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Mental Health Treatment and Criminal Justice Outcomes

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1. Mental Health Policy as Part of Criminal Justice Policy: A Framework

Abundant evidence associates mental illness and crime.

"Deinstitutionalization" of mental illness has coincided with build up of criminal justice facilities. Jails and prisons now house and care poorly for thousands of mentally ill offenders.

Would more mental health treatment reduce crime and costs of criminal justice?

Sufficient conditions for this to be so would be if:

1. mental illness caused crime, and
2. mental health treatment reduced mental illness

Some of our review of the evidence will be organized according to simple logic above.

Mental health treatment might also reduce crime even if it has no impact on mental illness. Some other evidence studies the direct connection between mental health treatment and crime (mental illness may not be a mediator).

The paper is organized as follows. In Section 2 we discuss the evidence on the association and causal relationship between mental illness and crime. Section 3 is broadly concerned with the effect of mental health treatment as "prevention," meant in the sense of treating children and adults who have not committed crimes. We investigate the evidence for any favorable effect of mental health treatment on subsequent criminal justice contact in the case of children with conduct disorder, and adults receiving Supplemental Security Income support. Section 4 is concerned with targeting mental health treatment to criminals who are also mentally ill. A large range of programs are designed for this population – mental health courts, specialty probation programs, mandatory outpatient treatment, forensic-oriented community treatments, among others. We review the evidence on costs and effects of these programs.

A salient aspect of our review will be the nature of any mechanism of effect. Is the way a program like a mental health court "works" through its effect on mental illness? In other words, to what degree is the mechanism of effect that mental health treatment reduces illness and less illness reduces crime? What are other ways to interpret findings? What are the implications for designing cost-effective programs for mentally ill offenders?

Our overall purpose is to assess the cost effectiveness of expanding various forms of mental health treatment based on favorable effects on crime and criminal justice.

2. The Overlap between Mental Illness and Criminal Behavior

1) Mental Illness and Crime in Community Populations

   a. A number of studies have identified a positive association between mental illness and crime.
      i. Australia: patients with schizophrenia more likely to have been convicted of a criminal offense than matched controls without schizophrenia (21.6% versus 7.8%). (Wallace, Mullen & Burgess, 2004)
      ii. Sweden: men with major mental disorders 2.5 times more likely than men without a mental disorder to be registered for a criminal offense; women with major mental disorders 5 times more likely to be registered for a criminal offense than women with no disorder. (Hodgins 1992)
      iii. Switzerland: men with schizophrenia were 2.5 times more likely to commit property crimes and 2.8 times more likely to violate drug laws than matched controls without schizophrenia; men with schizophrenia also began their criminal careers at a significantly younger age than convicted controls, and had significantly higher rates of criminal recidivism than convicted controls. (Modestin & Ammann, 1996)

   b. Using the 2007 National Survey of Drug Use and Health (NSDUH), which asks individual respondents to self-report any mental disorders or criminal activity, significant overlaps between mentally ill and criminal populations were found.
      i. Figure 1: Overlap between Ever Having Been Arrested and Symptoms of Conduct Disorder (Youths)
      ii. Figure 2: Overlap between Ever Having Been Arrested and Severe Psychological Distress in the Past Year (Adults)
      iii. In the adult population, when we narrow our focus to violence, we find that whereas a smaller proportion of the mentally ill population commits violent acts compared to committing any crime, a larger proportion of violent acts are committed by the mentally ill compared to any type of crime.
      iv. Figure 3: Overlap between Having Attacked Someone in the Past Year and Severe Psychological Distress in the Past Year (Adults)
      v. This association has led researchers to question the nature of the relationship between mental illness and violent crime in particular – does mental illness cause violence?

   c. Violent Crime and Types of Mental Illness
      i. Growing evidence in the primary literature of an association between severe mental illness – particularly schizophrenia, other psychotic disorders, or bipolar disorders – and violence.

