## **Treatment in Criminal Justice Settings**

70

## David Farabee, Richard A. Rawson, and Tarek A. Gawad

#### **Contents**

70.1	Introduction		1130
70.2	The Evidence for Causes, Consequences, Treatment		1131
	70.2.1	Causal Effects of Illicit Drugs on Criminal Behavior	1131
	70.2.2	Drug Use Behind Bars	1132
	70.2.3	Mortality Rates Among Just-Released Offenders	1132
	70.2.4	Intervention Settings for Drug-Involved Offenders	1133
	70.2.5	Intervention Models for Drug-Involved Offenders	1134
	70.2.6	Medication-Assisted Treatments (MAT)	1136
	70.2.7	Managing Offenders Under Community Supervision	1138
70.3	Conclusion		1139
	70.3.1	Focus on Implementation	1139
	70.3.2	Need for More Randomized Trials	1140
	70.3.3	Clarify the Role of Coercion: When It Helps, When It Hurts	1140

#### D. Farabee (⊠)

Integrated Substance Abuse Programs, Department of Psychiatry and Biobehavioral Sciences, UCLA, Los Angeles, CA, USA e-mail: dfarabee@ucla.edu

#### R.A. Rawson

Department of Psychiatry and Biobehavioral Sciences, UCLA, Los Angeles, CA, USA

Integrated Substance Abuse Programs, Semel Institute for Neuroscience and Human Behavior, David Geffen School of Medicine at UCLA, Los Angeles, CA, USA e-mail: rrawson@mednet.ucla.edu

#### T.A. Gawad

Faculty of Medicine, Cairo University, Cairo, Egypt

National Rehabilitation Center, Abu Dhabi, UAE

e-mail: tgawad@tedata.net.eg; tarek.gawad@NRC.ae; tarekgawad@me.com

70.3.4	Distinguishing "Addicted Offenders" from "Offender Addicts"	1140
70.3.5	Examine the Use of Depot Medications	
	for Opiate-Dependent Offenders	1141
References	• •	1141

#### **Abstract**

The high prevalence of use among offenders is a consistent trend that transcends international boundaries. Chronic drug users in the criminal justice system pose risks to themselves and the general population through their commission of drug-related property and violent crime, as well as through the spread of infectious diseases, such as HIV and HCV. In this chapter, we review multinational evidence concerning the drug/crime relationship, the use of drugs within correctional settings, the consequences of drug use among offenders, and the intervention approaches for drug-involved offenders in custodial settings as well as those under community supervision. We conclude with several recommendations for practice and research that we consider to be important next steps in advancing this literature: (1) focus on implementation; (2) need for more randomized trials; (3) clarification of the role of coercion – when it helps, when it hurts; (4) distinguish "addicted offenders" from "offender addicts"; and (5) examine the use of depot medications for opiate-dependent offenders.

#### 70.1 Introduction

The prevalence of substance use and substance use disorders among criminal justice populations has remained consistently high for decades – and in some places it continues to increase. It is estimated that half of prisoners in the European Union have lifetime histories of heavy drug or alcohol use (Zurhold et al. 2004). In the United States, the prevalence is estimated at nearly 85 % (Center on Addiction and Substance Abuse [CASA] 2010). Even as US incarceration rates are on the decline, the percentage of offenders incarcerated for drug charges has increased by nearly 20 % (CASA 2010).

The high rates of substance use among criminal offenders are the result of a host of demographic, psychological, sociological, and legal factors that vary across cultures. But despite these variations, one overall trend is clear: In most countries, substance-involved offenders account for a substantial share of criminal activity and criminal justice costs. According to one review, drug offenders account for 3–29 % of those incarcerated in the European Union (EU), 4–29 % of inmates in non-EU European countries, 5–53 % of inmates in the Americas, and 10–58 % of inmates in Asia/Oceania (Bewley-Taylor et al. 2009).

In this chapter, we review multinational evidence concerning the drug/crime relationship, the use of drugs within correctional settings, the consequences of drug use among offenders, and intervention approaches for drug-involved offenders in custodial settings as well as those under community supervision.

## 70.2 The Evidence for Causes, Consequences, Treatment

## 70.2.1 Causal Effects of Illicit Drugs on Criminal Behavior

Because the association between drug use and crime is complex, Goldstein's (1985) conceptual framework for the various types of drug/crime relationships is widely accepted and deserves some discussion here. Although originally proposed to explain the relationships between drug use, the drug trade, and violence, this framework can be applied more generally to include property offenses as well. Goldstein argues that drug use can be associated with other forms of criminality because of economic-compulsive, pharmacological, and systemic models of use and/or distribution. These are briefly summarized below:

- Economic-compulsive resorting to criminal behavior to support one's drug use. Crimes in this category include property crimes to obtain money for drugs, selling drugs to support one's own habit, or having sex with someone in exchange for drugs or money for drugs.
- Pharmacological engaging in irrational or violent behavior as a result of the
  acute and/or chronic psychological or physiological effects of a drug. For
  example, certain offenders might use, or threaten to use, violence because they
  were intoxicated and were not aware of what they were doing; or in some cases,
  an offender might use drugs or alcohol expressly to reduce the fear of danger
  prior to engaging in a criminal act.
- Systemic engaging in crimes ranging from selling drugs to using violence, or the threat of violence, to protect a drug operation.

