The Effects of a Jail Diversion Program on Incarceration: A Retrospective Cohort Study

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The objective of this retrospective cohort study was to determine whether a jail diversion program significantly reduced the number of days of incarceration over the year following arrest in a sample of seriously mentally ill (SMI) people who had been arrested for a minor crime. Methods: A group of 314 SMI detainees were diverted out of jail and into mental health treatment. They were compared with a sample of 124 people who would have been eligible for diversion but were not diverted. For each group, the authors compared the total days incarcerated in the year after index arrest. Analyses indicated that jail diversion significantly reduced incarceration time during the next year (40.51 versus 172.84 days, $p = .0001$). However, the effect of diversion differed depending upon the level of criminal charge: diversion significantly reduced jail time only among those who were arrested for more serious offenses. Those arrested for Class D felony and Class A misdemeanor charges and diverted into mental health treatment spent significantly less time in jail in the next year than those not diverted (260 and 110 fewer days, respectively; $p = .0001$ for both). Those arrested for Class B or C misdemeanors had similar days incarcerated regardless of diversion. These results remained after adjusting for age, race, gender, and diagnosis. This study presents the first evidence that jail diversion may produce positive longitudinal criminal justice outcomes for SMI people. It also suggests that diversion may not reduce incarceration in all sub-groups of SMI people who are arrested for minor crimes.

There has been increasing public concern about the criminalization of mental illness[1,2] and the replacement of treatment with incarceration.[3,4] Data from the Epi-

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demiologic Catchment Areas Study's incarcerated sample indicated that the rate of lifetime mental disorder was two to three times higher than in the general population.[5] More recently, Teplin[6] estimated that of the 10.1 million jail admissions per year in the United States, about 6.6 percent were of people with a serious mental illness (SMI). Torrey and colleagues[7] examined the rates of incarceration among people with SMI over time and found that the proportion of inmates

with SMI was higher in 1992 than it had been 10 years earlier, particularly in larger urban jails.

Incarceration can be a traumatic experience for any prisoner, but it can be particularly difficult for people with SMI. Torrey and colleagues[7] found that incarcerated people with SMI were less likely than other inmates to have been officially charged with a crime and were thus frequently held without charges.[7] In addition, they found that SMI detainees were more likely to be abused by other prisoners while in jail and were more likely to refuse medication while in jail, increasing the risk of more severe psychiatric symptoms.[7] Incarceration can also isolate people with SMI from already fragile community supports, reducing the likelihood of future community mental health treatment and increasing the risk of homelessness.[8]

With deinstitionalization and the fragmentation of community mental health services, people with SMI frequently come into contact with police for minor crimes and are held in jail because the police perceive there to be no adequate alternative.[4, 6, 7, 9, 10] It has been repeatedly documented that people with SMI are rarely violent.[6, 10–12] Instead, they are often arrested for minor crimes related to their lack of community supports (e.g., disturbing the peace or exhibiting bizarre behavior in public) or lack of housing, food, and medical care (e.g., vagrancy, shoplifting, panhandling, etc.).[10] Police, whose primary interest is maintaining public safety, find themselves dealing with serious psychiatric and psychosocial problems that they are ill equipped to recognize, understand, or handle, and they resort to arrest and incarceration because they perceive no alternatives.[4] To compound the problem, some community mental health providers are unwilling to accept patients with a criminal record because they are among the more difficult patients to treat.[13]

Jail Diversion

Jail diversion programs are organized interagency efforts to identify detainees who have SMI and establish mental health treatment programs that meet their needs in the least restrictive environment. Jail diversion programs are not widespread, despite enthusiastic political support. Steadman and colleagues[3] estimate that only 52 such programs exist in the country. They are primarily staffed by mental health workers who (1) screen detainees for SMI; (2) provide emergency mental health treatment as needed; (3) do formal mental health evaluations of those who screen positive; and (4) negotiate with prosecutors, defense attorneys, courts, and community mental health providers. The goal of this negotiation process is to develop a comprehensive mental health disposition outside of the jail, either in lieu of prosecution, or as a condition of reduction in charges, or at least to transfer defendants into treatment while they are awaiting trial. These dispositions usually occur when the charge is for a relatively minor crime. It should be noted that release to a forensic institution for evaluation of competency or for restoration following a finding of incompetence to stand trial does *not* constitute a jail diversion program. In addition, diver-

sion programs vary in their specific goals beyond a reduction in jail time.

