

The Criminal Justice Outcomes of Jail Diversion Programs for Persons With Mental Illness: A Review of the Evidence

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Diversion programs are initiatives in which persons with serious mental illness who are involved with the criminal justice system are redirected from traditional criminal justice pathways to the mental health and substance abuse treatment systems. This article is a review of the research literature conducted to determine whether the current evidence supports the use of diversion initiatives to reduce recidivism and to reduce incarceration among adults with serious mental illness with justice involvement. A structured literature search identified 21 publications or research papers for review that examined the criminal justice outcomes of various diversion models. The review revealed little evidence of the effectiveness of jail diversion in reducing recidivism among persons with serious mental illness. However, evidence was found that jail diversion initiatives can reduce the amount of jail time that persons with mental illness serve. Implications for practice and research are discussed.

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Jail diversion initiatives have garnered much interest as a strategy for reducing the presence of persons with mental illness in the criminal justice system. Mental health diversion programs provide treatment-based alternatives to criminal sanctions for persons with serious mental illness who have come into conflict with the law.¹ There is a wide range of diversion models in operation across jurisdictions such as Australia, Canada, the United Kingdom, and the United States.² Although they vary in their structure and procedures and operate from different juncture points within the criminal justice process, all have at their core the idea that persons with severe mental illness should be handled through the mental health system rather than the criminal justice system.³ These initiatives operate on the premise that individ-

uals with mental illness who come into conflict with the criminal justice system do so because of illness and therefore require treatment rather than criminal sanctions.^{3,4} It is believed that linking the mentally ill accused and offenders to community-based treatment services will have the effect of reducing police contact and the likelihood of criminal recidivism.⁵ Concomitantly, shifting the locus of intervention to community-based mental health treatment services may also provide potential benefits for crowded jails that lack facilities to treat this population adequately, as well as for overburdened courts.⁶

There is an emerging body of empirical literature describing the testing of the effectiveness of diversion programs for persons with serious mental illness. The purpose of this review is to examine whether the current evidence supports the use of diversion initiatives to reduce recidivism and to reduce incarceration among adults with serious mental illness, including those with co-occurring substance abuse disorders, involved with the criminal justice system.

Jail diversion initiatives have arisen as a result of concern that people with serious mental illness are grossly overrepresented in the criminal justice and correctional systems. Estimates of the prevalence of

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serious mental illness among jail inmates and prisoners within the United States vary between 6 and 18 percent, depending on the methodology, setting, and precise definition of serious mental illness.⁷⁻⁹ Prevalence rates are estimated to be two to five times higher than in the general population.^{8,10} Comparable prevalence rates (5-10%) were also found among jail detainees and inmates of penitentiaries in Canada.^{11,12} In addition to prevalence rates, data on length of incarceration within U.S. jurisdictions indicate that individuals with serious mental illness serve a disproportionate amount of time in jail and prison compared with individuals without mental illness who receive similar convictions.¹³ The likelihood of arrest also appears to be substantial among persons with serious mental illness. Studies within the United States have found that between 28 and 52 percent of persons with severe mental illness have been arrested at least once.¹⁴⁻¹⁶

Typology of Diversion Initiatives

In an effort to reduce the number of persons with mental illness within the criminal justice and correctional systems, many diversion models have been developed. These interventions span the continuum of the criminal justice system but may be broadly organized under two categories: prebooking (or precharge) diversion programs and postbooking diversion programs. Prebooking programs involve diversion before the laying of a criminal charge. That is, the individual who is engaging in conduct that could constitute a criminal offense is not charged with an offense but rather is diverted into mental health treatment without further criminal justice involvement. In contrast, postbooking programs involve diversion after an individual has been arrested and booked into jail or charged with a criminal offense.¹⁷ There are several models under each of these broad categories of diversion programs. Although presented in this article as distinct archetypes, in practice these models may be blended together within a comprehensive multimodal diversion scheme.

Prebooking Diversion Models

In prebooking or precharge diversion initiatives, police exercise discretion to determine the necessity of arrest and the appropriateness of diversion and link the potential arrestee to mental health services in lieu of laying charges. Teplin¹⁸ found that officers'

decisions to hospitalize, arrest, or deal with a mentally ill person informally were based less on the degree of symptomatology than on the demands and constraints of the situation. The use of arrest was found to be influenced by the limited number of psychiatric beds in the community, the stringent criteria for hospital admission, the reluctance of hospitals to take intoxicated mentally ill persons, and officers' estimation of the likelihood that the person would continue to cause a problem if no action were taken. Prebooking and precharge programs are intended to afford officers an alternative to criminal arrest when dealing with persons with mental illness who are the subject of a police call. Deane and colleagues¹⁹ identified three specialized strategies used by police to respond to persons in psychiatric crisis.¹⁹ The first are police-based specialized response programs, often referred to as Police Crisis Intervention Teams (CITs). In this model, police officers who have received specialized training respond to mental health crisis calls and act as liaisons to the mental health system. The second are police-based specialized mental health response programs. With this strategy, mental health professionals are hired by police departments to provide on-site and telephone consultation to officers in the field. The third involves mental-health-based specialized mental health response programs, which are traditional mental health mobile crisis teams. The teams are part of the local mental health service system and have developed special relationships with police departments to respond to police requests for assistance in situations involving mental health crises.

