

THE BECKLEY FOUNDATION
DRUG POLICY PROGRAMME



**Prisons and Drugs:
A global review of incarceration,
drug use and drug services**

Kate Dolan, Effat Merghati Khoei, Cinzia Brentari, Alex Stevens
June 2007

REPORT TWELVE

Prisons and Drugs: A global review of incarceration, drug use and drug services

Kate Dolan, Effat Merghati Khoei, Cinzia Brentari, Alex Stevens

The Beckley Foundation Drug Policy Programme (BFDPP) is an initiative dedicated to providing a rigorous, independent review of the effectiveness of national and international drug policies. The aim of this programme of research and analysis is to assemble and disseminate material that supports the rational consideration of complex drug policy issues, and leads to a more effective management of the widespread use of psychoactive substances in the future. The BFDPP currently chairs the International Drug Policy Consortium (www.idpc.info), a global network of NGOs and professional networks who work together to promote objective debate around national and international drug policies, and provide advice and support to governments in the search for effective policies and programmes.

1. Introduction

Prisons play an important role in drug policy. They are used to punish people who break drug laws and they also hold a large number of people who have experience of drug use and drug problems. They therefore have an important part to play in attempts to reduce the harm caused by drugs. Imprisonment itself can be seen as one type of harm, as it causes problems for prisoners and their families and creates a large financial burden for taxpayers. These harms and costs are difficult to calculate, but there is little evidence that large scale imprisonment of drug offenders has had the desired results in deterring drug use or reducing drug problems (Bewley-Taylor, Trace, & Stevens, 2005).

In this paper, we examine the international prevalence of drug users, drug use and related problems in prisons and we report on the problems that are related to the issue of drugs in prison. We go on to examine the international guidelines and effective responses that have been developed in this area in the last decade. The paper is a review of the literature, based on a search of bibliographic databases including Medline, PubMed, ISI as well as EMBASE and contacts with researchers and practitioners in the field up to January 2007.

We hope that this paper provides an accessible guide to policymakers and service designers who are considering the appropriate responses, or evaluating and refining existing responses, to drug use in prisons in their own country.

2. Drug users and drug use in prisons

Drug users form a large proportion of prison populations in most developed countries. It is estimated that approximately fifty percent

of prisoners in the European Union have had a history of drug use throughout their lives (Zurhold, Stöver, & Haasen, 2004), and over 80% in the USA (Mumola, 1999). Injecting drug users (IDUs) are vastly over-represented, often accounting for half of all prison inmates (Dolan *et al.*, 2007), but only 1-3% of the broader community (Aceijas *et al.*, 2004). In the United Kingdom, 80% of surveyed prisoners reported having ever used any illicit drug (Boys *et al.*, 2002). Of sentenced prisoners surveyed, 32% of men and 34% of women reported severe drug dependence on at least one illicit drug (Singleton, Farrell, & Meltzer, 2003).

It is also known that large proportions of the populations of problematic drug users have been in prison. In the United States, eighty percent of injecting drug users have experienced incarceration at least once in their lives (Dolan, 1999). A cross sectional survey across ten cities from nine European countries found that over half the sampled heroin and cocaine users had been in prison (March, Oviedo-Joekes, & Romero, 2006).

Many prisoners continue to use drugs while they are in prison, despite attempts to prevent the entry of illicit substances. Approximately 40% of surveyed prisoners reported using drugs inside prison (Singleton *et al.*, 1997), although there are (some) suggestions that the use of cannabis, which is the most commonly used drug in British and many other prisons, has since fallen (Singleton *et al.*, 2005). Heroin is also used in prison, including by injection. The percentage of heroin dependent prisoners who continue to inject in prisons ranges between 16% and 60% according to European studies reviewed by Stöver *et al.* (2001). A more recent German study found that 75% of imprisoned injectors continued to inject in prison (Stark *et al.*, 2006).

The prison environment has an impact on inmates' drug using behaviours. Prison authorities' efforts to stop drugs coming in often leads to prisoners stopping their drug use, or using less frequently. However, there are other effects of placing offenders - some who have significant histories of drug use and some who do not - in close confinement with little constructive activity (Small *et al.* 2005; Swann & James, 1998).

Some studies suggest that prisoners switch between drugs when they enter prison. The length of incarceration, programmes like mandatory drug testing (MDT) and psychosocial characteristics of prisoners have been reported to be the most important influences on such switching (Boys *et al.*, 2002). In prisons that operate drug testing, some prisoners may switch to a drug with a short detection time (e.g. heroin) from one with a long detection time (e.g. cannabis) to minimise detection and punishment, although the numbers who reported doing this in an English survey of prisoners was small (Singleton *et al.*, 2005).

Prison may also be an environment in which people begin injecting heroin, as they meet experienced injectors in an environment where heroin is scarce (so encouraging injection as a more efficient mode of administration) and where there is little else to do (Stöver, 2001). A cross-sectional survey conducted in all prisons in England and Wales indicated that a quarter of those who used heroin started doing so in prison (Boys *et al.*, 2002). Six per cent of drug injectors from one Scottish prison and a quarter of the injectors from another started to inject while incarcerated (Gore, Bird, & Ross, 1995).

There is a lack of information on drug use, IDU and HIV in prisons in developing and transition countries, which points to a lack of assessment and health care services. Unsystematic programme evaluation in prisons has also been highlighted (Dolan *et al.*, 2004).

3. Prison as a risk environment

Drug users in prison represent three kinds of risk: Risk to public health; risk of reoffending; and risk to the security of the prison.

Drug misuse is seen as one of the three main health problems currently facing prison systems throughout Europe (MacDonald, 2004) and HIV/AIDS is of particular concern. Prisoners are one of the four key populations which have a higher prevalence of HIV infection than the general population (Hellard & Aitken, 2004; UNAIDS, 2006a) and imprisonment has been listed as one of the "social structural" factors in creating risks of HIV transmission (Rhodes *et al.*, 2005). The overlap in sexual and drug using networks between drug users who have been imprisoned and other social groups means that infectious diseases may spread from prisons to the whole society (Gyarmathy & Neaigis, 2005).

