

# 14. Drug treatment and harm reduction in prisons

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## Key points

- Estimates suggest that half the prisoners in the EU have a history of drug use, many with problematic injecting drug use.
- Drug use is one of the main problems facing prison systems. It threatens security, dominates relationships between prisoners and staff and leads to violence, bullying and mobbing for both prisoners and often their spouses and friends in the community.
- The prevalence of infectious diseases (particularly HIV and AIDS, hepatitis B and C, and TB) is often much higher in prisons than outside and often related to injecting drug use.
- High rates of injecting drug use, if coupled with lack of access to evidence-based prevention measures, can result in a frighteningly rapid spread of HIV and hepatitis B and C.
- Drug dependence services and measures to address infectious diseases in prisons should be equivalent to the services provided outside prisons. Continuity of treatment for prisoners entering and leaving prison necessitates close cooperation between prisons and external agencies.
- Relapses into drug use and fatal overdoses after release are widespread. A wide range of drug services should be available to prisoners, based on local and individual needs.
- Prison drug strategies require action for individual behavioural change as well as on the structural level. National and international networking and the exchange of good practice models seems to be a valuable method for all prison systems. Guidelines and detailed protocols are needed at national level in delivering adequate health care services (for example, for substitution treatment for opiate-dependent prisoners).
- Drug services in prisons should be subject to monitoring and evaluation.

## Introduction

### ***Drug use and the consequences for prisoners, prisons and prison health care***

Drug use and bloodborne virus infections (including HIV/AIDS and viral hepatitis) are serious health problems in prisons and wider criminal justice systems (1). This makes these places important settings for the provision of effective

drug-related and bloodborne virus services to help reduce the damage that drug use does to health, prison safety and security as well as the broader community (through increased re-offending and infections on release).

Large proportions of the people who enter criminal justice systems and prison have a history of drug use and injecting. Many of these people continue to use drugs while they are in prison. The prison environment may have a positive impact on some drug users, helping them to stop or reduce their drug use or to use less frequently, but for others prison will be an environment where they switch to more harmful patterns of drug use.

Prisons are risky environments because they are often overcrowded, stressful, hostile and (sometimes) violent places in which individuals from poor communities and from ethnic and social minorities are overrepresented, including people who use drugs and migrants.

A European study of health problems arising in prison highlighted three main issues: substance abuse, mental health problems and communicable diseases (2). These three problem areas are closely interrelated. Some of the harms associated with drug users in the criminal justice system include:

- high rates of HIV and viral hepatitis infection (imprisonment is associated with higher rates of bloodborne virus infection among injecting drug users);
- high rates of TB in some countries;
- restricted access to harm reduction services and treatment for drug dependence and bloodborne viruses;
- increased risk of death by overdose after release;
- increased risks of transmission of prison-acquired infections;
- increased risk of reoffending after release.

Although alternatives to imprisonment have been introduced in many countries, more and more people who have used or still use drugs enter prisons. Only some are in prison as a result of conviction for a drug offence. Most are there for other drug-related offences.

Generally, in many countries the number of drug users with problematic consumption patterns in prison populations has dramatically increased over the last two decades.<sup>12</sup>

<sup>12</sup> Problematic drug use is defined as “injecting drug use or long duration/regular use of heroin/cocaine and/or amphetamines” (3). This definition can include other opioids such as methadone. Drug consumption is deemed to be problematic if it is combined with other risky behaviour, causes damage to other people or produces negative social consequences.

Every sixth prisoner is thought to be a problem drug user (4). Thus, people who use drugs are overrepresented in prisons throughout Europe (see Chapter 13). Several factors have contributed to this, including poverty, migration, violence and the fact that increased incarceration is often politically expedient. Ultimately, however, repressive legislation against drugs in the context of growing drug consumption in the community has often played an important role.

This fact inevitably affects life in penal institutions. Drugs have become a central theme, a dominating factor in the relationships between prisoners and between prisoners and staff. Many security measures are aimed at controlling drug use and drug trafficking within the prison system. Daily prison routine in many respects is dictated by drug-dependent inmates and drug-related problems: drug-related deaths, drug-induced cases of emergency, increases in the number of people who use drugs, hierarchies of dealers, debts, mixed drugs, drugs of poor quality, incalculable purity of drugs and risks of infection (particularly with HIV and hepatitis) resulting from contaminated and shared syringes and drugs. Drugs become the central medium and currency in prison subcultures. Many routine activities for inmates focus on the acquisition, smuggling, consumption, sale and financing of drugs.

Prison managements are faced with increased public pressure to keep prisons drug-free. Few prison managers talk frankly and in public about drug use in prisons, establish adequate drug services or develop new drug strategies. People who confess that drug use is prevalent in prisons and that prison is a risk environment are frequently blamed for failing to maintain security in prisons, so a considerable number of prison managers continue to deny or ignore drug use in prison.

Furthermore, many prison physicians believe they can cure the inmates' drug problems by temporarily forcing them to stop using drugs. Thus it becomes obvious why dealing with people who are dependent on drugs in detention is difficult. The goal of rehabilitating the convicts must be pursued, but prison managers in many countries face rising drug consumption among inmates and political and economic circumstances that make solving the drug problem even more difficult. The current judicial situation is paradoxical: a solution has to be found to a problem that is not supposed to exist – drugs in prisons.