Subsequent research testing these relationships has shown that the systemic factors offer the strongest link – particularly for violent crimes (Tardiff et al. 1986). Evidence for the pharmacological link to violence among humans is often confounded by the poor specification of what drugs were used and in what quantity. Cartier and colleagues (2006) examined data from over 600 prison parolees to explore the associations between methamphetamine use and recidivism and found that methamphetamine use was significantly predictive of self-reported violent criminal behavior and general recidivism (i.e., a return to custody for any reason). This analysis controlled for background differences in demographic and criminal history, but was limited to the narrow range of variables available. More controlled animal studies have examined aggressive behaviors (number of initiated bite attacks and latency before attacks) between mice that had received a single injection of methamphetamine versus chronic injections over 8 weeks. The authors found that the single injection did not increase fighting, but chronic injections were associated with increased attacks and decreased latencies in attack behaviors (Sokolov et al. 2004).

Another method to assess the relationship between substance use and crime is to directly ask arrestees whether their drug or alcohol use was a factor in their commission of the arresting offense. Using data from the Drug Use Monitoring in Australia (DUMA) database, Payne and Gaffney (2012) found that 45 % attributed their current offense to either alcohol or drug use. The highest attribution rate was found among heroin users (54 %), followed by alcohol users (41 %).

## 70.2.2 Drug Use Behind Bars

The research base on drug use in prison is limited. Most of the studies on this topic have been conducted in the United States, Great Britain, and Canada. In the United States, estimates of in-prison drug use based on random drug tests have ranged from 1 % to 27 % (Vigdal and Stadler 1989; Inciardi et al. 1993). Using a combination of convenience and random sampling to survey 1,054 prisoners in 30 prisons in Kentucky, Tennessee, and Ohio in 2001, Gillespie (2005) found that 35 % reported some behavior in the past 12 months related to drug and alcohol use (use and possession, but also manufacture and sale).

Studies in the United Kingdom have revealed even higher prevalence of use in prison. According to Shewan et al. (1994), 74 % of inmates surveyed in four Scottish prisons reported using marijuana while in prison. Using a sample of offenders who had used drugs prior to prison, Bullock (2003) found that 56 % of inmates reported using any illicit drug in prison, with marijuana being the most common drug, followed by heroin. This study also queried inmates about their frequency of use while in prison, finding that 14 % of inmates interviewed reported using marijuana daily or near daily; the figure for daily heroin use was 3 %.

In an interview study (Pernanen et al. 2002) of Canadian prisons, 29 % of the sample reported using any illicit drug in the 3 months prior to the interview, with the most popular drug being marijuana. Alcohol use was reported by 16 %. Nearly 90 % of those interviewed said that their behavior in the past 3 months was typical of their behavior over the past year or since their arrival in prison. Random drug testing results have also been used to develop estimates for drug use. Kendall and Pearce (2000) reported that the percentage of any positive test across Canadian prisons ranged from 10 % and 13 % between 1994 and 1998, most commonly for marijuana.

## 70.2.3 Mortality Rates Among Just-Released Offenders

Although prison and jail can be effective at reducing levels of crime and drug use during the period of incarceration, resumption of these behaviors upon release is the norm. In the United States, nearly 7 in 10 released offenders are rearrested within 3 years (Bureau of Justice Statistics 2002). Data regarding drug use are even more disquieting, indicating that in many cases, offenders are re-addicted within 1 month of release from incarceration and their drug use and/or crime levels following prison can even exceed those reported prior to incarceration (Hough 2002).

The risk of death among parolees is particularly high – nearly 13 times greater than those of similar demographic background – during the first 2 weeks following release from prison, with drug overdose being the leading cause (Binswanger et al. 2007). As dire as this finding is, it may be an underestimate of the problem. A study of newly released prisoners in England and Wales found that the mortality rate among males was 29 times higher than that of the general population during the first 2 weeks of release. The mortality rate for female offenders was 69 times higher (Farrell and Marsden 2007). These studies are included in a recent meta-analysis of

drug-related deaths following prison release that revealed a three- to eightfold increase in the risk of drug-related deaths during the first 2 weeks following release (relative to the subsequent 10 weeks), with relatively high risk of death remaining throughout the first month of reentry (Merrall et al. 2010).

## 70.2.4 Intervention Settings for Drug-Involved Offenders

In most countries, the criminal justice system encompasses offenders who are incarcerated in jail or prison and those under supervision in the community. The latter group – those on probation or parole – constitutes the vast majority of the criminal justice population. Although the treatments described below can be implemented in custody or in the community, both settings have advantages and disadvantages that merit consideration.