In addition to these models, Schneider and colleagues² have identified three additional precharge diversion models: joint police/mental health teams, specialized reception centers, and joint protocol initiatives. Joint police/mental health teams are composed of a mental health crisis worker and a plainclothes police officer. The crisis worker undertakes mental health assessments, while the police officer can effect an apprehension pursuant to civil mental health legislation and transport individuals in psychiatric crisis to a hospital when civil commitment is required. When civil commitment criteria are not met, the team attempts to steer the subject of the police call to community care services in lieu of criminal arrest for behavior that could constitute low-level criminal offenses. Reception center models involve specialized crisis response sites where police

officers can take an individual in psychiatric crisis requiring psychiatric assessment and immediately return to their regular patrol duties. These reception centers are secure facilities that have the legal authority to take custody of persons in crisis and can provide assessment, mental health treatment, and referral to outpatient community mental health and addiction services. Detoxification services are frequently located on site. Operating 24 hours a day, these one-stop service centers are thought to promote diversion by providing an expeditious alternative to transporting individuals in crisis to an emergency department where officers may have to wait long periods to have an individual assessed and may face refusals to admit individuals because of unmet criteria for civil commitment.²⁰ Finally, joint protocol initiatives represent a generic category of prebooking diversion initiatives for models in which mental health service providers and the police mutually develop common operating procedures that enable police officers to connect an individual with a mental health agency, in lieu of laying a charge.

Postbooking Diversion Models

Lattimore and colleagues¹ identified three models of postbooking diversion programs: jail-based diversion, court-based diversion, and specialized mental health courts. Jail-based postbooking diversion programs are typically operated by pretrial service personnel or specialized jail personnel who identify, assess, and divert mentally ill detainees from custody to community-based mental health treatment with the consent of the prosecutor, judge, and defense lawyer. Jail liaisons undertake mental health assessments of detainees and develop a treatment plan for individuals in cooperation with jail mental health staff and community-based mental health service providers. By comparison, court-based postbooking diversion programs employ mental health clinicians who work within the courthouse. They screen the arraignment lists for known clients and receive additional referrals from court staff. They conduct assessments and, in negotiations with the prosecutor, defense, and judge, develop a treatment plan to secure a bail release of the mentally ill accused person. Typically cases are continued for a brief period to ensure that the patient is linked and adhering to the necessary treatment services before charges are withdrawn. Alternatively, an accused person may be convicted and receive probation with special treatment conditions rather than a

custodial sentence. Diversion occurs in multiple courts before multiple judges. That is, there is not a dedicated docket for persons with mental illness. In contrast, mental health courts are diversion initiatives in which the diversion process occurs in one specialized court. The judge, prosecutor, defense lawyer, and other court staff may have specialized training in working with persons with serious mental illness and will often work collaboratively, in conjunction with mental health court liaison staff, to link the accused to treatment and supports. These courts mandate community-based mental health treatment and monitor participants' treatment adherence, using both praise and sanctions to encourage treatment compliance. Moreover, the promise of dismissed charges or the avoidance of incarceration is used as an incentive to participate in treatment. However, enrollment in the mental health court is voluntary.

Although they share several common features, mental health courts vary considerably in their operation.^{2,21} They differ on the type of charges that they accept (misdemeanor versus felony versus a combination), on the type of community supervision that they employ (community treatment providers monitoring treatment adherence and reporting back to the court versus probation officers or court personnel monitoring compliance), and on the type of dispositions that they entertain (dismissal of charges, guilty plea but deferred sentence, or conviction with probation in lieu of a jail sentence). The courts also vary in the duration of court supervision of treatment and in the frequency of status review hearings of treatment progress. Finally, they vary in the use of sanctions for noncompliance with treatment conditions. Sanctions may include returning the person to court for hearings, admonishments, imposition of stricter treatment conditions, and reincarceration.

Role of Forensic Psychiatry

Irrespective of the configuration of the diversion model(s) adopted, psychiatry plays an instrumental role in the operation of diversion programs. Psychiatrists working from emergency departments often receive individuals from prebooking/precharge diversion programs. By comparison, psychiatrists working from detention centers assist in the identification of individuals referred to jail diversion initiatives, providing diagnostic information and treatment recommendations to program staff. In

addition, within some jurisdictions, psychiatrists are called on to provide an opinion to the court or prosecutor about an individual's suitability for diversion, undertaking an informal quasi-psycholegal assessment of the diversion candidate. Accordingly, the efficacy of diversion initiatives is a salient topic for psychiatrists working at the interface of the mental health and criminal justice systems.