### ***Nature and prevalence of drug use and related risks in prisons and on release***

Many drug users in prisons come from the more disadvantaged groups in society, with a high prevalence of low educational attainment, unemployment, a history

of physical or sexual abuse, relationship breakdown or mental disorder. Many drug users lead chaotic lives and experience a range of issues with housing, employment, education and health that need to be addressed. Many of these prisoners have never had access to health care and health promotion services before imprisonment. The health care services, therefore, offer an opportunity to improve their health and personal well-being (5).

Drug use in prison takes place in extreme secrecy, and drug seizure statistics, based solely on the confiscation of needles/syringes and positive urine test rates, only indicate some of the story of drug use behind bars. The patterns of drug use vary considerably between different groups in the prison population. For instance, drug use among women differs significantly from that among men, with different levels and types of misuse and different motivations and behavioural consequences.

Many countries report changes in the patterns of drug use (volume and type of drug) when the preferred drugs are scarce (6). Studies and observations by prison officers indicate that, on the one hand, switching to alternative drugs (such as from opiates to cannabis) or to any substitute drugs with psychotropic effects, no matter how damaging this would be (illegal drugs and/or medicine) is widespread. On the other hand, due to a lack of access to the preferred drug or because of controls (such as mandatory drug testing), some prisoners seem to switch from cannabis to heroin, even if on an experimental basis, because cannabis is deposited within fatty tissue and may be detected in urine up to 30 days after consumption.

In many prisons, the most commonly used drug besides tobacco is cannabis, which is used for relaxation purposes. Some studies have shown that more than 50% of prisoners use cannabis while in prison: prevalence on entry varies between 38% in France (7) to 50–55% in the United Kingdom (England and Wales) (8,9), 65% in Switzerland (10), 74% in Greece (11) and 81% in the United Kingdom (Scotland) (12). Studies indicate that both prison staff and inmates consider that cannabis provides psychological relief and has a positive impact on the social ambience in the particular setting of prisons.

Tackling cannabis use in prison needs to take these effects into account and to include harm reduction measures tailored to the individual users and their therapeutic needs (13).

A much smaller percentage of prisoners report that they inject drugs in prison (14). The extent and pattern of injecting and needle-sharing vary significantly from prison to prison. Prisoners who use drugs on the outside usually

reduce their use in prison, and only a minority of prisoners use drugs daily.

According to various studies undertaken in Europe, between 16% and 60% of people who injected on the outside continue to inject in prison (15). Although they inject less frequently than outside prison, prisoners are much more likely to share injecting equipment than are drug injectors in the community, and with a greater number of people (16). Many were accustomed to easy and anonymous access to sterile injecting equipment outside prison and start sharing injecting equipment in prison because they lack access to safe equipment there.

Although injecting drug use in prison seems to be less frequent than in the community, each episode of injection is far more dangerous than outside due to the lack of sterile injecting equipment, the high prevalence of sharing and already widespread infectious diseases.

Prisons are high-risk environments for the transmission of HIV and other bloodborne infections for several reasons:

- a disproportionate number of inmates come from and return to backgrounds where the prevalence of HIV and bloodborne virus infection is high;
- the authorities fail to acknowledge officially the presence of HIV and bloodborne viruses, thus hindering education efforts;
- activities such as injecting drug use and unsafe sexual practices (consensual or otherwise) continue to occur in prison, with clean injecting equipment and condoms rarely provided to prisoners;
- tattooing and piercing using non-sterile equipment is prevalent in many prisons; and
- epidemics of other STIs such as syphilis, coupled with their inadequate treatment, lead to a higher risk of transmitting HIV through sexual activity.

There were early indications that HIV could be transmitted extensively in prisons. HIV outbreaks in prison have been documented in some countries, demonstrating how rapidly HIV can spread in prison unless effective action is taken to prevent transmission (17, p.11).

Although smoking heroin ("chasing the dragon") instead of injecting plays an increasing and significant role all over Europe, this route of administration is not widespread in prison. Drugs are expensive in prison, and injecting maximizes the effect of a minimal amount of drugs and is not as easily detectable as smoking (both by prison staff and other prisoners).

A substantial number of drug users report having first started to inject while in prison. Studies of drug users in

prison suggest that between 3% and 26% first used drugs while they were incarcerated, and up to 21% of injectors initiated injecting while in prison (18).

In addition to illegal drugs, legal drugs such as tobacco (19), alcohol and prescribed pharmaceuticals (20) often contribute to substance dependence and related health problems among prisoners. Many prisoners have a long history of regular use of legal drugs. Polydrug use is common among offenders entering custody, codependent on any combination of alcohol, opiates, stimulants and benzodiazepines. Dual diagnosis, or the coexistence of mental health and substance use problems, has also increased in recent years.