#### 70.2.4.1 Prison and Jail Settings

Because prisons and jails are confined settings, they offer an important advantage over community settings: access to a captive population of high-risk substance misusers. This, combined with the tedium of daily life behind bars, provides ample opportunity to screen, assess, and treat those in need of services. Still, in many countries, limited resources are devoted to security and basic services, with little left for substance abuse treatment services (Dolan et al. 2007). Even in more affluent nations, treatment need often exceeds capacity. In the United States, for example, it is estimated that only about one in four inmates in need of substance misuse treatment receives it (Taxman et al. 2007). There are, however, some challenges associated with custody-based treatment that reduce its appeal. Common elements of traditional drug abuse counseling approaches, such as the assurance of confidentiality and mutual self-disclosure between counselor and client, are limited in prison. Consequently, even experienced community-based counselors must learn to adjust their counseling styles in order to be effective in this environment. There is also a conflict between security concerns and rehabilitative goals, often limiting inmates' movement within a prison that may be required for attending groups, counseling sessions, etc. Lastly, a major limitation to providing pharmacotherapy in jail or prison is the risk that inmates will divert psychoactive medications such as buprenorphine and methadone to other inmates for recreational use (Dolan et al. 2007).

#### 70.2.4.2 Community Settings

An important advantage of community settings is that drug-involved offenders are forced to learn and rehearse abstinence-supporting behaviors in the "real world," where drugs and drug-using peers are readily available. However, once an offender leaves the controlled environment of jail or prison, adherence to medication (Stephenson et al. 2005) and psychosocial treatment (Farabee et al. 1999) declines dramatically. For instance, one study of over 2,000 HIV+ inmates released from prison found that only 18 % filled their ART prescription within the first 30 days following discharge (Baillargeon et al. 2009). Particularly in the contexts of

community-based treatment, coercion through legal pressure is often cited as a useful tool. (Our use of the terms "coerced or compulsory" refers to the use of legal pressure and supervision to ensure that drug-involved offenders enter and remain in substance abuse treatment appropriate to their needs. We do not condone the use of compulsory drug detention centers where those arrested for – or accused of – using illicit drugs are remanded without due process to engage in forced labor and live in substandard conditions.) Indeed, some studies have shown that coerced clients do as well or better in treatment as those entering voluntarily (see Leukefeld and Tims 1998). However, it should be noted that few of these studies have measured coercion directly and that the outcome of interest in most of these studies has been program retention and/or completion rates, rather than reductions in drug use or recidivism (Wild et al. 2002). As a result, the effects of coerced treatment remain unclear.

## 70.2.5 Intervention Models for Drug-Involved Offenders

The associations between substance misuse and crime, and the public health and safety risks posed by ongoing drug use behind bars, underscore the need for prevention and intervention. What is less clear is how to prevent drug use and provide interventions. In this section, we summarize common approaches to reducing drug use (and its attendant problems, such as recidivism and the spread of infectious diseases) among convicted drug-misusing offenders.

## 70.2.5.1 Psychosocial Treatments

Psychosocial treatments refer to therapeutic interventions aimed at changing offenders' drug-taking behavior by focusing on root causes (psychological and environmental), proximate causes (learned responses to internal and external cues), drug-related knowledge and attitudes, and behavioral change through rehearsal and role play. Psychosocial treatment is common in correctional settings as it is relatively inexpensive and can occur in groups. Two of the most prominent forms of psychosocial treatment in correctional settings are therapeutic communities (TC) and cognitive behavioral therapy (CBT). A third related approach is the 12-step approach (Alcoholics Anonymous [AA] and Narcotics Anonymous [NA]), though this is technically considered peer-led support rather than treatment. Nonetheless, given the ubiquity of AA/NA groups in correctional settings, we include a discussion of the 12-step approach in this section as well.

#### 70.2.5.2 Therapeutic Communities

Among prison-based substance abuse treatment programs, the most commonly evaluated is the therapeutic community (TC). The TC philosophy holds that substance abuse is not the main cause of the offender's problems. Rather, it is a symptom of a larger problem: the disorder of the whole person. Thus, the goal of a TC is to "habilitate" clients in a holistic fashion, emphasizing personal responsibility. Rather than attempting to change offenders through counselor-led, didactic presentations, TCs rely primarily on the residents themselves to effect change on the individual.

After reviewing 11 evaluations of prison-based TCs, Phipps et al. (1999) reported that two of the TC programs showed clear evidence of an effect, three showed some evidence of an effect, three showed no effect, and three were inconclusive. The reviewers further recommended caution in interpreting this literature because the individual studies varied considerably in terms of their quality and conclusions.

A review by Pearson and Lipton (1999) showed more favorable results for TCs, but no support for other types of prison-based substance abuse programs. Again, however, the reviewers noted the generally poor quality of studies in this area. As mentioned earlier, of the seven therapeutic community evaluations in their meta-analysis, only one was rated "good," with the remainder rated "fair" or "poor." Subsequent reviews of the prison-TC literature continue to report positive effects on drug use and recidivism, but these effects are buttressed by the selection effects of the subgroups of TC graduates who voluntarily enter and complete aftercare programs in the community (Bahr et al. 2012).

The popularity of the prison-based TC approach appears to have peaked in the 1990s and declined over the past decade. This may be attributable to its relatively weak empirical support and the perceived advantages of cognitive behavioral therapy.