Methods

As an increasing number of persons with mental illness have come into contact with criminal justice systems, there has also been increasing concern over the potential for criminalization of this population. This confluence has inspired a wide variety of programs designed to take both an individual's need for treatment and society's need for safety into account. Unfortunately, the wide diversity and many permutations of these programs and the lack of scientific rigor with which results of some of these programs are reported do not lend themselves to using evidence-based medicine to guide future policy in this area. This review was undertaken to examine available empirical studies to find those with the best evidence in examining the effectiveness of different jail diversion models. Specifically, it explores the following questions: Do jail diversion initiatives for adults with serious mental illness reduce criminal recidivism? Do such initiatives reduce time spent in custody by these adults?

Study Selection Criteria

The review included any empirical study that met the following criteria. First, the studies had to evaluate a jail diversion program for adults with serious mental illness, including individuals with co-occurring substance abuse disorders. Studies evaluating diversion initiatives targeting youth were not included.

Second, the studies had to have a comparison group design (i.e., experimental or controlled observational). The comparison group was not restricted to a no-treatment control; studies that contained comparisons with other interventions or an augmented treatment group (i.e., any additional component added to a diversion intervention) were included. Studies with single-group, pre-post research designs were not included. Although there are threats to external and internal validity in all research designs evaluating intervention outcomes, single-group, pre-post research (pre-experimental) designs are consid-

ered a weak source of evidence from which to draw causal inferences within the evidence-based medicine literature^{22,23} and the program evaluation literature.^{24,25} Studies using a comparison group design are regarded as necessary, although not always sufficient, to draw moderately strong inferences about the treatment effects of an intervention.^{22,26}

Third, studies had to provide a measure of recidivism, as indexed by rearrest, in terms of either prevalence (i.e., percentage of individuals in the treatment and control groups rearrested) or incidence (i.e., mean number of arrests per group). Alternatively, studies were included if they provided a measure of the effect of diversion on a reduction of custodial time for the index offense. In addition to published studies, gray literature (i.e., those not formally published) such as the following types of material were also sought: reports (preliminary and advanced reports, technical reports, and statistical reports produced by government, academia, and associations) theses, conference proceedings, bulletins, fact sheets, position papers, and other official documents not normally subject to editorial control or peer review.

Search Strategy

Several strategies were used to recover the relevant research literature. First, a standardized search of abstracts was performed in the Cochrane Database of Systematic Reviews, American College of Physicians (ACP) Journal Club, Database of Abstracts of Reviews of Effectiveness (DARE), Cochrane Controlled Trials Register (CCTR), Evidence-Based Mental Health, MEDLINE (1966–2007), PubMed, PsycINFO, InfoNet, Criminal Justice Abstracts, National Criminal Justice Reference Service (NCJRS), Social Work Abstracts, and ProQuest Digital Dissertations. The search involved the following keywords: prearrest (also pre-arrest) diversion, precharge (also pre-charge) diversion, prebooking (also pre-booking) diversion, police diversion, postbooking (also post-booking) diversion, jail diversion, court diversion, mental health diversion, and mental health court. A subsequent search involved the intersection of the keyword diversion with the keywords mental disorder and mental illness. Second, bibliographies of relevant studies were reviewed to locate items that had not been identified in previous database searches. Third, to recover the gray literature, a range of relevant Internet sites were

Table 1 Levels of Evidence for Treatment Efficacy

1a	Systematic review of random controlled trials (RCTs)
1b	Individual RCT with narrow confidence interval
1c	All or none
2a	Systematic review of cohort studies
2b	Individual cohort study (including low quality RCT; e.g., <80% follow-up)*
2c	"Outcomes" research; ecological studies
3a	Systematic review of case-control studies
3b	Individual case-control study
4	Case-series (and poor-quality cohort and case-control studies†)
5	Expert opinion without explicit critical appraisal, or based on physiology, bench research, or first principles

Adapted from the Oxford Centre for Evidence-Based Medicine.³²

*Quasi-experimental design (i.e. non-equivalent comparison group studies) match cohort studies and therefore meet level 2b evidence.³³

†Poor-quality cohort study refers to cohort studies that did not clearly define comparison groups and/or did not measure exposures and outcomes in the same way in both exposed and nonexposed individuals, did not identify or appropriately control known confounders, and failed to carry out a sufficiently long and complete follow-up of patients.