### **Prevention, treatment, harm reduction and aftercare**

In general, drug services in prisons can be divided into assessment, prevention, counselling, abstinence-oriented and medication-assisted treatment, self-help groups and peer-driven interventions, harm-reduction measures and pre-release and aftercare programmes. It is essential to recognize that drug dependence (whether on opiates, cocaine, tobacco, alcohol or other drugs) is not criminal or hedonistic behaviour but a chronic disease, characterized by a long process of relapses and attempts at stabilization, which consequently requires a continuing care and support approach. It should be treated in the same way as other chronic illnesses, including diagnosis and a treatment plan. It is vital that any drug treatment and intervention strategies are not developed in isolation but linked to other relevant initiatives and strategies. A prison drug strategy should be part of and in line with the national drug strategy (21).

All drug services available in the community should also be available in prisons, in the same quality, size and accessibility than outside. The World Health Organization (WHO) Health in Prisons Programme and the Pompidou Group of the Council of Europe principles for the provision of health care services in prisons (2001) state that: "... there should be health services in prisons which are broadly equivalent to health services in the wider community" (22) (the principle of equivalence).

The goals of drug treatment services in prisons must be, at the least, that prisoners leave in a healthier state than when they arrived and, as the best outcome, that they are psychosocially stabilized and their treatment is continued after release. Thus, the ultimate goal of all treatment for drug dependency, on an individual level, is to achieve abstinence from the drug (or drugs) on which prisoners are dependent with or without medication-assisted treatment. On a system or institutional level, reducing

re-offending and improving health and rehabilitation are the overarching twin aims.

Throughout the EU, the introduction of prevention, treatment and harm reduction measures in prisons is still inadequate compared to developments achieved in the last 30 years in the community. An EU report emphasizes this lack of equivalence, in that interventions in prisons within the EU are still not in accordance with the principle of equivalence adopted by the United Nations General Assembly (23), UNAIDS/WHO (24) and UNODC (25), which calls for equivalence between the health services and care (including harm reduction) available inside prison and those available to society outside prison.

### What works?

It is well-established that good drug treatment for prisoners can reduce both drug use and rates of re-offending. *The Lisbon agenda for prisons* stated that “positive experience from in-prison treatment helps inmates to continue treatment after release, reduce relapse rates and related health risks, and also reduce delinquency recidivism” (26).

Opioid substitution therapy is the most effective treatment for preventing HIV and hepatitis C among opiate users (27–29). Intensive psychosocial support and/or supervision on release, therapeutic communities and the 12-step abstinence-based programme have evidential support. This means that pharmacological and psychosocial as well as other supportive “wraparound” interventions are promising strategies for stabilizing prisoners. The inclusion of integrated medical and psychosocial services in a comprehensive package, together with a range of offers meeting the needs of drug-dependent prisoners, is critical for effective drug services.

The Patel Report puts it this way (5, p.24):

One of the overall themes to emerge is that people need to feel they have choices. This is as important when deciding about treatment and interventions options and in choosing their own route to recovery i.e. working toward abstinence. The reality of supported self-change is vital in a recovery focused treatment system in order to raise aspirations and create opportunities for further self-change and personal development.

Coping with drug use in prison is difficult for several reasons. Drug use is illegal. If discovered, it leads to harsh consequences for the time spent in prison including loss of privileges (such as home leave), segregation, more frequent controls (such as cell searches) and discrimination by non-drug-using prisoners (fear of transmitting infectious diseases). In the prison subculture, drug users are often

perceived to be in the lower ranks: they are blamed for new supervisory and control procedures that aggravate the custodial conditions (30).

Prison health services face a dilemma regarding therapeutic resources. Staff in prison health care units and security staff have to deal with the consequences of drug use, but the causes of drug use usually remain beyond their reach. The prison staff and administration often do not have the capacity to respond adequately to the health problems of drug users, especially if they are in prison for short periods of time. Prisons are not therapeutic institutions. Time in prison should not, however, be considered lost. The opportunities prisons may provide in terms of health care, social support and the involvement of community health agencies should be used. Prisons can provide an opportunity to help drug users, many of whom have not had any previous contact with helping or treatment agencies. People often change the drug use patterns they had before imprisonment, voluntarily or not. Because of a lack of drugs, they might stop using altogether, reduce the quantity or change the route of administration because of a lack of sterile needles and syringes.

Measures designed to achieve abstinence from drug use in prison, or at least a reduction in harmful drug-using patterns, include:

- counselling on drug-related issues by prison staff or specialized personnel, integrated with external drug services;
- housing for drug-using prisoners in specialized units with a treatment approach and multidisciplinary staff;
- provision of printed and audiovisual material in different languages, with the involvement of prisoners and external counselling agencies in its production.

Measures to prevent the transmission of infectious diseases among drug users include:

- availability of sterile injecting equipment;
- provision of opiate substitution treatment to opioid-dependent prisoners at any stage of their imprisonment;
- availability of condoms and lubricants;
- implementation of vaccination programmes against hepatitis A and B;
- face to face communication: counselling, personal assistance, assistance from and integration of outside agencies for AIDS help or bloodborne viruses, and safer use training for drug users;
- provision of leaflets;
- availability of bleach or other decontaminants (30).