Although diversion programs are appealing in concept, there have been few studies of the effectiveness of such programs. One study, conducted by Steadman and colleagues,[3] surveyed the directors of diversion programs about their attitudes towards diversion and the perceived effectiveness of the programs. Of the directors surveyed, 30 percent reported that the program was somewhat effective, 35 percent reported moderate effectiveness, and 35 percent reported that the program was very effective. One of the reasons given for reduced effectiveness was a perception that diverted inmates had high recidivism rates. A second study conducted by Lamb and colleagues[14] compared SMI detainees who received court-mandated mental health treatment with a group that were released to treatment but were not ordered to attend. They reported significantly more positive clinical outcomes when treatment was court-ordered.

This current study presents data on the effectiveness of a recently established jail diversion program in a mid-size New England city at reducing incarceration time. The diversion program has operated since 1994 and is under the direction of the local community mental health center. A psychiatric nurse clinician is placed in the city court house during regular business hours and undertakes screening and negotiation as described above. This study compares total incarceration days in the year after an index arrest between a group of SMI people who were diverted out of jail after arrest and a group who would

have been eligible for diversion but were not diverted.

Methods

Study Design   The study design is a retrospective cohort with two groups. The first group consists of all of those unique SMI individuals who were successfully diverted out of jail and into mental health treatment between December 1994 and March 1997. The comparison group consisted of those people who were not diverted over the same time period but who would have been eligible for diversion. We followed each member of both groups for one year to record their total days of incarceration during that time period.

Sample   To be eligible for diversion, the following conditions must be met. First, the individual must be suffering from a serious mental illness. SMI was considered positive if (1) the clinical evaluation of the court clinician was positive or (2) the subject had a lifetime history of treatment at the community mental health center for an Axis I non-substance abuse disorder. Administrative databases from the state mental health system were used to identify diagnosis and treatment history before arrest.

Second, the individual had to have been arrested for a "minor" crime, defined as a Class D felony or a Class A, B, or C misdemeanor. Class D felonies and Class A misdemeanors are the most serious of this class of crimes and include such charges as the least serious burglary, assault, and criminal mischief (Class D felonies), as well as the least serious criminal trespassing, threatening, and prostitution charges (Class A misdemeanors).

Identification of the diversion group was accomplished through abstraction of the treatment logs for the jail diversion program. The sample was unduplicated by taking data only from the first diversion on record, since a single individual could have been diverted more than once in this time period.

Identification of the comparison group was accomplished by comparing the docket records for the local court with the state mental health administrative databases and including all individuals who were arraigned for a minor crime and who had a treatment history at a state facility for a mental illness but who were not enrolled in the diversion program, most often because diversion staff were not available. The first arrest in the time period was used as the marker for addition into the study, since individuals could have been arrested more than once.

Outcome Measure   The primary outcome of interest in this study was days incarcerated in the year (365 days) after index arrest. We measured days incarcerated using a combination of administrative data sources. First, city jail records were used to determine the length of time incarcerated awaiting trial or hearings, for example. Second, if an individual was sent to a forensic institution for assessment or for restoration of competency, these days were counted as incarceration days (legally, days in a forensic facility count as jail time). Finally, court databases were consulted to determine the disposition of cases and sentences. Using all these sources of data, we calculated the number of days spent incarcerated in jail, prison, or a forensic institution over

the 365 days from the time of the index arrest.

We chose to use days incarcerated as the outcome of interest, as opposed to days until re-arrest, for several reasons. First, the longer an individual is incarcerated, the less time he has in which to be re-arrested. Using re-arrest rates as an outcome may produce paradoxical results, since those persons with longer incarcerations will have the lowest re-arrest rates. Second, total days incarcerated allows us to observe the total follow-up period instead of truncating data at the first new "episode." This approach gives us a better picture of the long-term effects of the diversion program than using "time to first re-arrest."

Independent Variables   The primary independent variable of interest was whether the individual had been diverted. Other independent variables of interest included the level of charge, diagnosis, and sociodemographic characteristics. The level of charge was determined using docket records, which are a matter of public record. Diagnosis was determined through the state mental health agency's administrative databases. Individuals were categorized into two categories: having an Axis I disorder alone; or being dually diagnosed with a psychiatric disorder and a substance abuse disorder. Sociodemographic data were derived from the community mental health center administrative databases and included age, race, and gender.