searched including the Criminal Justice/Mental Health Consensus Project, the Bazelon Centre for Mental Health Law, the National Institute of Corrections, the Bureau of Justice Assistance, the National Gains Center, and the Substance Abuse and Mental Health Services Administration (SAMHSA). Finally, published reviews of jail diversion programs^{27–29} and databases of references culled for two comprehensive reviews of the diversion literature, commissioned by the Ministry of Health and Long-Term Care in Ontario, were searched for studies on jail diversion initiatives that included arrest or incarceration rates.^{30,31}

Data Extraction and Synthesis

A structured abstraction instrument was developed to extract data from the included studies. Extracted data consisted of intervention type, study design, cohort size for treatment versus comparison groups, measurement methods, and key findings. A qualitative format was used to summarize the existing research, as many studies did not provide the necessary information to calculate mean difference effect size or number needed to treat (NNT). In an evaluation of the potential contribution of individual studies in addressing the questions posed in this review, the levels of evidence for investigating treatment efficacy recommended by the Oxford Centre for Evidence-Based Medicine (Table 1) were used.³² Although the research design nomenclature used

within this evidence hierarchy for medicine may not directly apply to the research designs used within each of the studies cited in this review, it nevertheless provides a useful framework for our understanding of the evidence related to jail diversion. The evidence highest in the hierarchy was accorded the greatest weight in drawing conclusions about the criminal justice outcomes of jail diversion programs. In accordance with the study selection criteria specified in the table, only Level 3 evidence (i.e., case control studies) or higher was used to inform the conclusions of this review. Research designs not utilizing a comparison group, such as one-group pretest-posttest studies, have been rated as a step up from case series studies but are weighted less than case-control studies on the continuum of levels of evidence.²³ As such, they were not included in this review. Quasi-experimental designs (i.e., nonequivalent comparison group studies) match cohort studies and were therefore rated as Level 2b evidence.³³

Results

The standardized literature search identified 27 articles or research papers that met inclusion criteria for review. Of the 27 articles and papers, three were excluded because they involved studies in which the comparison group received the same diversion intervention as the treatment group.^{34–36} Another was excluded because it incorporated into the sample subjects with diagnosed substance abuse disorders but no co-occurring serious mental illness.³⁷ Another was excluded because it did not differentiate between the diversion group and comparison group when reporting recidivism outcomes.³⁸ A sixth was excluded because it involved a comparison of redirection rates between two types of diversion models.³ For the purpose of this review, redirection rates are too crude an indicator of recidivism, as they do not include individuals who have recidivated but have not returned to the diversion program.

Study characteristics are shown in Table 2. Multiple citations are listed in the first column of the table if two or more research papers using the same data set were referenced. The second column lists the total number of sites involved in the study, if multiple sites were used, followed in parentheses by the total sample size for all sites within each treatment and control group. The displayed sample size represents the number of participants used in statistical analyses of criminal justice outcomes. The control

Criminal Justice Outcomes of Jail Diversion

Table 2 Jail Diversion Programs

Investigators	No. of Groups, Diversion Type (Total Sample Size for All Groups)	Research Design	Follow-up Months	Rearrest Prevalence	Rearrest Incidence	Jail Time for Index Offense
Prebooking diversion						
Gratton <i>et al.</i> ³⁹	1 PBD (55); 1 TAU (116)	QED	12	NR	0	NR
Steadman <i>et al.</i> ⁴⁰	3 PBD (300)	Retrospective Cohort	0	NR	NR	+
Jail-based diversion						
Shafer <i>et al.</i> ⁴¹ ; Lattimore <i>et al.</i> ¹	2 JBD (124); 2 TAU (78)	QED	12	0	0	NR
Court-based diversion						
Steadman <i>et al.</i> ⁴²	1 CBD (35); TAU (45)	QED	2	0	NR	+
Hoff <i>et al.</i> ³⁷	1 CBD (314); 1 TAU (124)	Retrospective Cohort	12	NR	NR	+
Rowe <i>et al.</i> ⁴⁴	1 CBD +PS* (73); 1 CBD (41)	RCT	12	NR	0	NR
Frisman <i>et al.</i> ⁴⁵	7 CBD (113); 5 TAU (98)	QED	12	0	NR	+
McNiell and Binder ⁴⁶	1 MHC (170); 1 TAU (8067)	Retrospective cohort	At least 6	+	NR	NR
Trupin <i>et al.</i> ⁴⁷ ; Trupin and Richards ⁴⁸	2 MHC (96); 2 TAU (128)	QED	At least 9	–	0	0
Moore and Hiday ⁴⁹	1 MHC (82); 1 TAU (183)	Retrospective cohort	12	0	+	NR
Moore ⁵⁰						
Christy <i>et al.</i> ⁵¹	1 MHC (116); 1 TAU (101)	QED matched pairs	12	0	0	+
Cosden <i>et al.</i> ^{52–54}	1 MHC+ACT† (137); 1 TAU (98)	RCT	24	NR	–	0
Neiswender ⁵⁵	1 MHC (114); 1 TAU (80)	Retrospective cohort	24	NR	NR	+
Cross-model and pooled comparisons						
Broner <i>et al.</i> ⁵⁶	1 JBD (77); 1 CBD (35); 1 TAU (119)	QED	12	NR	0	+
Broner <i>et al.</i> ⁵⁷ ; Lattimore <i>et al.</i> ¹	3 PBD; 3 JBD; 1 CBD; 1 MHC; 8 TAU (NR)	QED	12	NR	0	+
Steadman and Naples ⁵⁸	3 PBD+1 JBD+2 CBD+1 MHC+6 TAU = (1185)	QED	12	NR	0	NR
Aos <i>et al.</i> ²⁶	3 PBD+3 JBD+2 CBD+3 MHC = (1243) 11 TAU (NR)	Meta-analysis	12–24	NR	0	NR