Strategies to reduce risk applied outside prison are often regarded as undermining the measures taken inside prison

to reduce the supply of drugs. Supporting the safer use of illegal drugs (such as by providing bleach and sterile injecting equipment) and at the same time confiscating the drugs is a fundamental dilemma. Studies show, however, that harm reduction measures can be provided safely and without compromising the measures aimed at reducing drug use in prisons (31).

Prison drug policies should allow for:

- assessment, screening, counselling and treatment on a voluntary basis;
- the keeping of a distance from the drug-using subculture, since drug users who are motivated to undergo a treatment programme have to be able to do so in a protected environment, which is difficult for many prisons due to overcrowding;
- throughcare and aftercare, which are essential elements of efforts to reduce relapse and re-offence and build trust with caregivers;
- provision of the diversity of measures that are offered outside prisons: social services, drug-care units, drug counselling and treatment services (including harm reduction); and
- discouragement of the import and traffic of drugs in the prison system.

### **Psychosocial drug treatment and pharmacological approaches as complementary measures in a comprehensive package of drug services**

An integrated drug treatment system, such as that developed in the United Kingdom (England) (32), is needed for a comprehensive response to the complex phenomenon of drug dependence. Drug-free as well as pharmacological interventions, together with stimulation for self-help, are key to the success of drug services. Psychosocial drug treatment and clinical substance dependence management must be integrated and harmonized. Drug-free orientation and pharmacological treatment are not contradictory strategies; on the contrary, they can complement each other with psychosocial drug treatment and rehabilitation.

Inside prisons, the use of illegal drugs is a criminal offence and abstinence-based interventions are, therefore, generally viewed as compatible with the goal of prison systems to eradicate drug use. Abstinence is compatible with, and reinforces, the aims of custody in general and is envisaged as enabling prisoners to avoid committing criminal offences after release.

Prisons run a variety of rehabilitation programmes for drug users based on different therapeutic approaches and assumptions. These programmes are designed to reduce

the risk of re-offending through alleviating prisoners' problems with substance use. Three main approaches and types of programme can be distinguished.

The *cognitive behavioural therapy approach* has different levels of intensity (low/medium intensity programme, gender-specific and short duration). The aim is to gain social learning experience, and to understand and treat drug-related problem behaviour associated with substance-related offending.

The *12-step approach* is based on social learning within a peer approach, with new group members given instruction in ways to lead a drug-free life by more established prisoners. It works on the assumption that addiction is a life-long illness that can be controlled but not necessarily completely cured. The programmes are high intensity for highly dependent prisoners, regardless of the specific drug (they may last for 15 to 18 weeks).

The *structured therapeutic community approach* is based on hierarchical treatment and aims to teach new behaviour, attitudes and values, reinforced through peer and therapeutic community support. It is available for adult prisoners with a medium or high risk of reconviction and level of dependence on drugs (5).

Referral to these programmes is based on individual risks and needs. The different approaches allow individual prisoners to be directed towards the treatment most suited to the severity of their problem and fitting their personal characteristics and circumstances. Some of the cognitive behavioural therapy programmes are suitable for people who are stabilized on opioid substitution programmes, either as part of the process of working towards abstinence or towards better stabilization, while the 12-step and therapeutic community models require participants to be entirely drug-free before starting the programme: "The factors which are rated as being good include the quality of relationships, ease of access and experiencing a transformation in which drug users describe their life as having being 'turned around'." (5, p.29).

These approaches can be matched with, on the one hand, voluntary drug testing that aims to provide an incentive for prisoners to stay drug-free because they are recovering from drug dependence or because they wish to continue receiving particular privileges (such as release on temporary licence or a better job in the prison) or, on the other hand, having something meaningful to do such as work, education and structured programmes, which seems to be a key determinant in remaining drug-free.

### ***Abstinence-oriented treatment and therapeutic communities in prisons***

Abstinence-oriented treatment for prisoners is generally provided in special facilities (therapeutic communities). Most of the member states of the Council of Europe have abstinence-based programmes. Therapeutic communities are intensive treatment programmes for prisoners with histories of severe drug dependence and related offending who have a minimum of 12–15 months of their sentence left to serve. They are drug-free environments implementing an intensive treatment approach that requires 24-hour residential care and comprehensive rehabilitation services. Residents are expected to take from 3 to 12 months to complete the programme. In general, therapeutic community treatment models are designed as total-milieu therapy, which promotes the development of social values, attitudes and behaviour through positive peer pressure. Although each therapeutic community differs in terms of the services provided, most programmes are based on a combination of behavioural models with traditional group-based, confrontational techniques. As high-intensity, often multistage programmes, therapeutic communities are provided in a separate unit of the prison. Many prison therapeutic communities ensure a continuum of care by providing community-based aftercare, which is closely connected to the specific therapeutic community and part of the correctional system.

Little research has been done on the effectiveness of therapeutic communities and the sustainability of abstinence. The unsolved problem is that therapeutic communities are often not linked with interventions for safer drug use and the prevention of death after relapse following release. It is suggested that prisoners' experience in treatment should be followed up after release.