HIV prevalence is generally several times higher in prisons than in surrounding communities because of the considerable over-representation of injecting drug users (IDUs) among prisoners (Gaughwin, Douglas, & Wodak, 1991). These prisoners may then go on to share drug injecting equipment and have unprotected sex, both inside prison and back in the community (Estebanez *et al.*, 2002; UNAIDS, 2006b). A qualitative examination of HIV risk related to injecting drugs inside British Columbia prison illuminates that 'the harms normally associated with drug addiction, and injection drug use are exacerbated in prison' (Small *et al.*, 2005: 831).

There have been at least five outbreaks of HIV in prison documented. These outbreaks occurred in Scotland (29 cases, Taylor *et al.*, 1995), Australia (4 cases, Dolan & Wodak, 1999), Lithuania (291 cases, Caplinskiene *et al.*, 2003), Ukraine (unknown number, Gunchenko & Kozhan 1999) and Russia (400 cases, Nikolayev, 2001).

Worldwide evidence shows that injecting drugs and sharing equipment, sexual activities, tattooing and body piercing and physical assault are the main risk factors for HIV transmission in prison (Dolan & Wodak, 1999; Hellard & Aitken, 2004). Dolan *et al.* (2004) have examined evidence of HIV transmission in prisons in developing and transitional countries. IDU was found to be main mode of transmission of HIV as well as viral hepatitis in Eastern Europe and Central Asia, East Asia and the Pacific regions (Dolan *et al.*, 2004). Increased risk of HIV and viral hepatitis transmission in prison has been noted in the USA, Canada, Austria, Belgium, Ireland, Greece, Finland, France, Germany, Italy, Portugal, Russia, Australia, Iran, Thailand and Brazil (Beyrer *et al.*, 2003; Burattini, 2000; Butler *et al.*, 2003; Correctional Service Canada, 2003; Hellard, Hocking, & Crofts, 2004; Korte, Pykalainen, & Seppala, 1998; Koulierakis *et al.*, 1999; March, Oviedo-Joekes, & Romero, 2007; Rotily *et al.*, 2000; Rotily *et al.*, 2001; Sarang *et al.*, 2006; Small *et al.*, 2005; Swartz, Lurigio, & Weiner, 2004; Wood *et al.*, 2005; Zamani *et al.*, 2005).

Most countries lack adequate preventive measures and AIDS treatment in prisons (Lines *et al.*, 2004). As a result, people in prison are placed at increased risk of HIV infection, and prisoners living with HIV/AIDS are placed at increased risk of health decline and premature death.

As prisoners who are dependent on heroin often reduce their use while in prison, they lose their tolerance to opiates. This means that their body can no longer cope with the doses that they were taking before prison. So if they resume similar doses when they are released, they face a high risk of overdose and death. A Scottish study found that there was excess mortality in men who had been recently been released from prison, and that this could be attributed to loss of tolerance to heroin (Bird & Hutchinson, 2003). There is also the risk of prisoners dying while in prison, whether from suicide, loss of tolerance, or contaminated drugs.

One of the reasons that so many drug users are in prison is that there is a strong correlation between dependent drug use and offending (Brochu, Guyon, & Desjardins, 2001; Lurigio & Schwartz, 1999; Seddon, 2000). Many prisoners go back to lives of drugs and crime when they are released, and rates of reoffending amongst this group of prisoners are extremely high (Hough, 2002). This means that, if imprisonment can be used as an opportunity to address the prisoners' dependence, there may be significant benefits in reducing recidivism and the victimisation of the communities to which these prisoners return.

Often the most pressing reason for dealing with drugs is the immediate threat posed to the security of the prison. Drug use in prison is connected to bullying, assaults, corruption of prison staff and other threats to security, such as the presence of mobile phones (Penfold, Turnbull, & Webster, 2005). Phones may be smuggled into the prison to facilitate drug dealing, but can then also be used for planning escapes and other criminal activities.

4. International guidelines on drugs and HIV/AIDS Services in Prison

Assessment of serious drug involvement among prisoners shows the need for effective interventions (Leukefeld & Tims, 1992). Many developed countries have established some kind of standard for prisoners' health care and harm reduction services (Dolan & Wodak, 1999; Farrell *et al.*, 2005; Jürgens, 2006; Kothari, Marsden, & Strang, 2002; Leukefeld & Tims, 1992; Lines *et al.*, 2004; Zurhold, Stöver, & Haasen, 2004). Leukefeld and Tims (1992) highlight the significance of drug-related services within prison: addressing institutional management, reduction in drug-seeking behaviours and engaging drug users in rehabilitation process during incarceration (as incarceration may be the only contact that these people have with treatment providers).

Increasingly, prisons have drawn the attention of international bodies that work in the field of drugs and HIV. A variety of international instruments and declarations apply in this field. On prison conditions, these include:

- Standard Minimum Rules for the Treatment of Prisoners (United Nations, 1955).
- Body of Principles for the Protection of All Persons under Any Form of Detention or Imprisonment (United Nations, 1988).
- Basic Principles for the Treatment of Prisoners (United Nations, 1990).
- Recommendation No R (98)7 of the Committee of Ministers to Member States Concerning the Ethical and Organisational Aspects of Health Care in Prison (Council of Europe, 1998).

On HIV, they include:

- The WHO Guidelines on HIV Infection and AIDS in Prisons (World Health Organization, 1993).
- International Guidelines on HIV/AIDS and Human Rights (United Nations, 1996).
- Declaration of Commitment – United Nations General Assembly Special Session on HIV/AIDS (United Nations, 2001).