+, Statistically significant difference in criminal justice outcome was reported in favor of a treatment intervention relative to control/comparison condition; 0, no statistically significant difference between treatment and comparison/control conditions; –, statistically significant difference in criminal justice outcome in favor of the control/comparison condition relative to the intervention condition; NR, not reported.

*PS, peer support program.

†ACT, assertive community treatment program.

condition is listed as TAU (treatment as usual) if it involved standard criminal justice processing. The experimental condition is listed as PBD (prebooking diversion), JBD (jail-based diversion), CBD (court-based diversion), or MHC (mental health court). The third column notes the type of research design: RCT (random controlled trial), QED (quasi-experimental design; i.e., nonequivalent comparison group), retrospective cohort study, or meta-analysis. The fourth column notes the follow-up period of the study. The next three columns list criminal justice outcomes. A four-point rating system adapted from Loveland and Boyle²⁹ was used to score criminal justice outcomes within each study. The scoring system included the following ratings:

A + indicates that the diversion intervention (i.e., experimental group) affected the criminal justice outcome in the expected direction (i.e., criminal justice involvement decreased) compared with the control condition,

0 indicates that no difference was found between conditions on criminal justice outcomes,

– denotes higher rates of criminal justice involvement in the experimental condition relative to the control condition, and

NR indicates that the relevant criminal justice outcome was not reported.

The rating for criminal justice outcomes was based on the reported statistical test of significance. The broadest crime outcome measure and the longest follow-up were used in examining incidence and prevalence rates of recidivism. For example, some studies presented several types of crime-related outcomes, such as total arrest, total convictions, total violent arrests, total technical (i.e., bail or probation) violations, total misdemeanors, total felonies, and so on. In these situations, the broadest crime outcome measure, which was usually total arrests, was used. In addition, when a study presented outcomes with var-

ious follow-up periods, the results for the longest follow-up period were used in the analysis. Different diversion models were separately analyzed, and then cross-model and pooled comparisons were examined.

Prebooking Diversion

Two publications were found that evaluated individual prebooking diversion programs. One³⁹ used data from the Jail Diversion Knowledge Development Application Initiative (KDA), a four-year, eight-site study of various jail diversion models across the United States.⁵ This multisite research initiative employed a quasi-experimental nonequivalent comparison group design with eight treatment and eight TAU conditions and a 12-month follow-up period. Gratton and colleagues³⁹ used data from one of the research sites to compare individuals diverted to a prebooking diversion program that combined a CIT model and a 24-hour community-based mental health crisis center for individuals arrested and held in jail. They found no significant difference in the self-reported incidence of recidivism at a 12 month follow-up. Steadman and colleagues⁴⁰ compared the relative effectiveness of three different prebooking models: police-based specialized police response (CIT), police-based specialized mental health response, and a mental-health-based specialized mental health response (mobile crisis team).⁴⁰ They found that the police-based specialized police response was used more frequently by frontline officers and resulted in fewer arrests than did the mental health-based specialized mental health response, which in turn performed more favorably than the police-based specialized mental health response. The difference in outcomes was posited to be related to the limited staff resources of the police-based specialized mental health response.

Overall, the available Level 2b evidence supports the use of prebooking programs to reduce the amount of time that mentally ill persons spend in custody with greatest support for a police-based specialized police response model; however, the existing evidence does not support the use of prebooking programs to prevent recidivism in this population. Further research is needed, given the paucity of evidence.