1. United States: Psychiatric patients had a significantly higher arrest rate for violent offenses than non-patients residing in the same community. (Link, Andrews & Cullen 1992)
2. Australia: patients with schizophrenia more likely to have been convicted of a violent offense than matched controls without schizophrenia (8.2% versus 1.8%). (Wallace, Mullen & Burgess, 2004)
3. Sweden: men with major mental disorders 4 times more likely than men without a mental disorder to be registered for a violent offense; women with major mental disorders 27 times more likely to be registered for a violent offense than women with no disorder. (Hodgins 1992)
4. Switzerland: men with schizophrenia were 5 times more likely to commit violent crimes than matched controls without schizophrenia. (Modestin & Ammann, 1996)

ii. Elevated lifetime prevalence of violent behavior among people with schizophrenia or a major affective disorder (16.1%) compared to people with no major mental disorder (7.3%). (Swanson 1994)
iii. Among inmates, prisoners with any psychiatric disorder were more likely to have committed violent crimes that prisoners with no psychiatric disorder – this rate was further elevated among prisoners with schizophrenia or another psychotic disorder. (Baillargeon et al., 2009)
iv. Association between serious mental illness and violence particularly strong among individuals who are psychotic and do not adhere to medication (Ascher-Svanum et al., 2006)

d. Substance Abuse
   i. The relationship between mental illness and crime is complicated, however, by substance abuse, which is positively associated with both problems.
   ii. Substance abuse alone dramatically increases the lifetime prevalence of violent behavior, and among people with serious mental disorders, the effects are almost additive. (Friedman 2006)
   iii. Using the 2007 NSDUH, we analyzed the relationship between having a mental illness and/or substance abuse problem, and having committed a crime in the past year, using a simple linear probability model and adjusting for age and gender – mental illness is significantly and positively associated with crime, but this effect is attenuated when substance abuse is included in our model, and substance abuse alone is much more strongly associated with crime than mental illness alone.

Results:

Dependent Variable = Probability of Having Been Arrested and Booked for Any Crime in the Past Year *(mean = 0.05, N = 37,217)*

Modeling Mental Illness Alone:

Independent Variable	**Coefficient**	**P-Value**
Male	0.051	0.000
Age18-25	0.063	0.000
Age26-34	0.031	0.000
Age35-49	0.016	0.000
Age50-64	0.0061	0.313
Severe Psychological Distress in Past Year	0.045	0.000
Constant	-0.019	0.000

**Note: All independent variables are dummies, and omitted age dummy is for adults age 65 and older.*

Modeling Mental Illness and Substance Abuse Without Interactions:

Independent Variable	**Coefficient**	**P-Value**
Male	0.038	0.000
Age18-25	0.042	0.000
Age26-34	0.020	0.000
Age35-49	0.0076	0.146
Age50-64	0.0028	0.64
Severe Psychological Distress in Past Year	0.024	0.000
Alcohol or Other Drug Abuse or Dependence in Past Year	0.12	0.000
Constant	-0.015	0.002

Modeling Mental Illness and Substance Abuse With Interactions:

Independent Variable	Coefficient	P-Value
Male	0.038	0.000
Age18-25	0.043	0.000
Age26-34	0.020	0.000
Age35-49	0.0078	0.134
Age50-64	0.003	0.619
Severe Psychological Distress in Past Year	0.021	0.000
Alcohol or Other Drug Abuse or Dependence in Past Year	0.12	0.000
Severe Psychological Distress*Alcohol or Other Drug Abuse or Dependence in Past Year	0.014	0.058
Constant	-0.015	0.002

Therefore when modeling mental illness alone, having experienced severe psychological distress (SPD) in the past year increases the probability of having been booked for a crime in the same period by 4.5%. When substance abuse is included in the model, SPD only increases the probability of being booked from a crime by 2.4%, whereas substance abuse increased the probability by 12%. When a substance abuse-SPD interaction term is included in the model, it shows a small positive interaction but is of borderline significance.