There have also been a variety of specific guidelines on prisons, health, drugs and HIV from the Council of Europe (1988; 1993) and the World Health Organization (HIPP, 2001; Møller *et al.*, 2007). These have tended to stress the principle of equivalence. This states that prisoners have the right to equivalent prevention and treatment services to those available outside prisons. It has been argued that, given the elevated risks of drug use and infectious diseases in prison, services should be particularly targeted at the prison environment (O'Brien & Stevens, 1997).

The Dublin declaration on HIV/AIDS in Prisons called on all governments to pay urgent attention to the matter of HIV/AIDS in prisons and related hazards such as risky sexual behaviours and injecting drugs in prisons (Lines *et al.*, 2004). It recognised that not all drug users will cease using drugs just because they are in prison. Zero-tolerance policies lead them to find unsafe ways to use drugs. There is therefore a role in prisons for programmes that reduce the harm associated with drug use.

Governments who deny prisoners' access to the services that are available outside prison may face legal challenges for denying the human rights of prisoners. For example, the British government settled out of court in 2006 with a group of people who had been denied adequate detoxification services in prison. It has also been sued for denying access to needle exchange in prison (in a case that has been referred to the European Court of Human Rights).

5. The provision of drug-related services in prison

Although numerous studies have examined various policies and interventions on drug use in general, few have focused on drug treatment and services in prisons (Jürgens, 2006). The provision of drug treatment in prison presents a considerable challenge and there is a lack of information that would assist public authorities in meeting this challenge.

In many countries, limited resources are dedicated to prisons, and security often takes precedence over treatment and health needs. Balancing the security and safety needs of the prison authorities

with the healthcare needs of prisoners can be difficult. Yet through the provision of effective drug treatment, prisons can have significant impact in reducing the health-related and criminal impacts of dependent drug use, and can also reduce prison management problems as more prisoners take on treatment, rather than being involved in continued drug use and dealing.

Prisoners retain the right to adequate healthcare (Arnott, 2001; Lines *et al.*, 2004). Providing effective drug services in prison can also contribute to reductions in criminal recidivism (Dolan *et al.*, 2005). However, the provision of such services can be difficult. Despite increases in the availability of drug services in prison, as seen in Europe in the 1990s (Stevens, 1998) treatment availability is often limited. Security concerns are raised if inmates are required to move between different areas of the prison for treatment. And there may be opposition to some treatment modalities among prison or government authorities. For example, methadone maintenance, which has become increasingly available in European prisons since the mid 1990s, is still provided on a patchy basis due to the desire to make prisoners abstain from drugs, the perception of methadone as a psychoactive drug that is unsuitable for therapy, a lack of understanding of dependence as a chronic disease and limited resources and expertise among prison administration and staff (Michels, Stöver, & Gerlach, 2007; Stöver, Hennebel, & Casselman, 2004). Methadone maintenance is also available in prison in Australia, Canada and Puerto Rico, but it remains limited in the USA (Dolan *et al.*, 2005; Heimer *et al.*, 2006; Rich *et al.*, 2005; Sibbald, 2002).

Harm reduction strategies that are used outside prison are often regarded by prison administrations and staff as undermining the measures taken inside prison to reduce the supply of drugs (Stöver *et al.* 2001). There is often denial by prison authorities that the problem of drug use and injecting exists and there are limitations in the introduction of infection prevention services due to budget constraints or overcrowding (MacDonald 2004). According to the Dublin declaration on HIV/AIDS in prisons in Europe and Central Asia (Lines *et al.*, 2004: 3) ‘the failure to implement comprehensive programmes that are known to reduce the risk of HIV transmission in prisons and to promote the health of prisoners living with HIV/AIDS is often due to lack of political will or to policies that prioritize zero-tolerance to drug use over zero-tolerance to HIV/AIDS. For these and other reasons, there is limited availability of harm reduction services in the prisons of Central and Eastern Europe (MacDonald, 2005) and elsewhere.

6. Evidence on effectiveness of drug treatment and harm reduction in prison

Evidence is available on detoxification, maintenance prescribing, needle exchanges, drug-free units and therapeutic communities

in prisons. It suggests that all drug services in prison should be based on an individualized assessment of the prisoner’s needs, leading to an effort to match these needs to appropriate services (Friedmann, Taxman, & Henderson, 2007). Treatments should also be provided in a systematic way in order to integrate the provision of the various evidence-based practices with each other, with prison security and the need for continuity with services and supervision in the community. For example, a qualitative English study recently found that tight controls on entry of drugs and a lack of adequate detoxification had led to a high level of bullying, as some prisoners coerced other inmates who were receiving prescribed drugs to hand them over (Penfold, Turnbull, & Webster, 2005). This suggests that tight controls on entry should be combined with adequate provision of detoxification or maintenance prescribing in order to minimise both illicit drug use and bullying within the prison. As another example, the effect of methadone maintenance in prison has been found to be enhanced when continuity of treatment is provided on release for those who receive opiate substitute drugs during their imprisonment (Dolan *et al.*, 2005).

The issue of aftercare is important. Some studies have suggested that aftercare is necessary to optimise the effects of in-prison drug treatment on reducing reoffending (Bullock, 2003), but there are methodological difficulties with this research and the precise nature of effective aftercare is unknown (Pelissier, Jones, & Cadigan, 2007)

Detoxification

Detoxification is the management of withdrawal symptoms associated with the cessation of a drug of dependence. Clinical management of detoxification in prison assists the reduction of drug use in prison and fulfils the principle of equivalence. It is the most common intervention provided to drug dependent offenders who are received into custody in the UK (Department of Health *et al.*, 2006).

Detoxification can be managed in a number of ways, depending on the drug or drugs of dependence. Medical intervention may assist the detoxification process, particularly in the case of opiate or severe alcohol dependence. Alternatively, detoxification can be managed non-medically, through the provision of psychological support and care. Methadone can be safely used in prisons to assist opiate withdrawal. Buprenorphine can also be offered but can be associated with inmate management concerns. Lofexidine is a viable, non-opiate alternative pharmacotherapy. Symptomatic treatments should also be available.