Analysis   Data analysis proceeded in several steps. First, we compared the diverted and non-diverted group on all variables to see whether there was a system-

Table 1
Characteristics of a Sample of Diverted and Non-Diverted Mental Health Patients (n = 438)

Variable	Diverted		Non-Diverted		p
	n	%, Mean	n	%, Mean	
Gender					
Male	229	72.93	92	75.41	.598
Female	84	27.07	30	24.59	
Race					
White	97	30.99	48	38.71	.007
Black	180	57.51	76	61.29	
Hispanic	29	9.27	0	0	
Other	7	2.24	0	0	
Diagnosis					
Substance abuse only	74	25.34	54	43.55	.001
Dual diagnosis	218	74.66	70	56.45	
Charge					
Felony D	138	43.95	28	22.58	.001
Misdemeanor A	122	38.85	19	15.32	
Misdemeanor B	28	9.00	21	16.94	
Misdemeanor C	26	8.00	56	45.20	
Age in years	314	33.86	124	35.69	.0704

atic bias between the groups. Second, we compared the unadjusted days incarcerated for the diverted and non-diverted group. Third, we built multivariate models that predicted days incarcerated for the diverted and non-diverted group, controlling for sociodemographics, diagnosis and level of charge.

Because of the non-normal distribution of the outcome (days incarcerated), multivariate models were fit under a Poisson distribution assumption, which has been shown to be a more robust model for predicting count data than normal linear models.[15] Models were fit in SAS using the GENMOD procedure.

Results There were 314 unique individuals enrolled in the diversion program between December 1994 and March 1997 and 124 individuals identified who were eligible for diversion but were not di-

verted during the same time period. Table 1 compares sociodemographic characteristics, diagnoses, and charges across these two groups. As can be seen from the table, there were no significant differences between the groups on gender or age. However, there were significant differences between the groups on diagnosis and charge. More members of the diverted group were dually diagnosed (75% of the diverted group compared with 56% of the non-diverted group), and a higher proportion of diverted subjects were arrested for felony or Class A misdemeanors (83%) than in the non-diverted group (38%).

The second step in the analytical plan was to test the unadjusted relationship between diversion and days incarcerated. The diverted group had on average 40.51 days in jail during the year following

Table 2
Poisson Regression Models Predicting Days Incarcerated in the Year After Diversion or Index Arrest

Variable[a]	Parameter Estimate[b]	S.E.	Relative Risk	χ^2	p
Female	0.50	0.17	1.65	9.55	.002
Race (ref: other)					
White	−0.76	0.84	0.47	3.01	0.6986
Black	−0.75	0.84	0.47		
Hispanic	−0.58	0.89	0.56		
Age (centered at 35)	0.01	0.01	1.01	0.39	0.5327
Diagnosis (ref: psych only)					
Dual diagnosis	0.03	0.13	1.03	0.04	0.8431
Diversion* charge (ref: non-diverted Mis C)					
Diverted					
Felony	−0.18	0.26	0.84	50.79	.0001
Mis A	−0.55	0.28	0.58		
Mis B	−0.28	0.40	0.76		
Mis C	0.39	0.33	1.48		
Non-diverted					
Felony	2.17	0.22	8.76		
Mis A	1.16	0.28	3.19		
Mis B	0.39	0.33	1.48		

[a] ref, reference category; Mis, misdemeanor.
[b] Parameter estimates represent the ratio of the log of the proportion of the year spent in jail (no. of days/365) between the reported group and the reference.

arrest, while the non-diversion group had an average of 172.84 days incarcerated (*t* test, $p = .0001$).

Table 2 shows the final result of multivariate modeling to adjust for differences between groups in diagnosis and charge. The final model included a significant effect of gender on the days incarcerated, with females having longer periods of incarcerations than men ($p = .002$). It also indicates a significant interaction between diversion and charge. That is, the effect of diversion on days incarcerated depended on the initial charge ($p = .0001$). There were no significant effects of race, age, or diagnosis on the number of days incarcerated in the next year.

Table 3 presents the predicted days incarcerated for the diverted and non-diverted groups, stratified by initial charge and controlling for all other variables. As can be seen, the effect of jail diversion was only significant among those who had been arrested for either Class D felonies ($p = .0001$) or Class A misdemeanors ($p = .0001$), the most serious of the crimes eligible for diversion. Among those arrested for Class D felonies, the number of days incarcerated was reduced an average of 260 days (86%), while among those arrested for Class A misdemeanors the number of days incarcerated was reduced by an average of 110 days (79%). Among those who had committed lesser offenses, the days incarcerated

Table 3
Mean Lengths of Incarceration in the Year After Start of Study, by Level of Charge and
Court Diversion Status

Charge	Diverted		Not Diverted		F	df	p
	n	Days in jail	n	Days in jail			
Felony Class D	138	43.73	28	303.37	196.86	1,390	0.0001
Misdemeanor A	122	29.15	19	139.56	36.14	1,390	0.0001
Misdemeanor B	28	33.75	21	74.32	2.45	1,390	0.1185
Misdemeanor C	26	77.78	56	50.80	1.41	1,390	0.2363

were not different between the diverted and non-diverted group.