### ***Contract treatment units and drug-free units***

Drug-free units or wings or contract treatment units aim to allow prisoners to keep a distance from the prison drug scene and to provide a space to work on dependence-related problems. The focus in these units is on drug-free living. Prisoners stay in these units voluntarily. They commit themselves (sometimes with a contract) to abstinence from drugs and not to bring in any drugs and agree to regular medical check-ups often associated with drug testing. Prisoners staying in these units sometimes enjoy a regime with more favours and privileges, such as additional leave, education or work outside, excursions and more frequent contact with their families. Drug-free units (often called drug-free zones) do not necessarily include a treatment element. They aim to offer a drug-free environment for everyone who wants to keep away from drug-using inmates.

The purpose of staying in a contract treatment unit is that the inmate will remain drug-free or at least become motivated to continue treatment after release. Attempts will be made to motivate the inmate to strengthen his or her health and personality, to participate in work routines and to maintain and strengthen his or her social network.

### ***Counselling, peer support and peer-driven interventions***

Peer education and peer support can be defined as the process by which trained people carry out informal and organized educational activities with individuals or small groups in their peer group, such as those of the same age or – in this context – other prisoners. Peer education targets individuals and groups that cannot effectively be reached by existing services, with the overall aim of facilitating improvements in health and reducing the risk of transmitting HIV or other bloodborne diseases. Peer-driven interventions make systematic use of the authentic value of peers.

On the basis of the data available and extrapolating from the literature on community-based programmes, education programmes in prisons (as in community settings) are more likely to be effective if peers develop and deliver them. As Grinstead et al. (33) have stated:

When the target audience is culturally, geographically, or linguistically distinct, peer education may be an effective intervention approach. Inmate peer educators are more likely to have specific knowledge about risk behaviour occurring both inside and outside the prison. Peer educators who are living with HIV may also be ideal to increase the perception of personal risk and to reinforce community norms for safer sexual and injection practices. Peer education has the additional advantage of being cost-effective and, consequently, sustainable. Inmate peer educators are always available to provide services as they live alongside the other inmates who are their educational target.

Peer educators can play a vital role in educating other prisoners, since most of the behaviour that puts prisoners at risk of HIV, hepatitis and overdoses in prisons involves illegal (injecting drug use) or forbidden (same-sex activity and tattooing) and stigmatized (same-sex activity) practices. Peers may, therefore, be the only people who can speak candidly to other prisoners about ways to reduce the risk of contracting infection. In addition, peer educators' input is not likely to be viewed with the same suspicion as the information provided by the prison hierarchy. Peer educators are more likely to be able to discuss realistically the alternatives to risky behaviour that are available to prisoners and are better able to judge which educational strategies will work within their prison and the informal

power structure among prisoners. Finally, peer-led education has been shown to be beneficial for the peer educators themselves: individuals who participate as peer educators report significant improvements in their self-esteem (34).

## Opioid substitution treatment in custodial settings

### Background

Prisons are not the right place for treating drug-dependent men and women, and countries should develop policies for alternatives to imprisonment. As long as these alternatives are not available, prison authorities are faced with this specific population in need of treatment, care and support. Research has shown that treatment for opioid dependence (opioid substitution therapy – OST) is the most effective way to treat opioid dependence, to reduce the risk of HIV and hepatitis C transmission, and to reduce the risk of overdose (35,36).

The need for access to treatment for opioid dependence in prison was internationally recognized more than 30 years ago. In 1993, WHO issued guidelines on HIV infection and AIDS in prisons (24) which stated the following:

Drug-dependent prisoners should be encouraged to enrol in drug treatment programmes while in prison, with adequate protection of their confidentiality. Such programmes should include information on the treatment of drug dependency and on the risks associated with different methods of drug use. Prisoners on methadone maintenance prior to imprisonment should be able to continue this treatment while in prison. In countries in which opioid substitution treatment is available to opiate dependent individuals in the community, this treatment should also be available in prisons.

In 2004, in a position paper on substitution maintenance treatment, UNAIDS, UNODC and WHO concluded that the provision of substitution maintenance treatment for opioid dependence is an effective strategy for preventing HIV/AIDS, which should be considered for implementation as soon as possible in communities at risk of HIV infection (37).

A failure to implement effective drug treatment and HIV and hepatitis C prevention measures could result in the further spread of HIV and hepatitis C infection among injecting drug-users and the wider prison population, and could potentially lead to generalized epidemics in the local non-injecting drug-user population.

Injecting drug-users who do not enter OST are up to six times more likely to become infected with HIV than those who enter and remain in treatment. The death rate of people with opioid dependence in OST is one third to one quarter the rate in those not in treatment.

The most common form of OST is methadone maintenance treatment. Methadone has been used to treat heroin and other opiate dependence for decades. The more recently developed buprenorphine is also quite common in many countries. Both have been proved to make a major reduction in the risk of HIV infection by reducing the use of opioids and the sharing of drug injection, needles and syringes, and improving the health and quality of life of opiate-dependent people.

OST is, therefore, an effective strategy for preventing the transmission of HIV and hepatitis C. It should be implemented as soon as possible in prisons at high risk of HIV infection (38).