#### 70.2.5.3 Cognitive Behavioral Therapy

Cognitive behavioral therapy (CBT) refers to a category of approaches designed to change the way offenders process information and perceive their environment and themselves. These treatments focus on providing offenders with the cognitive skills and behavioral methods needed to identify high-risk situations, dysfunctional attitudes, and effective coping strategies. A recent meta-analysis of 53 controlled trials of CBT for alcohol and illicit drug users found a small but statistically significant effect for this approach, though the effects were largely diminished within a year (Magill and Ray 2009). A separate meta-analysis of 58 evaluations (conducted in the United States, Canada, the United Kingdom, and New Zealand) of CBT for offenders also showed positive effects for this approach on recidivism – with an average reduction of about 25 % in recidivism risk. The authors also drew two important conclusions about moderator effects: (1) the strongest treatment effects were found for the highest-risk offenders, and (2) the "brand name" CBT programs produced effects that were similar to the generic versions (Landenberger and Lipsey 2005).

#### 70.2.5.4 12-Step Programs

Support groups, such as Alcoholics Anonymous and Narcotics Anonymous, exist in countries around the world, especially in the United States, Canada, and Latin America. The general approach of 12-step facilitation focuses on self-help and peer support, with a strict emphasis on abstinence. The anonymous nature of these groups has hampered efforts to subject them to rigorous evaluation, but one Cochrane Collaboration review including eight trials (comprising over 3,000 participants) found some evidence that AA participation may aid in retaining patients in formal treatment, but did not find strong evidence for its direct role in reducing alcohol use (Ferri et al. 2006). Our review did not identify any outcome data specific to correctional populations, but the 12-step approach is extremely popular

in these settings. In the United States, for example, more than a quarter of state prison inmates and about one in five federal inmates meeting criteria for substance misuse participate in such groups (Mumola and Karberg 2006).

#### 70.2.6 Medication-Assisted Treatments (MAT)

#### 70.2.6.1 Enhancing Receptivity of MAT in Correctional Settings

A recent survey of criminal justice agencies affiliated with NIDA's Criminal Justice Drug Abuse Treatment Studies (CJ-DATS) collaborative found that MAT is underutilized in the treatment of US offenders with substance use disorders (Friedmann et al. 2012). Offenders most likely to receive MAT were pregnant women and those experiencing opioid withdrawal. Offenders *least* likely to receive MAT were those reentering the community after serving a prison or jail term. Among the primary factors inhibiting the use of MAT in correctional settings were preferences for drug-free treatment and limited knowledge of the benefits of MAT. Addressing these philosophical- and knowledge-related barriers will require relevant data collected in real-world settings, that is, the testing of practical MAT administration models in offender populations.

#### 70.2.6.2 Methadone

Methadone is a synthetic opioid used to reduce craving and block the euphoric effects of heroin, morphine, and other non-prescribed opioids. It is also used for opiate detoxification. Since the 1990s, following the development of maintenance programs in the community, programs have also been introduced in prisons. In-prison methadone provision is now available in Canada, Australia, Poland, Indonesia, Iran, New Zealand, Puerto Rico, and the majority of Western Europe (Betteridge and Jurgens 2008). After researchers in Tehran found that a history of shared injection equipment in prison was the main predictor of HIV infection in the general population, the Iranian government launched a pilot program to provide methadone to 50 opiate-dependent prisoners. The results were promising enough that over 6 years the program was expanded to 142 institutions – offering MMT to more than 25,000 inmates in 2009 (Farnia et al. 2010). At the present time almost every large- and middle-sized prison in Iran provides methadone treatment to injection heroin users, and as of 2011, there were over 38,000 prisoners in Iranian prisons in treatment with methadone (Momtazi et al. 2012). Iran has developed one of the largest systems of methadone treatment in prisons, supported by a clinical trial in an Iranian prison that demonstrated methadone treatment is associated with a significant reduction in injection drug use (Bayanzadeh et al. 2007; cited in Momtazi and Noroozi (this volume)). During that same year, more than 19,000 MMT treatments were provided to inmates in the United Kingdom (Stover and Michels 2010). A key finding regarding methadone induction for this population is that initiation of MMT prior to release produces significantly better outcomes than offering MMT upon release to the community (Gordon et al. 2008).

#### 70.2.6.3 Buprenorphine

A substantial body of research supports the safety and efficacy of buprenorphine and the buprenorphine-naloxone combination (e.g., Ling and Wesson 2003). A recent review of 24 randomized trials revealed that buprenorphine (at medium to high doses) was significantly superior to placebo medication in reducing heroin use (Mattick et al. 2008). Several properties of buprenorphine may make it potentially less objectionable than methadone to criminal justice personnel as a treatment for opiate dependence. First, the agonist activity of buprenorphine has a ceiling effect that decreases the danger of overdose and limits its abuse liability. Second, buprenorphine produces sufficient tolerance to block the effects of heroin and other opiates, thus reducing illicit opiate use. Third, buprenorphine exhibits a slow dissociation from  $\mu$ -opiate receptors, which results in a long duration of action and a reduced dosing schedule compared with methadone. Fourth, the combination tablet of buprenorphine and naloxone (as Suboxone) reduces the risk of illicit injection – along with injection-related HIV/HCV risk (a common problem in correctional settings where injection equipment is scarce and sharing is common).