Jail-Based Diversion

In one study, data from the KDA project were used to examine the effectiveness of jail-based diver-

sion by comparing individuals diverted by two jail-based diversion programs in two different communities to nondiverted detainees in the same communities.⁴¹ Individuals who were diverted showed no significant differences in their overall rearrest rates, which were lower for both diverted and nondiverted subjects at 12 months. However, the diverted group had lower rates of rearrest for low level misdemeanor crimes relative to the nondiverted group. Thus, Level 2b evidence indicated no overall reduction in the subsequent criminal activity of individuals receiving jail-based diversion relative to their nondiverted counterparts, but very tentative evidence of an interaction effect showing that jail-based diversion may reduce the incidence of arrest among low-level misdemeanants. However, caution must be used in drawing conclusions about jail-based diversion initiatives, given the sparse evidence. Further research is needed in this area, as well.

Court-Based Diversion

Four studies were found in which court-based diversion initiatives were evaluated. Steadman and colleagues⁴² compared rearrest prevalence among a group of diverted individuals and nondiverted detainees with serious mental illness after two months and found that the difference in rearrest rate was not significant between groups; however, one third of the nondiverted group remained in custody at the two-month follow-up. In like manner, Hoff and colleagues⁴³ used a retrospective cohort design to compare the total incarceration days in the year after an index arrest between a group of persons with serious mental illness who were diverted from jail after arrest and a group of those who would have been eligible for diversion but were not diverted. Jail diversion significantly reduced incarceration time (40.51 days vs. 172 days). However, *post hoc* analyses found that diversion significantly reduced jail time only among those charged with the more serious offenses. A floor effect was posited for individuals charged with the less serious offenses, as they may be more likely to be released or to spend limited time in jail in the normal course of the criminal justice process; therefore, the likelihood of diversion's reducing jail time would be substantially reduced.⁴³ A third study used a randomized controlled trial to compare two diversion interventions: court-based diversion that included a community-based group intervention with citizenship training and peer support against jail diversion

with standard clinical treatment.⁴⁴ The experimental condition posted a small to moderate effect ($d = 0.324$) over the control condition in lower incidence of rearrest, but this difference was not significant. The sample size, however, may not have been large enough to provide sufficient power to detect a statistically significant difference between the treatment conditions. Finally, Frisman and colleagues⁴⁵ used data from the KDA project to examine the effectiveness of court-based diversion by propensity scoring to compare outcomes of subjects from seven courts with court-based diversion with subjects from five courts with no diversion programs.⁴⁵ No difference was found in the prevalence of rearrest between treatment and comparison conditions. In addition, no difference was found between the diverted and comparison groups in analyses of time to rearrest; however, a significant difference in the time elapsed until the first reincarceration was found (odds ratio (OR) = 1.98, $p < .05$), with the diversion group having a longer average time until reincarceration ($M = 161.60$ days, $SD = 4.68$), relative to the comparison group (149.86 days, $SD = 6.61$). The diversion group also spent significantly fewer days ($M = 59.89$, $SD = 103.66$) incarcerated in the year following the index arrest than did the comparison group ($M = 131.10$, $SD = 136.89$).

Existing Level 2b evidence supports the use of court-based diversion to reduce the length and prevalence of incarceration among persons with serious mental illness; however, there is as yet no evidence to suggest that this diversion model serves to reduce the incidence or prevalence of recidivism in this group.

Mental Health Courts

Six studies were located in which the criminal justice outcomes of mental health courts was evaluated. Of the six, four reported on the prevalence rates of recidivism. One study, with a retrospective observational design and propensity-weighted regression analyses used to attenuate the biasing effects of non-random assignment, found a 26 percent reduction in the probability of a new charge among mental health court participants relative to nonparticipants.⁴⁶ Another study, with a prospective quasi-experimental design that compared subjects who opted into a mental health court with those who opted out, found an increase in the prevalence of recidivism among the opt-in group.^{47,48} The remaining two studies, a retrospective cohort study and a pre-post with compar-

ison group study, found no difference between participants and nonparticipants in the prevalence rates of recidivism.⁴⁹⁻⁵¹ Four studies also compared the incidence of recidivism between mental health court participants and control subjects. One study, with a retrospective cohort design, found that participation in the mental health court significantly reduced the incidence of recidivism.^{49,50} Study results however should be interpreted with caution, as individuals in the comparison group were selected by a court judge who believed the individuals met the diagnostic criteria for admission to the court, but it was not known for certain whether comparison group members had a diagnosable mental illness or what the diagnosis was. Another study with an RCT design compared a mental health court that used an assertive community treatment approach of case management with treatment as usual, consisting of traditional adversarial criminal processing and less intensive case management, and found a small but significant increase in the incidence of recidivism among mental health court clients relative to individuals receiving treatment as usual.⁵²⁻⁵⁴ The reported increase in incidence in recidivism among mental health court subjects was interpreted to be the result of an inability to differentiate bookings that occurred as a result of sanctions for program noncompliance or probation violation and bookings that occurred as a result of new criminal activity. The two remaining studies, both employing quasi-experimental pretest-posttest designs, found no significant difference between mental health court participants and individuals receiving treatment as usual.^{47,48,51} Four of the six studies reported accrued jail time. Two studies, a retrospective cohort study⁵⁵ and a pretest-posttest comparison group study,⁵¹ found a decrease in the number of jail days served by mental health court participants relative to individuals who received treatment as usual. The remaining two studies, a pretest-posttest group comparison^{47,48} study and an RCT, found no change in the number of jail days across groups.⁵²⁻⁵⁴