Before starting treatment, drug users must be provided with relevant information, especially about the risk of overdose and the potential risks of multiple drug use and interactions with other medications. They should also be informed about the primary physician's obligations to the state, to the prison and to the prisoner (39).

Medication-assisted treatment for opioid dependence (OST – substitution treatment, agonist pharmacotherapy, agonist replacement therapy or agonist-assisted therapy) is defined as the administration under medical supervision of a prescribed opioid substance, pharmaceutically related to that producing dependence, to people with substance dependence so as to achieve defined therapeutic aims.

OST is a form of health care for heroin- and other opioid-dependent people. It uses prescribed opioid agonists or partial agonists which have some properties similar to or identical with heroin and morphine in their action on the nervous system, alleviate withdrawal symptoms and block the craving for illicit opioids. Examples of opioid agonists are methadone, sustained-release morphine, codeine, buprenorphine (a partial agonist-antagonist) and, in some countries, diamorphine. Most of these substances, except for diamorphine, are characterized by a long duration of action and the absence of "rush" (Table 6).

Antagonists, which reverse the effects of opioids, are also used in treating opioid dependence. They occupy the same receptor sites in the brain as opioids and, therefore, block the effects of opioids. However, they do not stop craving. If a person takes an antagonist followed by an opioid, the euphoric effects of the opioid are nullified as they cannot act on the brain. If the antagonist, which has a higher affinity for opioid receptors, is taken after the opioid, an opioid-dependent person will go into opioid withdrawal (so antagonists are contraindicated for people who have not been detoxified from opioids). Naltrexone is the opioid antagonist most commonly used in treating opioid

**Table 6. Substitution agents**

Medication	Frequency	Optimal recommended dose	Route of administration	Overdose risk	Withdrawal	Notes
Methadone	Every 24 hours	60–120 mg/day	Oral (syrup, tablets) Injectable	+++	+++	Optimal dose level dependent on subject can be <60mg or >120mg according to individual variability
Buprenorphine	Every 24 to 48 or 72 hours	8–24 mg/day	Sublingual	+ (with additional drugs)	+	Start 6–8 hours after the last heroin intake or on appearance of withdrawal symptoms. If the person was previously using methadone, methadone has to be tapered until 30 mg/day and buprenorphine can be administered at 48 hours after last methadone dose or on appearance of withdrawal symptoms.
Buprenorphine naloxone (4:1 ratio)						
Sustained release morphine	Every 24 hours	300–1200 mg/day	Oral (capsules)	+++	++(+)	Provided in some countries when provision of methadone or buprenorphine is contraindicated or when these substances are not tolerated (Australia, Austria, Bulgaria, Slovenia, Switzerland and the United Kingdom).
Diamorphine	2–3 times every 24 hours	400–700 mg/day	Injectable, smokeable	+++	+++	Only legally available to long-term, non-stabilized opioid users in Denmark, Germany, the Netherlands, Switzerland the United Kingdom while in Canada and Spain it is permitted in the context of research trials only.
Levo-alpha-acetyl-methadol	Every 4–72 hours	70–120 mg 3 times per week	Oral	+++	+++	Not available in the EU, and there are concerns regarding safety (QTc interval extension in electrocardiogram)
Levo-methadone	Every 24 hours	40–60 mg/day	Oral (syrup)	+++	+++	Only available in Germany
Codeine			Oral (syrup, tablets)	++	+++	Available for maintenance treatment in Germany

Source: adapted from Verster & Buning (40).



dependence. Naloxone is only used for the emergency reversal of opioid overdose situations. Buprenorphine is a partial agonist-antagonist and is being used increasingly to treat opioid dependence. There are combinations of naloxone with buprenorphine (1:4 ratio) to prevent the abuse of the medication via injection.

The differences between OST (agonists) and blocking or aversion treatment (antagonists) are shown in Table 7.

OST is valuable because it provides an opportunity for dependent drug users to reduce their exposure to high-risk behaviour and to stabilize themselves in health and social terms before they address the physical adaptation dimension of dependence. OST is generally considered for people who have difficulty in stopping their drug use and completing withdrawal.

It is desirable that medications used in OST have a longer duration of action, or half-life, than the drug they are replacing so as to delay the emergence of withdrawal symptoms and reduce the frequency of administration. This allows the person to focus on normal activities without the need to obtain and administer drugs. Further, prescribed medication for an illicit drug helps to break the connections with criminal activity while supporting the change in lifestyle.

Good-quality treatment should be:

- ongoing, in keeping with treatments for other chronic illness (for example, antiviral/antiretroviral treatment and psychiatric comorbidities);
- able to address the multiple problems posing a risk of relapse (such as physical and mental health disorders and social instability);
- well-integrated into society to permit ready access for monitoring purposes and to forestall relapse.

Other characteristics of good models include:

- adequacy of the time available for treatment;
- availability of close links to community health and drug services, together with training provided for health and other treatment professionals;
- the extent to which the views of the prisoners themselves have been considered.

