Am Psychol* 39:794-803, 1984
12. Whitmore GE: From hospitals to jails: the fate of California's deinstitutionalized mentally ill. *Am J Orthopsychiatry* 50:65-75, 1980
13. Abramsom J: The criminalization of mentally disordered behavior: possible side effects of a new mental health law. *Hosp Community Psychiatry* 23:101-5, 1972
14. Teplin LA: Criminalization of mental disorder: speculation in search of data. *Psychol Bull* 94:54-67, 1983
15. Silver SB, Cohen MI, Spodak MK: Follow-up after release of insanity offenders and convicted felons. *Bull Am Acad Psychiatry Law* 17:387-400, 1989
16. Pasewark RA, Bieber S, Bosten KJ: Criminal recidivism among insanity acquittees. *Int J Law Psychiatry* 5:356-64, 1982
17. Steadman HJ, Steadman BS, Dennis DL: A national survey of jail diversion programs for mentally ill detainees. *Hosp Community Psychiatry* 45:1109-13, 1994
18. Steadman HJ, Morris SM, Dennis DL: The diversion of mentally ill persons from jails to community-based services: a profile of programs. *Am J Public Health* 85:1630-35, 1995
19. Hulley SB, Cummings SR (editors): *Designing Clinical Research*. Baltimore: Williams and Wilkins, 1988
20. Harris V, Koepsell TD: Criminal recidivism among mentally ill offenders: a pilot study. *Bull Am Acad Psychiatry Law* 22:177-86, 1996
21. Anderson S, Auqueir A, Haulk WW, Oakes D, Vandaele W, Weisberg HI: *Statistical Methods for Comparative Studies: Techniques for Bias Reduction*. New York: Wiley, 1980
22. Katz MH, Hauck WW: Proportional hazards (Cox) regression. *J Gen Intern Med* 8:702-11, 1993
23. Wessely S, Taylor PJ: Madness and crime: criminology versus psychiatry. *Crim Behav Ment Health* 1:193-228, 1991
24. Monahan J, Steadman H: *Crime and mental illness: an epidemiological approach, in Crime and Justice (vol 4)*. Edited by Morris N, Tondry M. Chicago: University of Chicago Press, 1983, pp 145-89
25. Grekin PM, Jemelka R, Trupin E: Racial differences in the criminalization of the mentally ill. *Bull Am Acad Psychiatry Law* 22:411-20, 1994

26. Durbin JR, Pasewark RA, Albers D: Criminality and mental illness: a study of arrest rates in a rural state. *Am J Psychiatry* 134:80-83, 1977
27. Schwartz HI: Informed consent and competency, in *Principles and Practice of Forensic Psychiatry*. Edited by Rosner R. New York: Chapman & Hall, 1994