In spite of the substantial literature that has accumulated over the past decade supporting the use of buprenorphine, it has not been readily adopted in correctional settings. A recent survey of the US state and federal prison systems showed that only 15 states (29 %) provide any referrals to community buprenorphine providers (Nunn et al. 2009). Although the use of MAT is more common in jails than in prisons (used primarily to manage opiate withdrawal), it is important to note that it remains unavailable in two thirds of US jails (Oser et al. 2009).

#### 70.2.6.4 Naltrexone

Naltrexone is an opioid receptor antagonist that blocks the euphoric effects of heroin and other opioids. This characteristic has fostered growing acceptance of naltrexone by correctional authorities who wish to avoid the perception that they are merely replacing one drug with another. However, it must be taken orally on a daily basis, making adherence a problem among all but the most committed patients. Cornish et al. (1997) randomly assigned federal probationers to a 6-month program of probation plus naltrexone and brief drug counseling or to probation plus counseling alone and found that opioid use was significantly lower in the naltrexone group, with the mean percent of opioid-positive urine tests among the naltrexone subjects at 8 % versus 30 % for control subjects (p < 0.05). Likewise 56 % of the controls and 26 % of the naltrexone group (p < 0.05) had their probation status revoked within the 6-month study period and were returned to prison. But treatment compliance was a problem, with only 52 % of subjects in the naltrexone group continuing for the 6-month duration of the study.

A depot formulation of naltrexone (e.g., Vivitrol®; approved in 2010 by the U.S. FDA for opioid addiction) addresses the problem of noncompliance with medication dosing, eliminates concerns about potential diversion (an issue with oral buprenorphine and take-home doses of methadone), and lessens the need for frequent patient presentation in the clinic or physician's office. Naltrexone injections reliably prevented relapse within 1 month after detoxification

(Foster et al. 2003), and multi-site research in Russia found Vivitrol effective for treating heroin addiction over 6 months (Krupitsky et al. 2011).

## 70.2.7 Managing Offenders Under Community Supervision

We have reviewed several prominent psychosocial and pharmacological treatment approaches used for drug-involved offenders. In addition to the specific treatments employed, it is important to consider how best to identify and manage these offenders to maximize accountability, compliance, and clinical progress. Two notable approaches are the drug court model and the application of testing and sanctions.

#### **70.2.7.1 Drug Courts**

There are currently more than 2,000 drug courts operating in the United States. Programs can also be found in Australia, Canada, the United Kingdom, and New Zealand. Drug courts vary in how they manage their caseloads, in the ancillary services they offer, and in the testing and sanction schedules they apply. What they all have in common is the provision of ongoing supervision from a judge, with offenders appearing before the judge for regularly scheduled updates. The drug court movement has been very successful. Many evaluations suggest that this is an effective approach to managing offenders in the community (Belenko 1998), though most of the support comes from non-randomized evaluations. The most rigorous evaluation, using a randomized, intent-to-treat design, was conducted on the Baltimore City Drug Court in Maryland (USA). A 1-year follow-up showed significantly lower levels of drug use and fewer arrests among those assigned to the drug court versus the control condition. By the time of the 3-year follow-up, these differences were no longer significant, although trends still favored the drug court participants (Gottfredson and Exum 2002; Gottfredson et al. 2005).

## 70.2.7.2 Testing and Sanctions

In 2004, a pilot program entitled Hawaii's Opportunity Probation with Enforcement (HOPE) was implemented in Honolulu in response to Judge Steven Alm's frustration with inept probation supervision, particularly in the management of methamphetamine abusers. Honolulu's probation officers were overwhelmed with high caseloads (often over 180:1), were struggling to manage their workloads, and were limited in their ability to detect and respond to violations. These difficulties led to long delays in responses to probation violations (positive urinalyses, missed appointments with probation officers, and missed treatment or failure to comply with drug treatment conditions) and high rates of noncompliance. The typical noncompliant offender would accumulate a long list of violations before action was taken. Under HOPE, offenders were given clear instructions on the content and implications of their community supervision, and the sentencing judge (or hearing officer) clearly laid out the rules of the

supervision program. Offenders who violated the terms of probation were immediately arrested and brought before a judge or hearing officer the same day. Under HOPE, *every* violation of community supervision terms was met with a sanction. *Parsimonious* use of punishment enhanced the legitimacy of the sanction package and reduced the frustrations and costs associated with tougher sentences, such as long prison stays. Results of a randomized evaluation of HOPE showed that drug use, missed appointments, and arrests for new charges in the year following randomization were reduced by one half to two thirds (Hawken and Kleiman 2009).

#### 70.3 Conclusion

This chapter highlights the importance of capitalizing on the criminal justice system to identify and intervene with substance-misusing offenders. The high prevalence of use among offenders is a consistent international trend. Moreover, drug users in the criminal justice system pose risks to themselves and the general population through their commission of drug-related property and violent crime, as well as through the spread of infectious diseases, such as HIV and HCV.