### ***The main goals of OST***

Although the ultimate goal of treatment may be to get people to stop using drugs, the main aims of OST are based on the concepts of public health and harm reduction. They are:

- to assist people to remain healthy until (with the appropriate care and support) they can achieve a drug-free life; when they are stabilized, if they cannot or do not want to quit OST, they can remain in treatment for years or even for their lifetime;
- to reduce the use of illicit drugs and non-prescribed medications;
- to deal with problems related to drug use;
- to reduce the dangers associated with drug use, particularly the risk of transmitting HIV, hepatitis B and C virus and other bloodborne infections from injecting and sharing injecting paraphernalia;
- to reduce the chances of future relapse into drug use;
- to reduce the need for criminal activity to finance drug use;
- when appropriate, to stabilize the person on a medication to alleviate withdrawal symptoms and craving;
- to improve overall personal, social and family functioning; and
- to reduce the risk of drug-related death, particularly at the time of release from prison.

In their 2004 common position paper, UNAIDS, UNODC and WHO stated the following:

**Table 7. Differences between OST (agonists) and blocking or aversion treatment (antagonists)**

<b>OST</b>	<b>Blocking or aversion treatment</b>
<p>Agonists (methadone, levo-alpha-acetylmethol, long-acting morphine and heroin):</p> <ul style="list-style-type: none"> <li>• in some ways, act similarly to opioids</li> <li>• stimulate opioid receptors</li> <li>• alleviate or stop the craving for opioids</li> <li>• do not produce a rush (except diamorphine) can produce or maintain physical dependence</li> </ul>	<p>Antagonists (naltrexone and naloxone):</p> <ul style="list-style-type: none"> <li>• block the action for opioids</li> <li>• block opioid receptors</li> <li>• do not alleviate or stop the craving for opioids</li> <li>• do not produce a rush</li> <li>• do not produce physical dependence</li> </ul>

Substitution maintenance therapy is one of the most effective treatment options for opioid dependence. It can decrease the high cost of opioid dependence to individuals, their families and society at large by reducing heroin use, associated deaths, HIV risk behaviours and criminal activity. Substitution maintenance therapy is a critical component of community-based approaches in the management of opioid dependence and the prevention of HIV infection among injecting drug users. (41)

Ample data support the effectiveness of OST in reducing high-risk injecting behaviour and the risk of contracting HIV (27–29). OST is the most effective treatment available for heroin-dependent injecting drug users in terms of reducing mortality (the death rate of people with opioid dependence in methadone maintenance treatment is one third to one quarter the rate of those not in treatment), heroin consumption and crime. Drug users are often heavily involved in crime before entering treatment, but after one year of methadone maintenance treatment, these levels go down by about half. The benefits are greatest during and immediately after treatment, but a significant improvement continues for several years after treatment. The reductions are most marked in drug-related criminal behaviour.

Many of the concerns raised about OST have been shown to be unfounded. In particular, OST maintenance has not been shown to be an obstacle to ceasing drug use and, in fact, it is more effective than detoxification programmes in stopping people from using drugs illegally and keeping them in drug treatment programmes. Injecting drug users who do not enter treatment are up to six times more likely to become infected with HIV than those who enter and remain in treatment (42).

OST is a cost-effective method of treatment, comparing favourably in terms of cost-effectiveness with other health care interventions, such as therapy for severe hypertension or for HIV/AIDS. According to several conservative estimates, every euro invested in OST programmes may yield a return of between four and seven euros in reduced drug-related crime, criminal justice costs and theft. When savings related to health care are included, total savings can exceed costs by a ratio of 12:1.

Finally, people treated with OST who are forced to withdraw from methadone when they are incarcerated often return to narcotic use, often within the prison system and often via injection. It has, therefore, been widely recommended that prisoners who were in OST outside prison should be allowed to continue this treatment in prison (43).

In many countries, however, OST is unavailable or not widely enough available in prisons. Initially, OST was often

only made available in prisons to inmates living with HIV or with other infectious diseases or to pregnant women. Provision generally remains inadequate and below the standards of OST in the community. In many countries, OST is still likely to be discontinued when people on treatment enter prison. A treatment gap persists between those requiring OST and those receiving it.

Some prison systems are reluctant to make OST available or to extend its availability to prisoners who were not receiving it before incarceration. Methadone or buprenorphine are sometimes viewed as just more mood-altering drugs, delaying the personal growth necessary to move beyond a drug-centred existence. Some people also object to OST on moral grounds, arguing that it merely replaces one drug of dependence with another. Other reasons for resistance to OST include:

- the fact that prisons are supposed to be drug-free;
- the fear that the opioid medications used may be diverted and sold;
- a lack of understanding of drug dependence as a chronic disease;
- limited space and lack of resources and staff in many prisons;
- the cost of and additional organizational tasks required to implement it;
- anxiety that it will destabilize the prison.

If other reliable and effective methods could achieve enduring abstinence, OST could indeed be seen as inadequate. However, there are no such alternatives (44).