In all cases, management of withdrawal in prison settings should be informed by assessment of

- The inmate’s severity of drug dependence (using a scale designed for this purpose).
- The inmate’s wishes.
- and, where possible, information provided by clinicians involved in the care and treatment of the inmate in the community (*Ibid*).

There is a danger that prisoners who have been detoxified, and so

have reduced level of tolerance, may experience overdose if they return to using their previous doses of illicit opiates. For this and other reasons, detoxification services should lead on to other forms of support and should provide warnings of the dangers of overdose (Strang *et al.*, 2003).

Recommendations:

Due to the paucity of information regarding detoxification in prison, the majority of recommendations are based on evidence gathered in community settings.

- All inmates should be assessed for substance dependence and risk of withdrawal
- Inmates experiencing opiate withdrawal should be offered a range of detoxification methods, including pharmacotherapies and symptomatic treatment.

Drug-free wings and therapeutic communities

Voluntary drug-free units or drug-free wings are a form of residential correctional treatment program with the primary objective of rehabilitating offenders with histories of illicit drug use. Inmates residing in drug-free wings are segregated from the general prison population and pledge to abstain from drug use, usually in return for increased privileges such as recreational facilities or improved accommodation. Inmates are regularly urine tested and punishments for a positive urinalysis include loss of privileges or expulsion from the program. Drug-free wings may assist inmates to reduce their drug use while in prison and to access drug treatment on release from prison. Further research, clarifying the elements of programmes conducted in drug-free wings and their long-term impacts on drug use and criminal recidivism, is required (Incorvaia & Kirby, 1997). Drug free wings operate in several European countries and also for a small number of inmates in half of Australian prisons. The cost of a drug-free wing in Australia has been calculated as approximately \$Aus 208 per prisoner per day. This was equivalent to the cost of keeping a prisoner in maximum security (Black, Dolan & Wodak 2004).

Therapeutic communities are intensive treatment programs for prisoners with a history of severe drug dependence, which can be provided to prisoners who have normally a substantial time of their sentence still to serve (in Europe normally 12-15 months). Therapeutic communities are drug free environment where intensive treatment, care and rehabilitation programs are offered on a 24-hour, residential basis.

A systematic review of available evidence on the effects of therapeutic communities found two high quality studies of TCs in prison in the USA (Smith, Gates, & Foxcroft, 2006). One of these studies found that an in-prison therapeutic community (plus aftercare) produced superior effects (in terms of reduced reimprisonment) than imprisonment without treatment (Wexler *et al.*, 1999). The other found that an in-prison TC had superior effects for prisoners who had both mental health and substance use

problems compared to in-prison mental health programmes (Sacks *et al.*, 2004). These and other studies suggest that it is very important to provide aftercare when people are released from in-prison TCs. Without such aftercare, the benefits of the TC may be much smaller (Inciardi *et al.*, 1997; Wexler *et al.*, 1999). A potential limitation on the provision of therapeutic communities is that they are quite expensive to run. This was one of the reasons why the therapeutic community at Österåker Prison in Sweden was cut back, despite showing positive outcomes (Åke Farbring, 2000).

Whilst there is a conspicuous absence of research on the effectiveness of prison drug treatment in the UK and Europe there are examples of promising practice. These include the Österåker milieu therapy program and the 12-step treatment programme delivered in England by the Rehabilitation of Addicted Prisoners Trust (RAPt). A small reconviction study reported that 25% of RAPt program graduates had been reconvicted of a standard list offence within one year of release from prison, compared to 38% of a comparison group of matched offenders (Liriano, 2002). This study again suggested that aftercare was important in sustaining the changes made in prison.

Other elements that have often been associated with successful drug treatment programmes in prison are that they are based on social learning theory, employ authority structures with clear rules and sanctions, anti criminal modelling and reinforcement of prosocial behaviour, train offenders in pragmatic personal and social problem solving, have programme staff that utilise community resources and encourage empathetic relationships between staff and participants.

Recommendations:

- Existing drug-free wings and therapeutic communities should be evaluated.
- Specific program elements should be clearly defined and their impact on drug use and related criminal recidivism evaluated.
- Results of these evaluations should inform further decision-making regarding the continuation or expansion of drug-free wings.
- Therapeutic communities in prison seem to be effective, but are quite expensive, so alternative ways of delivering a more cost effective service are needed. This could include treatment in the community under a court order.
- Where treatment facilities are placed in prisons, adequate aftercare should also be provided.

Maintenance prescribing

Maintenance prescribing refers to the medium- to long-term provision of opioid agonists to heroin- or other opioid-dependent people for the purposes of suppressing opioid cravings and improving the health and social well-being of the patient (Cropsey, Villalobos, & St Clair, 2005; Hall, Ward, & Mattick, 1998). Methadone is the most commonly used drug for maintenance

purposes, but other drugs, including buprenorphine, are also used.

The majority of research evidence on maintenance prescribing in the community focuses on methadone maintenance treatment (MMT). The goals of MMT include reducing heroin and other opioid use and reducing criminal behaviour by heroin users. MMT has recently been called “one of the most highly researched and evidence-based treatments for illicit drug dependence” (Trafton, Minkel, & Humphreys, 2006). MMT is associated with reductions in injecting drug use and reduced frequency of injecting, benefits that produce reductions in HIV, mortality and hepatitis C transmission and reincarceration (Dolan, Hall, & Wodak, 1996; Dolan & Wodak, 1999).

An individual’s drug use is usually much less frequent in prison than in the community (Dolan *et al.*, 1996). For this reason it is sometimes argued that maintenance prescribing in prison is unnecessary. However, it is the rarity of injecting in prison, and the risks associated with this practice, that heighten the need for maintenance treatment (Dolan, Hall, & Wodak, 1998). Moreover, there is evidence that people who are in MMT before imprisonment and are then incarcerated without MMT will tend to return to problematic drug use and injecting in prison (Bollini, 2001).