Although the need for some level of intervention is clear, our review of existing treatment options and their supporting research underscores the fact that appropriate solutions are still not well established. Nor can we be certain of the extent to which reductions in substance use will produce commensurate reductions in criminal activity (aside from that inherent to illicit drug use itself).

We conclude this chapter with several recommendations for practice and research that we consider to be important next steps in advancing this literature.

## 70.3.1 Focus on Implementation

Over a decade ago, Gendreau and colleagues wrote that "of all the issues critical to the development of effective correctional treatment programs, program implementation has been relatively ignored" (Gendreau et al. 1999, p. 180). This observation is no less relevant today. Implementation fidelity is a challenge in any setting, but even more so under the auspices of a correctional system. This is because correctional administrators understandably focus their attention on the primary goals of keeping the general public safe from offenders and incarcerated offenders safe from each other. Successfully carrying out a rehabilitative agenda within these settings requires not only a knowledge of implementation science but also a practical understanding of how the criminal justice system works and why. Identifying effective practices that can be implemented for offenders – whether in custody or under community supervision – is only a first step that must be followed by research on how to encourage other correctional organizations to adopt such practices and how to ensure that the key elements in the original intervention are not lost or diluted in the process.

#### 70.3.2 Need for More Randomized Trials

Selection bias and other less-obvious confounds have historically undermined confidence in evaluations of interventions for substance misusers, and conducting rigorous, randomized trials can be even more difficult in correctional settings, where there is an ongoing concern over disparate treatment of convicted offenders. Awareness of – and appreciation for – experimental research with offenders appears to be growing, however, with the number of published trials between 1982 and 2004 more than double that published in the two decades before (Farrington and Welsh 2005). Correctional research remains a challenge, but Asscher and colleagues (2007) have offered several useful suggestions based on their experiences conducting clinical trials with juvenile offenders in the Netherlands, including methods for overcoming institutional resistance, maintaining cooperation from study participants, and dealing with high staff turnover.

## 70.3.3 Clarify the Role of Coercion: When It Helps, When It Hurts

As we mentioned earlier in this chapter, reviews of the coerced treatment literature for substance-misusing offenders have not led to conclusive results (Wild et al. 2002). One important weakness of this body of research is that most studies of coerced treatment fail to measure this construct directly, but rather assume its presence given the nature of the criminal justice system. Because offenders who are mandated to participate in treatment can vary substantially in their perceived need for treatment, this methodological shortcoming obscures the extent to which coercion facilitates or undermines the therapeutic process. Another significant weakness is that the majority of coerced treatment studies rely on treatment retention or graduate rates as the outcome, rather than reductions in relapse and recidivism. The continued use of the criminal justice system as a setting for identifying substance misusers and mandating them to treatment should be accompanied by a more nuanced understanding of the effects of formal and informal sources of coercion.

# 70.3.4 Distinguishing "Addicted Offenders" from "Offender Addicts"

In most countries, the capacity for providing substance abuse treatment services in prison falls well short of the estimated need (Dolan et al. 2007). Absent a dramatic reversal of this trend, it is critical that researchers and practitioners develop criteria for determining which substance misusers are most likely to benefit from treatment and, among these, for whom reduced drug use will produce reduced criminal behavior.

Distinguishing offenders whose drug use impels criminal behavior from those whose drug use is merely coincidental has proven an elusive goal among addiction researchers and criminologists, but there is some evidence that such a distinction can be made. For example, Nurco and colleagues (1988) classified 214 narcotic addicts according to their criminal involvement during a 2-year pre-addiction period and then compared rates of criminality during addiction periods for those who had engaged in crime prior to becoming addicted (approximately one half of the sample) and those who had not. As hypothesized, both groups increased their rates of criminality during high-addiction periods. However, during subsequent periods of low use, 78 % of the high-crime subjects (based on criminal activity during their pre-addiction period) continued to engage in criminal activity versus only 40 % of those in the low-crime group. Between-group differences were particularly disparate for drug dealing, with the high-crime group being responsible for 91 % of the drug-dealing crimes during the nonaddiction periods.

# 70.3.5 Examine the Use of Depot Medications for Opiate-Dependent Offenders

The high risk of death among offenders during the first 2 weeks following release from prison – and the fact that drug overdose is the leading cause (Binswanger et al. 2007) – suggests that drug use treatment might be considered effective even if it only reduced use or prevented relapse during the initial post-release phase. Newly approved depot formulations of naltrexone (e.g., Vivitrol®) and buprenorphine (e.g., Probuphine®) offer promise for overcoming poor medication adherence and eliminate the risk of these substances being diverted for recreational use. Moreover, even a single administration of these medications immediately prior to release from custody can reduce the threat of fatal opiate-related overdoses during the initial reentry period, when risks are at their highest. Given their promise, more evaluations of depot pharmacotherapies for released offenders are strongly recommended, particularly concerning strategies to encourage initial interest in these medications and to increase the percentage of offenders who return for subsequent doses.