The mixed findings in these studies may be a product of variance in the use of jail by different mental health courts to sanction treatment noncompliance. The as yet unmeasured potential mediating effect of the therapeutic use of jail by some mental health courts prevents drawing conclusions about the impact of mental health courts on new criminal activity or jail time.

Cross-Model and Pooled Comparisons

Four publications were found that either assessed the effectiveness of two or more different diversion models (e.g., prebooking, jail-based diversion, court-based diversion) or pooled data across models to test the overall effect of diversion on criminal justice outcomes. Using a quasi-experimental design, Broner and colleagues⁵⁶ examined the effect of two diversion models: a court-based program that mandated clients to treatment and a jail-based program that linked clients to treatment but did not mandate and monitor treatment adherence. Individuals in mandated diversion (court-based) were less likely to spend time in prison than were those in the comparison groups (12 vs. 60 vs. 96 mean days for mandated (CBD), nonmandated (JBD) and TAU conditions, respectively). No significant difference was reported on recidivism incidence when diversion conditions were separately compared with the TAU condition.

Another two publications presented data from the eight-site KDA study to examine the effects of prebooking programs, jail-based diversion programs, a court-based diversion program, and a specialized court. Lattimore *et al.*¹ and Broner and colleagues⁵⁷ found no statistically significant difference in the prevalence and incidence of arrest across models relative to TAU, with one exception. One prebooking program that incorporated a CIT response and a 24-hour community-based mental health crisis center had a nearly fivefold increase in arrests at the 12-month follow-up. Across programs, diverted participants were less likely to spend time in jail during a 3-month follow-up period than were nondiverted participants (10 days vs. 28 days). In addition, diverted participants had more days at risk (i.e., days not institutionalized in a hospital, jail, or residential setting) over a 3-month reference period at the 12-month follow-up (52 days vs. 68 days).⁵⁷ Steadman and Naples⁵⁸ used data from six of the eight sites to compare the pooled effects of three prebooking and three postbooking programs (jail-based, court-based, and specialized court). They found no statistically significant difference in the incidence of arrest between the pooled prebooking groups and the pooled postbooking groups or between a pooled diversion group (i.e., prebooking and postbooking) and those who underwent treatment as usual.

Finally, 35 types of adult offender interventions were investigated in a meta-analysis to examine which interventions lowered criminal recidivism

rates. Aos and colleagues²⁶ identified 11 evaluations of prebooking and postbooking jail diversion programs that met their selection criteria. They found no reduction in the recidivism rates of program participants ($d = 0.08, p = .141$; downward adjusted to 0.00 for methodological quality of the evidence, homogeneity test $p = .682$).

Overall, Level 2a evidence suggests that diversion programs in general do not reduce recidivism among persons with mental illness. In addition, Level 2b evidence suggests that the diversion initiatives, as a broad category of interventions targeting persons with serious mental illness, reduce time spent in custody by adults with serious mental illness. Tentative evidence suggests that court-based diversion programs that mandate treatment adherence serve to reduce the amount of jail time that the mentally ill accused serve relative to treatment as usual or to jail-based diversion programs that do not mandate and monitor treatment compliance. Further study is needed to verify this finding.

Discussion

The results of this review are mixed regarding the effect of diversion initiatives on reducing recidivism and incarceration among persons with serious mental illness. The review revealed little evidence of the effectiveness of jail diversion in reducing recidivism among persons with serious mental illness. All but one study failed to find evidence that diversion initiatives reduce the prevalence of recidivism.⁴⁶ Similarly, only one study found evidence that jail diversion reduces the incidence of recidivism.^{49,50} Both of these studies used retrospective cohort designs. The latter study was not able to confirm the presence of a serious mental illness among control subjects, thus raising doubt about the comparability of the treatment and control groups. However, evidence was found that jail diversion initiatives can reduce the amount of jail time that persons with mental illness serve.

The pioneering studies presented in this review represent a significant contribution to the empirical literature. However, the inferences drawn in this review are qualified by several methodological limitations found in the research. First, only two studies used random allocation of treatment and control conditions. Consequently, selection bias is a significant concern. Some studies compared groups that were selected through the criminal justice process

(i.e., individuals accepted versus declined for diversion) and others relied on self-selection. Such selection is inherently problematic as it tends to favor the treatment group over the control group.⁵⁹ Second, a few studies did not adjust for key prognostic covariates such as criminal history, diagnosis, and the presence of a substance abuse problem. Third, several studies had attrition rates of greater than 20 percent or did not use an intent-to-treat analysis, thereby compromising the validity of findings. Finally, several of the studies had a small sample size that could have resulted in inadequate statistical power to detect positive or negative effects.