MMT in prison results in: reduced drug use, reduced transmission of blood borne viruses, reduced mortality and reduced recidivism and re-incarceration. This is particularly true in the absence of other harm reduction measures in prison (Stöver *et al.*, 2004). All prisoners with a history of heroin or other opioid dependence, including those already receiving MMT prior to imprisonment and those who wish to commence MMT in prison, should be able to access treatment. In areas where buprenorphine is available in the community, it should be available in prison. This enables continuity of care.

Recommendations:

- Methadone maintenance treatment should be available to all prisoners with a history of heroin or other opioid dependence
- Consideration should be given to offering at least one other form of maintenance treatment, for example, buprenorphine.
- Dosing levels must be adequate to suppress heroin cravings and withdrawal symptoms.
- Treatment should not be time-limited.
- Maintenance treatment programs in prison should be stringently evaluated
- Better links and continuity of care are needed between prisons and the community based services, in order to continue treatment when entering to prison or upon release

Needle exchange in prison

The evidence on prison needle exchange is limited by the small number of countries that have introduced it. But in most cases where it has been introduced, starting in Switzerland in 1992, it

has been accompanied by evaluation. These evaluations have been summarised (Stöver & Nelles, 2003) and have tended to find:

- Sharing of injecting equipment is dramatically reduced.
- No increase in injecting.
- No increase in drug use.
- No evidence of misuse of injecting equipment (e.g. to threaten or attack prison staff).

A study in two Berlin prisons found that rates of sharing of injecting equipment fell from 71% of imprisoned injectors to virtually none following the introduction of a needle exchange programme (Stark *et al.* 2006). There were no cases of HIV infection, but a few new Hepatitis C infections. This suggests that needle exchange in prison, as outside, may be more effective in preventing the transmission of HIV than HCV.

Recommendations:

- In countries where needle exchange is provided outside prison, consideration should also be given to providing it inside prison.
- The introduction of needle exchange programmes should be carefully prepared, including providing information and training for prison staff.
- The mode of delivery of needles and syringes (e.g. by hand, or by dispensing machine) should be chosen in accordance with the environment of the prison and the needs of its population.
- Other programmes for the prevention of HIV and viral Hepatitis, and other drug treatment programmes, should be provided alongside needle exchange programmes.

7. Conclusion

This brief review has demonstrated that drug use poses serious problems for prisons and that prisons are an important setting for the provision of drug and HIV services. Several international recommendations and guidelines have now pointed the way to increasing the coverage and quality of drug services in prison. The minimum standard to which prison drug services should aim is to provide an equivalent range and standard of drug services to that which is available outside the prison. Given the importance of prison as an environment for the development of drug problems and the transmission of HIV, consideration should also be given to providing drug services that are specific to the prison population.

A range of services that are effective outside prison have also been demonstrated to be valuable within prisons. These include detoxification, maintenance prescribing, the provision of therapeutic communities and needle exchange. A variety of services will be necessary to meet the diverse needs of prisoners, who have different experiences and patterns of drug use. All these services will be most effective where they are integrated into a system that provides continuity of treatment as people enter and exit the prison environment. Drug use in prison is a serious problem which was, for a long time, neglected. Many countries are now taking up opportunities to provide effective services. There is still potential to improve prison drug services in order to reduce the damage done by drug use to the health and safety of prison staff, of prisoners and of the communities to which the prisoners will return.