#### References

Asscher JJ, Deković M, van der Laan PH, Prins P, van Arum S (2007) Implementing randomized experiments in criminal justice settings: an evaluation of multi-systemic therapy in the Netherlands. J Exp Criminol 3:113–129

Bahr SJ, Masters AL, Taylor BM (2012) What works in substance abuse treatment programs for offenders? Prison J 92(2):155–174

Baillargeon J, Giordano TP, Rich J, Wu Z, Wells K, Pollack BH, Paar DP (2009) Accessing antiretroviral therapy following release from prison. JAMA 301(8):848–857

Bayanzadeh SA, Bolhari J, Noori R, Lavasani F, Karimi E (2007) The role of pharmacotherapeutic and psychosocial interventions in reducing drug related harm among addict prisoners. J Iran Univ Med Sci 14(55):47–55, [In Farsi] Cited in Momtazi S and Noroozi A (this volume)

Belenko S (1998) Research on drug courts: a critical review. Natl Drug Court Inst Rev 1(1):1–42
Betteridge G, Jurgens R (2008) Opioid substitution therapy in prisons: reviewing the evidence.
Canadian HIV/AIDS Legal Network, Canada, http://www.aidslaw.ca/publications/interfaces/downloadFile.php?ref=1293. Accessed 1 May 2013

Bewley-Taylor D, Hallam C, Allen R (2009) The incarceration of drug offenders: an overview. King's College, London

- Binswanger IA, Stern MF, Deyo RA, Heagerty PJ, Cheadle A, Elmore JG, Koepsell TD (2007) Release from prison a high risk of death for former inmates. New Engl J Med 356(2):157–165
- Bullock T (2003) Changing levels of drug use before, during and after imprisonment. In: Ramsay M (ed) Prisoners' drug use and treatment: seven research studies. Home office research study 267. Home Office, London, pp 23–49
- Bureau of Justice Statistics (2002) Recidivism of prisoners released in 1994. GPO, Washington, DC
- Cartier J, Farabee D, Prendergast ML (2006) Methamphetamine use, violence, and recidivism among California parolees. J Interpers Violence 21:435–445
- Center on Addiction and Substance Abuse (CASA) (2010) Behind bars II: substance abuse in America's prison population. CASA, New York
- Cornish JW, Metzger D, Woody GE, Wilson D, McLellan AT, Vandergrift B, O'Brien CP (1997) Naltrexone pharmacotherapy for opioid dependent federal probationers. J Subst Abuse Treat 14:529–534
- Dolan K, Khoei EM, Brentari C, Stevens A (2007) Prisons and drugs: a global review of incarceration, drug use, and drug services. Beckley Foundation, London
- Farabee D, Prendergast ML, Cartier J, Wexler W, Knight K, Anglin MD (1999) Barriers to implementing effective correctional treatment programs. Prison J 79(2):150–162
- Farnia M, Ebrahimi B, Shams A, Zamani S (2010) Scaling up methadone treatment for opioid-dependent prisoners in Iran. Int J Drug Policy 21:422–424
- Farrell M, Marsden J (2007) Acute risk of drug-related death among newly released prisoners in England and Wales. Addiction 103:251–255
- Farrington D, Welsh BC (2005) Randomized experiments in criminology: what have we learned in the past two decades? J Exp Criminol 1:9–38
- Ferri M, Amato L, Davoli M (2006) Alcoholics anonymous and other 12-step programmes for alcohol dependence. Cochrane Database Syst Rev 3:CD005032, Wiley and Sons, London
- Foster J, Brewer C, Steele T (2003) Naltrexone implants can completely prevent early (1-month) relapse after opiate detoxification: a pilot study of two cohorts totaling 101 patients with a note on naltrexone blood levels. Addict Biol 8:211–217
- Friedmann P, Hoskinson R, Gordon M, Schwartz R, Kinlock T, Knight K, Flynn PM, Welsh WN, Stein LAR, Sacks S, O'Connell DJ, Knudsen HK, Shafer MS, Hall E, Frisman LK (2012) Medication-assisted treatment in criminal justice agencies affiliated with the Criminal Justice-Drug Abuse Treatment Studies (CJ-DATS): availability, barriers and intentions. Subst Abus 33:9–18
- Gendreau P, Goggin C, Smith P (1999) The forgotten issue in effective correctional treatment: program implementation. Int J Offender Ther Comp Criminol 43(2):180–187
- Gillespie W (2005) A multilevel model of drug abuse inside prison. Prison J 85(2):223-246
- Goldstein PJ (1985) The drugs/violence nexus: a tripartite conceptual framework. J Drug Issues 15:493–506
- Gordon MS, Kinlock TW, Schwartz RP, O'Grady KE (2008) A randomized clinical trial of methadone maintenance for prisoners: findings at 6-months post-release. Addiction 103:1333–1342
- Gottfredson D, Exum L (2002) The Baltimore City drug court: one-year results from a randomized study. J Res Crime Deling 39:337–356
- Gottfredson DC, Kearley B, Najaka SS, Rocha C (2005) The Baltimore City drug treatment court: three-year self-report outcome study. Eval Rev 29(1):42–64
- Hawken A, Kleiman M (2009) Managing drug-involved probationers with swift and certain sanctions: evaluating Hawaii's HOPE. NCJ 229023. National Institute of Justice, Washington
- Hough M (2002) Drug user treatment within a criminal justice context. Subst Use Misuse 37:985-996