2) Mental Illness in Criminal Justice Populations
    a. Mental illness is also prevalent in criminal justice populations.
        i. United States: in 2002, 25% of inmates in local jails had at least one previous diagnosis of a mental illness; in 2004, 25.5% of inmates in state prisons and 14.8% of inmates in federal prisons had at least one previous diagnosis of a mental illness. (Wilper et al. 2009)
        ii. United States: the prevalence of a number of mental disorders among inmates of the Cook County Department of Corrections was significantly higher than that of the general population, including major depression (3.94% versus 1.07%), bipolar disorder (1.36% versus 0.12%), and schizophrenia (2.74% versus 0.91%);

overall, the rate of any severe mental disorder among inmates was 6.36% compared to 1.84% in the general population. (Teplin 1990)

b. Inmates with major psychiatric disorders, particularly bipolar disorder, have an increased risk of repeat incarcerations. (Baillargeon et al. 2009)

3) Drivers of the Overlap
   a. Does mental illness actually cause crime and violent behavior, or is it the other covariates of mental illness and crime that are responsible for this relationship?

   b. Other covariates might include income, education, homelessness, substance abuse.

   c. Even stigma might contribute to the overlap – the mentally ill are more likely to be arrested than the non-mentally ill for similar offenses. (Teplin 1984)

3. Mental Health Treatment as an Early Intervention to Prevent Crime

This section will review evidence in one child application (conduct disorder) and one adult application (income support for persons with mental illness).

Rationale for Conduct Disorder as a Case Study

a. Conduct disorder is one of the more prevalent childhood mental disorders, annual prevalence estimated at about 10%.
b. There is evidence of a significant association between childhood conduct disorder and delinquency and adult crime. Associations with other childhood mental disorders are considerably weaker.
c. Conduct disorder is quite heterogeneous with respect to severity, long term consequences and response to treatment. Age of onset is quite important.
d. Conduct disorder has well developed evidence based treatments. They are typically under utilized as is common with many mental health therapies.

General Framework based on Cunha and Heckman (2007)

e. $C_{t+1} = f(PC, e_t, I_t)$; where C is capabilities of the child/young adult; PC is parental capabilities; e is the household and community environment; I is investment in the child including investments in mental health.
f. Introduce and discuss Figure Y.

g. Mental health problems generally and externalizing disorders (e.g. conduct disorder) specifically are affected by genes and environmental stresses. Key stressors include child abuse, neglect, family turmoil, neighborhood violence and extreme poverty. Clinical literature makes a distinction between childhood onset of conduct disorder (10 or younger) and adolescent onset (over 10).
h. Investments include parenting skills training; treatment of parental substance abuse-mental health problems; early recognition and treatment of child behavior problems.

Links Between Conduct Disorder and Later Criminal Activity.

i. Childhood mental health and life chances in post war Britain (Sainsbury Center, 2009)
    i. Shows severe conduct problems at age 16 increased the relative odds of arrest by age 30 by over 4 fold for men and 5 fold for women.
    ii. Odds of being convicted are 3.5 times for men and 3 time for women with severe conduct problems at age 16.
    iii. Conduct problems at age 5 results in mental having a 1.67 times greater likelihood of offending by age 30 and women 2.5 time the chances of offending.
    iv. Conduct problems at age 5 increases the chances of being convicted by 1.62 times for men and by 2 times for women.
    v. Evaluation of evidence of causal link between conduct disorder and adult crime.
j. Evidence from the NLSY
    i. Shows that children likely to be cases of mental disorder (90^{th} percentile BPI) at age 8 were about 3.2 times more likely to be expelled or suspended from school and scored significantly higher on a delinquency scale at ages 14-16
    ii. Currie and Stabile (2007) show significant effects of conduct disorder on young adult delinquency in Canada and the U.S. using sibling fixed effect.
    iii. Assessment of causal link of conduct disorder and crime
k. Other Evidence from literature
    i. Children in the most severe conduct disorder range (top 5%) at ages 7-9 were 10 times more likely to commit a violent offense and 4 times more likely to be drug dependent at age 30 (Fergusson et al 2005).
    ii. Layard and others have estimates tax payer costs in the UK from severe conduct disorder as 10 fold that of otherwise similar children with no conduct problems (70,000 vs. 7,000)