These methodological limitations, however, are not likely to compromise the conclusions of this review significantly, in relation to recidivism rates. Apart from the small sample size, which could bias toward underdetection (Type I error), the limitations noted are likely to bias the conclusions in favor of the treatment condition (Type II error); yet, despite this bias, existing evidence does not support a positive effect of diversion on recidivism. The methodological deficiencies, however, may limit the validity of the findings of this review as they relate to the effect of diversion on incarceration time.

Implications for Practice and Research

Clinicians should use caution in applying the findings of this review. The studies reviewed were from the United States. The findings therefore, are based on that population and focus on the U.S. justice and health systems. Thus, they may not be generalizable to other countries. In addition, given the organizational and structural differences that exist across diversion programs and across local health systems within U.S. jurisdictions, the findings of this review may not generalize to the broader population of diversion programs in all U.S. jurisdictions. Nonetheless, based on the results of this review, provisional but empirically tenable conclusions may be drawn about the effect of diversion on recidivism and incarceration. First, the results suggest that jail diversion programs, irrespective of type, have little impact on recidivism. As a consequence, clinicians providing opinions to the courts about the risk of recidivism that a diversion client poses should not overemphasize the role of the diversion process *per se* in reducing recidivism. Second, the results suggest that prebooking and court-based programs have a discernable impact on reducing the amount of time that mentally ill

accused persons spend in custody. Thus, clinicians concerned about the impact of jail on the well-being of their patients ought to consider supporting their patients' participation in these programs. Evidence of the effectiveness of specialized court models in reducing incarceration time, however, is equivocal. The effect of specialized courts on jail time may be affected by the extent to which courts use jail as a sanction for noncompliance with treatment.

The limitations of this review highlight the need for future research. For example, researchers may seek to clarify how contextual factors, such as the characteristics of the mental health and criminal justice systems in which diversion programs operate, influence their outcomes.⁵⁸ Specifically, the availability of treatment services for mental illness and substance abuse as well as the availability of supportive housing, employment, and medical coverage within local jurisdictions should be considered as should the extent to which study subjects access available support. Similarly, studies should include controls for the availability of treatment resources within jails as well as the existence of informal arrangements between jails and community mental health services and the extent to which these custodial and community resources are accessed by comparison/control subjects participating in jail diversion outcome studies. Further research may test whether particular characteristics such as severity of drug use and symptomatology, psychopathy, insight, and motivation for treatment are predictive of criminal justice outcomes, in attempting to determine who is helped by diversion. Broner and colleagues⁵⁶ have begun important research in this area. The use of risk assessment instruments such as the HCR-20⁶⁰ or the LSI-R (Level of Service Inventory-Revised)⁶¹ may also serve to identify subgroups for whom diversion initiatives may have benefit. The HCR-20 may be utilized at service initiation by diversion programs that work with individuals charged with violent offenses, to assess an individual's risk of future violence. For example, individuals charged with moderately serious violent offenses with low scores on the historical scale and low to moderate scores on the clinical and risk-management scales of the HCR-20 may have a low likelihood of violent reoffense with adequate treatment and support. Moreover, the instrument could be used to inform specific elements of a treatment plan that could significantly mitigate any such risk. In like manner, the LSI-R, an assessment of

the risk of general recidivism, may be useful to inform similar decisions for individuals charged with nonviolent offenses. Randomized controlled trials are needed to minimize the effects of selection bias and to consolidate findings, though they are often difficult to implement in a criminal justice environment. An alternative, although less preferred, approach is to use matched-pairs designs to compare individuals from separate jurisdictions with similar health systems in which one system employs a diversion intervention and the other does not. Pairs should be matched on the characteristics that diversion programs use to determine suitability for program admission: type of disorder, symptomatology, criminal behavior (past and present), and motivation/willingness to participate in (supervised) treatment.⁵⁹ In addition, research may explore what structural or procedural characteristics within diversion programs lead to better outcomes. Moreover, future research exploring recidivism should seek to separate arrests and jail time related to procedural violations or sanctions for treatment noncompliance from arrests resulting from new criminal activity. This approach would provide information about whether arrests after entry into diversion programs are a function of increased supervision and efforts to encourage treatment compliance or are a product of continued criminal conduct. Finally, while this review explored the criminal justice outcomes of diversion initiatives for persons with serious mental illness, a future review may examine the clinical effects of these programs on patients' health and quality of life.

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