References

- Aceijas, C., Stimson, G.V., Hickman, M., Rhodes, T., & United Nations Reference Group on HIV/AIDS Prevention and Care among IDU in Developing and Transitional Countries (2004). Global overview of injecting drug use and HIV infection among injecting drug users. *AIDS* 18(17), 2295-2303.
- Åke Farbring, C. (2000). The Drug Treatment Programme at Österåker Prison: Experience from a Therapeutic Community During the Years 1978-1998. *American Jails* (March-April 2000), 85-96.
- Arnott, H. (2001). HIV/AIDS, prisons, and the Human Rights Act. *European Human Rights Law Review*, 1, 71-77.
- Bewley-Taylor, D., Trace, M., & Stevens, A. (2005). Incarceration of drug offenders: Costs and impacts. Briefing paper 7. Oxford: Beckley Foundation.
- Beyrer, C., Jittiwutikarn, J., Teokul, W., Razak, M.H., Suriyanon, V., Srirak, N., Vongchuk, T., Tovanabutra, S., Sripaipan, T., & Celentano, D.D. (2003). Drug use, increasing incarceration rates, and prison-associated HIV risks in Thailand. *Aids and Behavior*, 7(2), 153-161.
- Bird, S.M., & Hutchinson, S.J. (2003). Male drugs-related deaths in the fortnight after release from prison: Scotland 1996-99. *Addiction* (98), 185-190.
- Bollini, P. (2001). HIV in Prisons: A Reader with Particular Relevance to the Newly Independent States. Copenhagen: World Health Organization.
- Boys, A., Farrell, M., Bebbington, P., Brugha, T., Coid, J., Jenkins, R., Lewis, G., Marsden, J., Meltzer, H., Singleton, N., & Taylor, C. (2002). Drug use and initiation in prison: results from a national prison survey in England and Wales. *Addiction*, 97(12), 1551-1560.
- Brochu, S., Guyon, L., & Desjardins, L. (2001). Crime careers and substance abuse among incarcerated men & women. *Canadian Journal of Criminology*, 43(2), 173-196.
- Burattini, M.N., Massad, E., Rozman, M., Azevedo, R.S., & Carvalho, H.B. (2000). Correlation between HIV and HCV in Brazilian prisoners: evidence for parenteral transmission inside prison. *Revista De Saude Publica*, 34(5), 431-436.
- Bullock, T. (2003). Key findings from the literature on the effectiveness of drug treatment in prison. In Ramsay, M. (ed) *Prisoners' Drug Use and Treatment: Seven Research Studies. Home Office Research Study 267*. London: Home Office
- Butler, T., Levy, M., Dolan, K., & Kaldor, J. (2003). Drug use and its correlates in an Australian prisoner population. *Addiction Research & Theory*, 11(2), 89-101.
- Caplinskiene I, Caplinskas S, & Griskevicius, A. (2003) Narcotic abuse and HIV infection in prisons (Lithuanian). *Medicina*, 39,797-803.
- Correctional Service Canada (2003). Infectious diseases prevention and control in Canadian Federal Penitentiaries 2000-2001. Ottawa: Correctional Service Canada Correctional Service Canada.
- Council of Europe (1988). *Parliamentary Assembly Recommendation 1080 on a coordinated European policy to prevent the spread of HIV in prisons* Strasbourg: Council of Europe
- Council of Europe (1993). *Committee of Ministers Recommendation 1R (93)6 concerning prison and criminological aspects of the control of transmissible diseases including AIDS and related health problems in prison* Strasbourg: Council of Europe
- Council of Europe (1998). Recommendation No R(98)7 of the Committee of Ministers to Member States Concerning the Ethical and Organisational Aspects of Health Care in Prison. Strasbourg: Council of Europe Committee of Ministers.
- Cropsey, K.L., Villalobos, G.C., & St Clair, C.L. (2005). Pharmacotherapy treatment in substance-dependent correctional populations: a review. *Subst Use Misuse*, 40(13-14), 1983-1999, 2043-1988.
- Department of Health, National Treatment Agency for Substance Misuse, Royal College of General Practitioners, Royal College of Psychiatrists, Royal Pharmaceutical Society of Great Britain (2006). *Clinical Management of Drug Dependence in the Adult Prison Setting*. http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_063064 (accessed 17th June 2007).
- Dolan, K., Hall, W., & Wodak, A. (1996). Methadone maintenance reduces injecting in prison. *Bmj*, 312(7039), 1162.
- Dolan, K., Wodak, A., Hall, W., Gaughwin, M., & Rae, F. (1996). HIV risk behaviour of IDUs before, during and after imprisonment in New South Wales. *Addiction Research*, 4(2), 151-160.
- Dolan, K., Hall, W., & Wodak, A. (1998). The provision of methadone within prison settings. In J. Ward, R. Mattick, & W. Hall (Eds.), *Methadone Maintenance Treatment and Other Opioid Replacement Therapies*. Amsterdam: Harwood Academic Publishers.