Effectiveness of Treatments for Conduct Disorder

l. There are about 550 treatments for conduct disorder that have been identified in the literature. Evidence based treatments are less likely to be used or less likely to be available than other less well supported treatments (Kazdin, 2002).
m. Drug treatments have not been shown to work.
n. A number of EBT for conduct disorders have been shown to be effective and cost-effective (see Foster et al, 2007). NICE has issued guidance for conduct disorder. Cost-effectiveness studies have emphasized that early interventions for conduct and behavior problems will only be cost-effective if highly targeted (Foster and Jones, 2005)

o. Sub-set of studies examine crime and delinquency outcomes using randomized or quasi experimental designs—allowing for inference about the impact of mental health treatment on crime. See Foster and Jones (2005); Farmer et al (2002) meta-analysis; Kazdin et al (2002); Hoagwood et al (2007) school based interventions; Washington State Institute for Public Policy (2004).
p. Studies of EBT also show that the training and skill of therapists are critically important to treatment outcomes. Manualization by itself appears not to guarantee results (Washington State Institute for Public Policy, 2004).

Economic Incentives and use of Evidence Based Treatment

q. Benefit design and elements of EBT for conduct disorder
r. Medicaid payment policy and elements of evidence based treatment
    i. Services allowed
    ii. Level of payment
s. Training and availability of EBT in markets for mental health care
t. Payment policy in state mental health agencies for treatment on non-SED children; implications for early interventions for potential SED children

A Rationale for Encouraging Treatment Based on Effects on Crime?

Prevention of Crime Among Mentally Ill Adults Through Social Policy – Examining the Role of Supplemental Security Income (SSI)

1) The preceding example of conduct disorder illustrated how crime might be prevented among the mentally ill through treatment of their mental illness.
2) An alternative approach to preventing crime among the mentally ill might include social policies that do not treat mental illness directly, but mitigate other risk factors common to both mental illness and criminal activity, such as poverty.
3) SSI, administered by the Social Security Administration, is an income supplement program that provides monthly stipends to low-income individuals who are aged, blind or disabled.

   a. Adults with a “medically determinable” chronic mental illness that prevents them from maintaining employment are considered “disabled” and are therefore eligible for SSI.
   b. People with mental disorders constitute the largest diagnostic group among Social Security disability beneficiaries. (Kouzis and Eaton, 2000)
4) Might participation in SSI reduce rates of criminal activity among the mentally ill by reducing poverty rates?
   a. Using the National Survey on Drug Use and Health (NSDUH), we propose first identifying factors predicting criminal activity among individuals with mental disorders.
   b. These individuals will be assigned a propensity score based on their likelihood of committing a crime.
   c. Mentally ill individuals on SSI will then be matched to mentally ill individuals not receiving SSI on the basis of their propensity scores, to determine whether participation in SSI reduces the likelihood of committing a crime.
5) This analysis could inform our understanding of how social policies such as disability benefits might mitigate some of the negative consequences of mental illness.

4. Mental Health Treatment for Offenders

Briefly describe the process beginning with arrest, court, jail/prison and release. Relate to Figure X.

We review the evidence on the effects and costs of mental health treatment at selected stages in this process. Include text for mental health courts. Other forms of mh treatments to be discussed are listed after this section.

Mental Health Courts

Mental Health Courts (MHCs) are alternatives to regular courts for offenders whose mental illness may have contributed to their criminality, and employ resources of both the criminal justice and the mental health system within a framework of therapeutic jurisprudence (Wexler and Winick 1991). Therapeutic jurisprudence is based on the principle that punishment should not be the sole concern of the courts, but rather the well-being of the accused as well as the potential mitigating circumstances regarding mental

health are required for a more complete sense of justice (Rottman 1999). MHCs were modeled on drug courts established earlier (Steadman 2001), with the important distinction that while drug possession and use are crimes, having a mental illness is not. The monitoring-sanctioning function of MHCs thus works differently than drug courts, and the enforced treatment handed down by MHCs is also more controversial than treatment mandates set for drug offenders (Slate and Wesley, 2008).