Discussion

Overview These results present evidence that jail diversion effectively reduces length of incarceration among detainees with SMI. However, these results also suggest that diversion may not be equally effective for all sub-groups of SMI people who have been arrested for a minor crime. Specifically, diversion may reduce jail time only among those who have been arrested for more serious minor crimes.

Limitations Before discussing these results further, several limitations of these data should be acknowledged. First, the diverted and non-diverted groups were not randomly assigned. As indicated by the bivariate comparisons of groups, the two groups are significantly different from each other. For example, the diversion group had a higher proportion of detainees who had committed more serious crimes. This imbalance could reflect a process that has been anecdotally reported from the diversion program whereby SMI detainees charged with more serious crimes are held, through a

court continuance, until diversion services are available, thus making them less likely to be in the non-diverted group.

A second limitation is that the diverted and non-diverted groups were evaluated for eligibility in our study somewhat differently. Those who were diverted were individually evaluated by a trained forensic clinician in order to plan appropriate mental health treatment. The non-diverted group, however, was determined by the authors to be eligible for diversion on the basis of evidence of past mental health treatment in the state system. We have partially adjusted for severity by adjusting for dual diagnosis. However, there may be additional unmeasured differences in the severity of illness between the groups. For example, although refusal of diversion services by a detainee is rare, we do not know that all those in the non-diversion group would have agreed to the program.

Implications Despite these limitations, these results concerning the significant association between diversion and incarceration are promising. There are two mechanisms by which jail diversion programs may longitudinally reduce jail time. First, entrance into mental health

treatment, which in some cases is court-mandated to encourage compliance, may improve clinical outcomes in such a way as to reduce the risk of later arrests. Treatment at the community mental health center is concerned not only with providing acute psychiatric and substance abuse care but also with assisting SMI people to obtain stable housing and entitlements and to rebuild community support structures. Even modest improvements in these areas may lower the chance of re-arrest. For example, stabilization of medication may reduce violent behavior that stems from psychosis; housing and entitlements may reduce the likelihood of being arrested for loitering, trespassing, and shoplifting; and a comprehensive mental health treatment program may help to build community supports that would reduce the likelihood of deviant behavior such as disturbing the peace.

The second mechanism by which diversion may reduce jail time is to drastically reduce the need for restoration of competence. If an individual is arrested for a jailable offense but is found, through a competency hearing, to be unfit to stand trial, the person is committed to a forensic psychiatric institution for restoration of competence for a period of time which may not exceed the maximum sentence for the alleged crime. Restoration is considered complete when the person is determined capable of participating in his or her own defense. Therefore, mental health treatment in such institutions is not comprehensive, but it is concentrated on a very narrow goal. Lengths of stay in such institutions can be long, and trials or case disposition hearings are postponed until the patient is released. People remanded for restoration are thus at higher risk for serving maximum sentences without the benefit of a trial. Diversion drastically reduces the need for restorations by completely removing individuals from the criminal justice system and transferring them to the mental health system.

Sub-Groups of Diversion Clients It is particularly interesting that the differences in outcomes were seen in these data only among those who had been arrested for more serious crimes. There are several possible explanations of why the diversion program would be less effective among certain sub-groups of people with SMI. First, there may be a "floor effect" for incarceration times among those who are charged with less serious crimes. That is, those who are charged with less serious crimes, whether diverted or not, are more likely to be released or spend limited time in jail in the normal course of the justice system, which would reduce the likelihood that diversion would substantially reduce incarceration among people who are even repeatedly arrested for very minor crimes.

Second, those who were arrested for the more serious of the minor crimes may have been suffering from more acute psychiatric symptoms that could be more effectively treated with medication. As an example, consider two arrestees, one who is arrested for assault and the other for loitering. The assault may be due to acutely psychotic symptoms that may be relatively easy to stabilize with medication. On the other hand, the person arrested for loitering may be homeless or suffering from substance abuse, both

problems that are notably more difficult to treat.

Another possible explanation for these differences is that those who were arrested for the more serious of the minor crimes may be more likely to be placed in court-mandated mental health treatment as opposed to recommended, but not mandated, mental health treatment. At least one study has found that patients in court-mandated treatment have better outcomes than those who were placed in mental health treatment but not *required* to attend.[14] If this is a generalizable finding, it may explain differences in jail time across level of charge.