- Inciardi JA, Lockwood D, Quinlan JA (1993) Drug use in prison: patterns, processes, and implications for treatment. J Drug Issues 23(1):119–130
- Kendall PRW, Pearce M (2000) Drug testing in Canadian jails: to what end? Can J Public Health 91(1):26–28
- Krupitsky E, Nunes EV, Ling W, Illeperuma A, Gastfriend DR, Silverman BL (2011) Injectable extended-release naltrexone for opioid dependence: a double-blind, placebo-controlled, multicentre randomised trial. Lancet 377:1506–1513
- Landenberger NA, Lipsey MW (2005) The positive effects of cognitive-behavioral programs for offenders: a meta-analysis of factors associated with effective treatment. J Exp Criminol 1:451–476
- Ling W, Wesson DR (2003) Clinical efficacy of buprenorphine: comparisons to methadone and placebo. Drug Alcohol Depend 70(2):S49–S58
- Magill M, Ray L (2009) Cognitive-behavioral treatment with adult alcohol and illicit drug users: a meta-analysis of randomized controlled trials. J Stud Alcohol Drugs 70:516–527
- Mattick RP, Kimber J, Breen C, Davoli M (2008) Buprenorphine maintenance versus placebo or methadone maintenance for opioid dependence. Cochrane Database Syst Rev 2: CD002207
- Merrall LC, Kariminia A, Binswanger IA, Hobbs MS, Farrell M, Marsden J, Hutchinson SJ, Bird SM (2010) Meta-analysis of drug-related deaths soon after release from prison. Addiction 105:1545–1554
- Momtazi S, Rawson R, Musavinasab N, Hamzehlu MB (2012) Methadone maintenance treatment program for drug abuse prisoners in Iran. Abstract book of the National Institute on Drug Abuse international forum. Palm Springs, California
- Mumola CJ, Karberg JC (2006) Drug use and dependence: state and federal prisoners, 2004. Office of Justice Programs, Bureau of Justice Statistics, Washington, DC
- Nunn A, Zaller N, Dickman S, Trimbur C, Nijhawan A, Rich JD (2009) Methadone and buprenorphine prescribing and referral practices in US prison systems: results from a nationwide survey. Drug Alcohol Depend 105:83–88
- Nurco DN, Hanlon TE, Kinlock TW, Duszynski KR (1988) Differential criminal patterns of narcotic addicts over an addiction career. Criminology 26:407–423
- Oser CB, Knudsen HK, Staton-Tindall M, Taxman F, Leukefeld C (2009) Organizational-level correlates of the provision of detoxification services and medication-based treatment for substance abuse in correctional institutions. Drug Alcohol Depend 103(Suppl 1):S73–S81
- Payne J, Gaffney A (2012) How much crime is drug or alcohol related? Self reported attributions of police detainees. Trends & issues in crime and criminal justice 439 http://www.aic.gov.au/publications/current%20series/tandi/421-440/tandi439.html. Accessed 1 May 2013
- Pearson FS, Lipton DS (1999) A meta-analytic review of the effectiveness of corrections-based treatments for drug abuse. Prison J 79(4):384–410
- Pernanen K, Cousineau M, Brochu S, Sun F (2002) Proportions of crimes associated with alcohol and other drugs in Canada. Canadian Centre on Substance Abuse, Ottawa
- Phipps P, Korinek K, Aos S, Lieb R (1999) Research findings on adult corrections programs: a review. Washington State Institute for Public Policy, Olympia
- Shewan D, Gemmell M, Davies JB (1994) Prison as a modifier of drug using behavior. Addict Res Theory 2(2):203–215
- Sokolov BP, Schindler CW, Cadet JL (2004) Chronic methamphetamine increases fighting in mice. Pharmacol Biochem Behav 77:319–326
- Stephenson BL, Wohl DA, Golin CE, Tien HC, Stewart P, Kaplan AH (2005) Effect of release from prison and re-incarceration on the viral loads of HIV-infected individuals. Public Health Rep 120(1):84–88
- Stover H, Michels II (2010) Drug use and opioid substitution treatment for prisoners. Harm Reduction J 7:17-24
- Tardiff K, Gross E, Messner S (1986) A study of homicide in Manhattan, 1081. Am J Public Health 76:139–143

Taxman F, Perdoni ML, Harrison L (2007) Drug treatment services for adult offenders: the state of the state. J Subst Abuse Treat 32:239–254

- Vigdal GL, Stadler DW (1989) Controlling inmate drug use: cut consumption by reducing demand. Correct Today 51(3):96–97
- Wild TC, Roberts AB, Cooper EL (2002) Compulsory substance abuse treatment: an overview of recent findings and issues. Eur Addict Res 8:84–93
- Zurhold H, Stöver H, Haasen C (2004) Female drug users in European prisons best practice for relapse prevention and reintegration. Centre for Interdisciplinary Addiction Research, University of Hamburg, Hamburg