Broward County, Florida, established the first MHC in 1997, one county north from the nation's first drug court in Dade (Poythress 2002). Broward's MHC was established with the goals of making sure mentally ill patients were released from jail in a timely fashion, got connected with both legal representation and mental health resources, and were oriented well in a return to the community (Cristy 2005). MHCs have proliferated, mainly in southern and western states (Slate 2008). By December, 2005, the National Alliance for the Mentally Ill (2005) counted 113 courts; Steadman recently estimated that there are ~150 courts in operation (Slate 2008).[1] The *Mentally Ill Offender Treatment and Crime Reduction Act* of 2003 awards grants to counties for mental health courts or other court-based programs fueling growth of MHCs. Research on MHCs must contend with local idiosyncrasies (Steadman et al., 2001), and the malleable nature of court administration (Bernstein et al., 2003).

MHCs are usually defined as courts with a separate docket for mentally ill patients with specialized personnel to handle the cases. Courts set criminal and mental health criteria for selecting candidates (Redlich 2005). Some courts test potential clients after the initial arrest, and some require confirmed diagnosis before considering the candidate eligible for treatment. Referrals to MHCs come from law enforcement

[1] There is no consensus on the definition of a MHC (Christy et al., 2005).

personnel, court personnel, district attorneys, public defenders or patient families. In an early study of 20 MHCs, Bernstein et al. (2003) report that four courts excluded offenders with any history of violent behavior. Ten courts accepted offenders with felony charges, and ten were restricted to those with misdemeanor only charges. In Broward County, referrals to the MHC *must* come post-arrest and may only come from other judges, district attorneys or lawyers for the defense (Christy 2005). Poythress (2002) describes Broward's selection process:

> "The court's jurisdiction is limited in general to nonviolent misdemeanants. Individuals charged with assault may come before the court with victim's consent. The court employs no formal diagnostic screens to determine whether to accept jurisdiction; rather a history of mental illness or mental health treatment or apparent symptoms when the person comes before the court *may* result in a decision by the court to take jurisdiction." (Emphasis added)

The judge in Broward determines sentencing and conditions for what amounts to bail for the defendant. Non-adherence can result in incarceration and return to traditional justice system. There is no jury involved in the process.[2]

To establish leverage, some MHCs require that the defendant enter a guilty plea (Bernstein 2003). Discharge from an MHC may take months or years, and may extend well beyond the time a defendant would have spent in jail had he followed the normal route of criminal justice. Although mental health courts may avoid jail time, they are designed to incur additional costs in terms of MHC supervision and contacts, and in the mental health treatment system.

[2] Redlich et al. (2005) distinguish between what they refer to as first and second-generation MHCs. Those following the Broward County model, accepting only misdemeanor patients, are termed first generation courts. Second generation courts modify the Broward County model on four dimension: "(a) type of charges the court accepts (felony vs. misdemeanor), (b) type of adjudicative model the courts follow (pre- vs. postadjudication), (c) sanctions used in the court (specifically the expressed willingness to use jail as a sanction), and (d) supervision of MHC participants (mental health vs. criminal justice professionals)." (Redlich et al., p. 528)

Evaluations of Mental Health Courts

MHCs have been studied from several perspectives. Legal scholars question the concept of therapeutic jurisprudence and whether offenders with mental illness are competent to abdicate their rights to regular judicial processing including jury trial (Slobogin 1995, Allen & Smith 2001). Others question whether clients in MHCs should be coerced or "leveraged" into treatment (Griffin et al., 2002).[3] MHCs mandate the mental health system to treat court-supervised clients at a high priority, and in a setting with limited community-based resources, some other clients, possibly with greater need from a clinical perspective, will be crowded out (Clark 2004, Goldkamp & Iron-Guynn 2000, Steadman 2001, Watson 2001).[4] Discretion in application of who is "appropriate" for MHCs, access to mental health courts may not be fair, in the sense of leading to systematic discriminating on the basis of gender or race.[5]

Our main interest is evaluation of MHCs from the standpoint of their impact on criminal justice and mental health system outcomes and costs. Table 1 summarizes the

[3] See Monahan et al. (2005) for an empirical review of the application of "leverage" in mental health courts.