Policy Implications One important consideration in the development of diversion programs is the issue of cost and savings to both the criminal justice and mental health systems. Substantial cost savings may be realized in the criminal justice system by reducing re-arrests, court time, restorations, and trials for people with serious mental illnesses. However, this court diversion implies a necessary shift of responsibility for SMI people to the mental health system, which may have difficulty caring for this population. Wolff[13] has described the forces that impede the efforts of diversion programs, listing three key elements that impair coordination of mental health and criminal justice systems: (1) intra-agency disorganization and fragmentation, (2) lack of coordinated information exchange between agencies, and (3) financial pressure to shift difficult clients to the other system.

The data presented here address only one side of the important outcomes of interest to diversion programs, namely incarceration. It appears that by effectively shifting these SMI people back to the mental health system, the criminal justice system can save resources for attending to more serious criminal behavior that more directly threatens public safety. However, it is not clear how diversion affects the mental health system, for several reasons. First, diversion patients may be more difficult to manage than the average patient, suffering from more severe symptoms, more antisocial behavior, and poorer functioning than other patients who have not been in contact with the criminal justice system. They may thus require more institutional resources, including those needed to ensure or report on compliance with court-mandated treatment. Second, diversion programs rarely have dedicated funds and are more frequently assembled from existing staff and resources. Finally, it is not known whether clinical outcomes are improved by diverting SMI patients into mental health treatment, particularly those patients with a dual diagnosis.

Conclusions Prisoners and arrestees with SMI are a growing concern for both the criminal justice and mental health systems. The justice system is taxed by crowded courts, jails, and prisons, but it cannot refuse "access" to any person. The mental health system is taxed by staffing and budget reductions, as well as by the need to treat the largest number of eligible clients with existing funds. However, of the two systems, the mental health system has the greater opportunity to improve outcomes in people with SMI who get arrested by providing needed treat-

ment and preventing potentially harmful incarcerations.

Further studies are needed to determine: (1) whether diversion programs improve clinical outcomes; (2) what aspects of diversion programs, clinical as well as judicial, are the most important in improving outcomes; and (3) the total societal cost impact of diversion programs, considering both reduced criminal justice costs and potentially increased mental health system costs. To date there are no available data on these questions, which would be best addressed by a controlled trial measuring clinical as well as judicial outcomes. Political support for diversion programs is unlikely to flourish in the absence of data on their effectiveness at reducing the societal cost of SMI people who get arrested.

References

1. Butterfield F: Prisons replace hospitals for the nation's mentally ill. New York Times, March 5, 1998, p 1
2. Hoffman BF: The criminalization of the mentally ill. Can J Psychiatry 35:166–9, 1990
3. Steadman HJ, Barbera SS, Dennis DL: A national survey of jail diversion programs for mentally ill detainees. Hosp Community Psychiatry 45:1109–13, 1994
4. Torrey EF: Out of the Shadows: Confronting America's Mental Health Crisis. New York: John Wiley and Sons, 1997
5. Robins LN, Locke BZ, Regier DA: An overview of psychiatric disorders in America, in Psychiatric Disorders in America. Edited by Robins LN, Locke BZ, Regier DA. New York: Free Press, 1991, pp 328–66
6. Teplin LA: Criminalizing mental disorder: comparative arrest rates of the mentally ill. Am Psychol 39:794–803, 1984
7. Torrey EF, Steiber J, Ezekiel J, *et al*: Criminalizing the Seriously Mentally Ill: The Abuse of Jails as Mental Hospitals. Washington, DC: Public Citizen's Health Research Group and National Alliance for the Mentally Ill, 1992
8. O'Flaherty B: Making Room: The Economics of Homelessness. Cambridge, MA: Harvard University Press, 1996
9. Teplin LA: The criminalization of the mentally ill: speculation in search of data. Psychol Bull 198:34–67, 1983
10. Teplin LA, Pruett NS: Police as streetcorner psychiatrist: managing the mentally ill. Int J Law Psychiatry 15:139–56, 1992
11. Abramson MF: The criminalization of mentally disordered behavior. Hosp Community Psychology 23:101–7, 1972
12. DiCataldo F, Greer A, Profit WE: Screening prison inmates for mental disorder: an examination of the relationship between mental disorder and prison adjustment. Bull Am Acad Psychiatry Law 23:573–85, 1995
13. Wolff N: Interactions between mental health and law enforcement systems: problems and prospects for cooperation. J Health Politics Policy Law 23:133–74, 1998
14. Lamb HR, Weinberger LE, Reston-Parham C: Court intervention to address the mental health needs of mentally ill offenders. Psychiatr Serv 47:275–81, 1996
15. Kleinbaum DG, Kupper LL, Muller KE. Poisson regression analysis, in Applied Regression Analysis and Other Multivariable Methods. Belmont, CA: Duxbury Press, 1988, pp 497–512