- Dolan, K. (1999). The epidemiology of Hepatitis C infection in prison population. *Sydney: National Drug and Alcohol Research Centre*.
- Dolan, K., & Wodak, A. (1999). HIV transmission in a prison system in an Australian State. *Medical Journal of Australia*, 171(1), 14-17.
- Dolan, K., Kite, B., Black, E., Aceijas, C., & Stimson, G. (2004). HIV in prison in developing and transitional countries: A review of imprisonment rates, drug injectors and HIV prevalence and incidence (p. 25). Sydney: National Drug & Alcohol Research Centre.
- Dolan, K., Shearer, J., White, B., Zhou, J., Kaldor, J., & Wodak, A.D. (2005). Four-year follow-up of imprisoned male heroin users and methadone treatment: mortality, re-incarceration and hepatitis C infection. *Addiction*, 100(6), 820-828.
- Dolan, K., Kite, B., Black, E., Aceijas, C., Stimson, G.V., & for the Reference Group on HIV/AIDS Prevention and Care among Injecting Drug Users in Developing and Transitional Countries (2007). HIV in prison in low-income and middle-income countries. *Lancet Infectious Diseases*, 7, 32-41.
- Estebanez, P., Zunzunegui, M.V., Aguilar, M.D., Russell, N., Cifuentes, I., & Hankins, C. (2002). The role of prisons in the HIV epidemic among female injecting drug users. *AIDS Care*, 14(1), 95-104.
- Farrell, M., Marsden, J., Ling, W., Ali, R., & Gowing, L. (2005). Evidence for action technical papers: Effectiveness of drug dependence treatment in preventing HIV among injecting drug users. Geneva World Health Organization.
- Friedmann, P.D., Taxman, F.S., & Henderson, C.E. (2007). Evidence-based treatment practices for drug-involved adults in the criminal justice system. *Journal of Substance Abuse Treatment*, 32, 267-277.
- Gaughwin, M., Douglas, R., & Wodak, A. (1991). Behind bars: Risk behaviours for HIV transmission in prisons, a review. In j. Norberry, S. Gerull, & M. Gaughwin (Eds.), *HIV/AIDS and Prisons* pp. 89-108). Canberra: Australian Institute of Criminology.
- Gore, S.M., Bird, A.G., & Ross, A.J. (1995). Prison rites: starting to inject inside. *BMJ*, 311(7013), 1135-1136.
- Gunchenko, A. & Kozhan, N. (1999) HIV infection in the penitentiaries of Ukraine. *Zhurnal Mikrobiologii, Epidemiologii I Immunobiologii* 1, 31-33.
- Gyarmathy, V.A., & Neaigus, A. (2005). Marginalized and socially integrated groups of IDUs in Hungary: potential bridges of HIV infection. *Journal of Urban Health-Bulletin of the New York Academy of Medicine*, 82(3), IV101-IV112.
- Hall, W., Ward, J., & Mattick, R. (1998). *Methadone Maintenance Treatment and Other Opioid Replacement Therapies* Amsterdam: Harwood Academic Publishers
- Heimer, R., Catania, H., Newman, R.G., Zambrano, J., Brunet, A., & Ortiz, A.M. (2006). Methadone maintenance in prison: Evaluation of a pilot program in Puerto Rico. *Drug and Alcohol Dependence*, 83(2), 122-129.
- Hellard, M.E., & Aitken, C.K. (2004). HIV in prison: what are the risks and what can be done? *Sexual Health*, 1(2), 107-113.
- Hellard, M.E., Hocking, J.S., & Crofts, N. (2004). The prevalence and the risk behaviours associated with the transmission of hepatitis C virus in Australian correctional facilities. *Epidemiology and Infection*, 132(3), 409-415.
- HIPP (2001). European guidelines on HIV/AIDS and hepatitis in prison. Copenhagen: WHO Health in Prisons Project.
- Hough, M. (2002). Drug user treatment within a criminal justice context. *Substance Use & Misuse*, 37(8-10), 985-996.
- Inciardi, J.A., Martin, S.S., Butzin, C.A., Hooper, R.M., & Harrison, L.D. (1997). An effective model of prison-based treatment for drug-involved offenders. *Journal of Drug Issues*, 27(2), 261-278.
- Incorvaia, D., & Kirby, N. (1997). A formative evaluation of a drug free unit in a correctional services setting. *International Journal of Offender Therapy and Comparative Criminology*, 43, 231-249.
- Jürgens, R. (2006). Evidence for action technical papers: Effectiveness of interventions to manage HIV/AIDS in prison settings. Geneva World Health Organization.
- Korte, T., Pykalainen, J., & Seppala, T. (1998). Drug abuse of Finnish male prisoners in 1995. *Forensic Science International*, 97(2-3), 171-183.
- Kothari, G., Marsden, J., & Strang, H. (2002). Opportunities and obstacles for effective treatment of drug misusers in the criminal justice system in England and Wales. *British Journal of Criminology*, 42(2), 412-432.
- Koulierakis, G., Agrafiotis, D., Gnardellis, C., & Power, K.G. (1999). Injecting drug use amongst inmates in Greek prisons. *Addiction Research*, 7(3), 193-212.