[4] In principal, any impact of "queue-jumping" on the mental health system should be taken into account in evaluating the impact of MHCs, this is very difficult to do in practice (Wolff 2002, Petrila 2003). In resource constrained mental health systems, persons with mental illness have incentives to offend in order to access treatment, an "unintended consequence" referred to by a number of observers (Sinaiko and McGuire 2006, Wolff 2002).

[5] MHC clientele differ systematically from traditional criminal caseloads. Referring agents may select for 'good' risks based upon personal characteristics. Steadman et al. (2005) studied selection in seven MHCs concluding that older, white females tend to be preferentially referred to MHCs. Naples et al. (2007) confirmed the Steadman finding in that older, white women without felony or violent charges (even among courts that accept felony cases) appear to be preferentially selected for entry into mental health court. The other way to state these results is that young Black males are less likely to be referred to MHCs. Whether this represents unfair discrimination or decisions based on application of reasonable criteria for likely success in MHCs has not been established. Fairness is an issue in other application of mental health treatments for criminal justice populations, though the treatment is not always regarded as a positive as in the case of MHCs. Blacks are more, not less likely to be referred to mandated outpatient treatment, though in the case of New York State at least, this is due to Blacks' overrepresentation in the denominator population of those at risk for crime with extensive contact with the public mental health system rather than any race-based discrimination by referring agents. See Swanson et al (2009).

findings of eight case studies of particular courts. The reports are generally positive, but study designs are not uniformly strong. Only one study (Ridgely et al.) includes costs. Hendrickx (2005) studied the MHC in Clark County Nevada using a 12-month pre-post time comparison. Crime dropped after MHC participation, and dropped most for those completing court participation. Boothroyd (2005) and Cristy (2005) studied mental health and criminal justice outcomes, respectively, for the Broward court, comparing trends for MHC participants from a matched group of misdemeanants from Hillsborough County. Although the MHC participants were more likely to be linked to treatment, this did not improve mental health outcomes (check). Christy reported mainly favorable criminal justice outcomes.

Compared to offenders handled in regular court, Moore (2006) finds reduced recidivism in a MHC in the southeastern U.S., particularly for those completing MHC. Trupin (2003) investigated the effect of MHCs in Seattle on recidivism, clinical outcome measures and severity. In a pre-post comparison, recidivism dropped. Notably, offenders were in jail longer pre-booking with MHCs, offsetting any savings in reduced recidivism. (chech mh findings). McNeil (2007) examined the San Francisco county MHC which included violent offenders. Compared to a matched sample, recidivism fell 55%, but McNeil cautioned that the propensity matching may not be picking up unobservable characteristics related to being "most likely to violently reoffend," biasing findings in favor of the MHC, a problem plaguing the nonexperrimental studies.

Cosden (2003) investigated the Santa Barbara MHC/ACT system for clients that received MHC treatment compared to TAU using a randomized design. [comment on design] Clients in the MHC system reported marginally better quality of life increases,

but similar criminal outcomes in terms of number of times arrested and time in jail. Cosden notes however, that MHC patients had less intensive jail stays and were more frequently released with no charge.

Ridgely et al.'s (2007) study of the Alleghany County (Pittsburgh, PA) MHC includes costs. The Alleghany court is oriented to non-violent offenders (though some aggravated assault cases are admitted). The court accepts only those individuals with a documented diagnosis of mental illness and requires a guilty plea be entered before beginning the MHC intervention. Like most MHC the intervention is a form of monitored probation with integrated community treatment and 'reinforcement hearings' in the MHC. Participants are discharged as having completed the program, potentially earlier than a normal sentence, after the MHC team rules treatment to have been effective. Describe the cost data, the real and the counterfactual.

Discuss new Steadman study with matched sample and measures of cost as well as effects.

Mental Health Treatment in Jails and Prisons

Specialty Probation

Voluntary and Involuntary Community Treatment

5. Conclusions

Division of labor between MH and CJ decisionmakers about mh treatment.

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