- Leukefeld, C.G., & Tims, F.M. (1992). Drug abuse treatment in prisons and jails. In U.S.D.o.H.a.H. services, & N.I.o.D. Abuse (Eds.). Washington: National Institute on Drug Abuse.
- Lines, R., Jürgens, R., Stöver, H., Kaliakbarova, G., Laticevski, D., Nelles, J., MacDonald, M., & Curtis, M. (2004). Dublin Declaration on HIV/AIDS in Prisons in Europe and Central Asia. Prison health is public health. Dublin, Ireland, February 23, 2004. *Canadian HIV/AIDS Policy & Law Review*, 9(1), 41-45.
- Liriano, S. (2002). *Reconviction Analysis of the RAPt Drug Treatment Programme*. Home Office RDS Internal Report 01/02 London: Home Office
- Lurigio, A.J., & Schwartz, J.A. (1999). The nexus between drugs and crime: theory, research and practice. *Federal Probation*, 63, 67-72.
- MacDonald, M. (2005). *A Study of the Health Care Provision, Existing Drug Services and Strategies Operating in Ten Countries from Central and Eastern Europe* Helsinki: HEUNI
- March, J.C., Oviedo-Loekes, E., & Romero, M. (2006). Drugs and social exclusion in ten European cities. *European Addiction Research*, 12(1), 33-41.
- March, J.C., Oviedo-Loekes, E., & Romero, M. (2007). Factors associated with reported hepatitis C and HIV among injecting drug users in ten European cities. *Enfermedades Infecciosas Y Microbiología Clínica*, 25(2), 91-97.
- Michels, I., Stöver, H., & Gerlach, R. (2007). Substitution treatment for opioid addicts in Germany. *Harm Reduction Journal*, 4(1), 5.
- Møller, L., Stöver, H., Jürgens, R., Gatherer, A., & Nikogosian, H. (2007). Health in Prisons: A WHO guide to the essentials in prison health. Copenhagen: WHO Regional Office for Europe.
- Mumola, C.J. (1999). Substance Abuse and Treatment, State and Federal Prisoners, 1997. Bureau of Justice Statistics, Special Report. Washington, DC: U.S. Department of Justice.
- Nikolayev Y. (2001). *HIV on plank prison beds: Immunodeficiency virus outbreak registered in Nizhnekamsk colony*, www.segonya.ru (accessed 1st February 2002)
- O'Brien, O., & Stevens, A. (1997). *A question of equivalence: A report on the implementation of international guidelines on HIV/AIDS in prisons of the European Union* London: Cranstoun Drug Services
- Pelissier, B., Jones, N., & Cadigan, T. (2007). Drug treatment aftercare in the criminal justice system: A systematic review. *Journal of Substance Abuse Treatment*, 32(3), 311-320.
- Penfold, C., Turnbull, P.J., & Webster, R. (2005). *Tackling prison drug markets: An exploratory qualitative study*. Home Office Online Report 39/05 London: Home Office
- Rhodes, T., Singer, M., Bourgois, P., Friedman, S.R., & Strathdee, S.A. (2005). The social structural production of HIV risk among injecting drug users. *Social Science & Medicine*, 61(5), 1026-1044.
- Rich, J.D., Boutwell, A.E., Shield, D.C., Key, R.G., McKenzie, M., Clarke, J.G., & Friedmann, P.D. (2005). Attitudes and practices regarding the use of methadone in US State and federal prisons. *Journal of Urban Health-Bulletin of the New York Academy of Medicine*, 82(3), 411-419.
- Rotily, M., Delorme, C., Galinier, A., Escaffre, N., & Moatti, J.P. (2000). HIV risk behavior in prison and factors related to reincarceration among injecting drug users. *Presse Medicale*, 29(28), 1549-1556.
- Rotily, M., Weilandt, C., Bird, S.M., Kall, K., Van Haastrecht, H.J.A., Iandolo, E., & Rousseau, S. (2001). Surveillance of HIV infection and related risk behaviour in European prisons - A multicentre pilot study. *European Journal of Public Health*, 11(3), 243-250.
- Sacks, S., Sacks, J.Y., McKendrick, K., Banks, S., & Stommel, J. (2004). Modified TC for MICA offenders: crime outcomes. *Behavioral Sciences & the Law*, 22(4), 477-501.
- Sarang, A., Rhodes, T., Platt, L., Kirzhanova, V., Shelkovich, O., Volnov, V., Blagovo, D., & Rylkov, A. (2006). Drug injecting and syringe use in the HIV risk environment of Russian penitentiary institutions: qualitative study. *Addiction*, 101(12), 1787-1796.
- Seddon, T. (2000). Explaining the drug-crime link: theoretical, policy and research issues. *Journal of Social Policy*, 29(1), 95-107.
- Sibbald, B. (2002). Methadone maintenance expands inside federal prisons. *CMAJ*, 167(10), 1154-.
- Singleton, N., Meltzer, H., Gatward, R., Coid, J., & Deasy, D. (1997). Psychiatric morbidity among prisoners: Summary report. London: National Statistics.
- Singleton, N., Farrell, M., & Meltzer, H. (2003). Substance misuse among prisoners in England and Wales. *International Review of Psychiatry*, 15(1-2), 150-152.
- Singleton, N., Pendry, E., Simpson, T., Goddard, E., Farrell, M., Marsden, J., & Taylor, C. (2005). The impact of mandatory drug testing in prisons. Home Office Online Report 03/05. London: Home Office.
- Small, W., Kain, S., Laliberte, N., Schechter, M.T., O'Shaughnessy, M.V., & Spittal, P.M. (2005). Incarceration, addiction and harm reduction: inmates experience injecting drugs in prison. *Substance Use & Misuse*, 40(6), 831-843.
- Smith, L.A., Gates, S., & Foxcroft, D. (2006). Therapeutic communities for substance related disorders. The Cochrane Database of Systematic Reviews.
- Stark, K., Herrmann, U., Ehrhardt, S., & Bienzle, U. (2006). A syringe exchange programme in prison as prevention strategy against HIV infection and hepatitis B and C in Berlin, Germany *Epidemiology and Infection*, 134(4), 814-819.
- Stevens, A. (1998). The development of drug services in European prisons, 1995-1998. *Social Work in Europe*, 5(2), 16-21.
- Stöver, H. (2001). *An overview study: Assistance to drug users in European Union prisons* Lisbon: EMCDDA
- Stöver, H., & Nelles, J. (2003). Ten years of experience with needle and syringe exchange programmes in European prisons. *International Journal of Drug Policy*, 14(5-6), 437-444.
- Stöver, H., Hennebel, L.C., & Casselman, J. (2004). *Substitution Treatment in European Prisons* London: Cranstoun Drug Services Publishing
- Strang, J., McCambridge, J., Best, D., Beswick, T., Bearn, J., Rees, S., & Gossop, M. (2003). Loss of tolerance and overdose mortality after inpatient opiate detoxification. *British Medical Journal*, 326(7396), 959-960.
- Swann, R., & James, P. (1998). The Effect of the Prison Environment upon Inmate Drug Taking Behaviour. *The Howard journal of criminal justice*, 37(3), 252-265.
- Swartz, J.A., Lurigio, A.J., & Weiner, D.A. (2004). Correlates of HIV-risk behaviors among prison inmates: Implications for tailored aids prevention programming. *Prison Journal*, 84(4), 486-504.
- Taylor A, Goldberg D, Emslie J, Wrench J, Gruer L, Cameron S, Black, J., Davis, B., McGregor, J., Follett, E., Harvey, J., Basson, J, McGavigan, J. (1995) Outbreak of HIV infection in a Scottish Prison. *British Medical Journal*, 310(6975):289-292.
- Trafton, J.A., Minkel, J., & Humphreys, K. (2006). Determining Effective Methadone Doses for Individual Opioid-Dependent Patients. *PLoS Medicine*, online journal(10.1371/journal.pmed.0030080).
- UNAIDS (2006a). The global AIDS epidemic: At risk and neglected, four key population pp. 103-123). Geneva: UNAIDS.
- UNAIDS (2006b). 2006 Report on the Global AIDS Epidemic. Geneva: UNAIDS.
- United Nations (1955). Standard Minimum Rules for the Treatment of Prisoners. Geneva: United Nations.
- United Nations (1988). Body of Principles for the Protection of All Persons under Any Form of Detention or Imprisonment.
- United Nations (1990). Basic Principles for the Treatment of Prisoners, GA resolution 45/111. New York: United Nations.
- United Nations (1996). The International Guidelines on HIV/AIDS and Human Rights. Geneva: United Nations Office of the High Commissioner for Human Rights.
- United Nations (2001). Declaration of Commitment on HIV/AIDS - United Nations General Assembly Twenty-sixth Special Session. New York: United Nations.
- Wexler, H.K., De Leon, G., Thomas, G., Kressel, D., & Peters, J. (1999). The Amity Prison TC Evaluation: Reincarceration Outcomes. *Criminal Justice and Behavior*, 26(2), 147-167.
- Wood, E., Li, K., Small, W., Montaner, J.S., Schechter, M.T., & Kerr, T. (2005). Recent incarceration independently associated with syringe sharing by injection drug users. *Public Health Reports*, 120(2), 150-156.
- World Health Organization (1993). WHO Guidelines on HIV Infection and AIDS in Prisons. Geneva: World Health Organization.
- Zamani, S., Kihara, M., Gouya, M.M., Vazirian, M., Ono-Kihara, M., Razzaghi, E.M., & Ichikawa, S. (2005). Prevalence of and factors associated with HIV-1 infection among drug users visiting treatment centers in Tehran, Iran. *AIDS*, 19(7), 709-716.
- Zurhold, H., Stöver, H., & Haasen, C. (2004). Female drug users in European Prisons – best practice for relapse prevention and reintegration: Hamburg: Centre for Interdisciplinary Addiction Research, University of Hamburg.UNODC, *Annual Report*, 2005
- UNODC, *Progress Update on UNODC Strategy*, Vienna, April 2006