In recent years, evaluations of prison OST have provided clear evidence of its benefits. Studies have shown that, if dosage is adequate (at least 60–80 mg methadone or 12–16 mg buprenorphine) and treatment is provided for the duration of imprisonment, such programmes reduce drug-injecting and needle-sharing and the resulting spread of HIV and other bloodborne infections. In addition, they have other worthwhile benefits, both for the health of prisoners participating in the programmes and for prison systems and the community.

- OST positively affects institutional behaviour by reducing drug-seeking and thus improving prison safety. Prison systems where OST is provided benefit by, among other things, reduced withdrawal symptoms on admission (often accompanied by self-harm or even suicide attempts), alleviation of anxiety upon entry, reduced trade in drugs and increased productivity among prisoners on OST.
- Re-offending is significantly less likely among prisoners who receive OST.
- Prisoners on OST in prison are significantly more likely to enter and remain in post-release treatment than those enrolled in detoxification programmes.

- Although prison administrations often initially raise concerns about security, violent behaviour and diversion of prescribed drugs, these problems are less frequent than when substitution treatment programmes are absent.
- Both prisoners and correctional staff report how OST positively influences life in prison.
- OST offers daily contact between the health care services in prison and the prisoners, a relationship that can serve as baseline for raising further health issues and links with other strategies for preventing HIV transmission.
- There is evidence that abrupt cessation of OST increases the risk of self-harm and suicide.

In addition, OST can help to reduce the risk of overdose (45). Many prisoners resume injecting once they are released but are at increased risk of a fatal overdose as a result of reduced tolerance for opioids. Extensive research has noted a large number of deaths during the first weeks post-release attributed to drug overdose. Following a United Kingdom study of 51 590 releases from prison (46), it has been estimated that approximately 35% of all male drug-related deaths and 12% of all female drug-related deaths are among prisoners recently released from prison custody. This points to the utility and necessity of throughcare (in prison and post-release) via drug treatment and OST to counteract such risky situations, and highlights the importance of OST as a strategy not only for preventing the transmission of HIV and hepatitis C in prisons but also for reducing overdose deaths after release.

### **Effective treatment**

In order to be effective, OST, as any other type of treatment, must be: (i) based on the needs of prisoners; (ii) provided for the right period of time and at the right dose required by the individual; and (iii) provided continuously throughout imprisonment and following release.

As mentioned above, effective treatment has many benefits for individuals by helping them to stay alive, reducing the risk of infection (particularly from HIV and hepatitis), achieving abstinence or a stabilized pattern of use, stabilizing their social life, improving physical and mental health and reducing criminal activity. It also benefits society by improving public health, reducing emergencies and hospitalization, reducing the spread of HIV and other infectious diseases, reducing social welfare costs and reducing costs to the criminal justice system.

OST programmes vary in duration, dosage and scheme. Although much evidence (47) indicates that OST is more effective when higher dosages are prescribed on a

maintenance basis, many programmes focus on short-term detoxification with decreasing dosages.

In addition, distinguishing between low- and high-threshold programmes is important. The distinctions can be broadly summarized as follows.

Low-threshold programmes:

- are easy to enter;
- are oriented towards harm reduction;
- aim principally to relieve withdrawal symptoms and craving and improve quality of life;
- offer a range of treatment options.

High-threshold programmes:

- are more difficult to enter and may have selective intake criteria;
- are abstinence-oriented (which could include subsequent abstinence from OST medications);
- do not have flexible treatment options;
- adopt regular (urine) control;
- have an inflexible discharge policy which may lead to patients that continue using illegal drugs at the same time as the substitutes being excluded from the programmes; this would be against both medical ethics (because OST has been proved to be good for their health) and the rationale of OST, since its aim is precisely to help people suffering from illegal opioid use;
- may include compulsory counselling and psychotherapy.

Low-threshold should not be regarded as synonymous with low-quality. In general, low-threshold programmes are more successful in serving harm reduction purposes for both addicted individuals and society, by rapidly engaging and keeping people in treatment. For those with a chaotic lifestyle due to their drug habits, such programmes are associated with better treatment outcomes and thus meeting the aims of OST.

### **Treatment criteria and treatment plan**

OST should be restricted to people who meet the clinical criteria for opioid dependence. Restrictive regulations regarding the admission and inclusion criteria of OST are, however, counterproductive with regard to access to treatment and prevention of HIV and hepatitis transmission. Issues such as the maximum dose or maximum length of treatment should be left to the practitioner's clinical judgment, based on the assessment of the individual.

In principle, everyone who is opioid-dependent and in need of treatment and expresses a desire for OST can be stabilized after appropriate assessment and start of treatment. It is, however, recommended that

the availability of treatment sites is taken into account when adopting admission criteria. Age, length of opioid addiction, physical and mental health and personal motivation of the opioid-dependent person should all be considered. Some groups, such as pregnant women or people living with HIV or other illnesses, should be given priority, although this should not entail compulsory HIV-antibody testing. Furthermore, since release from prison is associated with an increase in drug-related deaths due to restart of drug use after a period of abstinence or reduced use (during which opioid tolerance may have been reduced), where resources are limited those about to be released from prison should be given priority for treatment.

### **Risks and limitations**

The most significant risk with methadone and other opioid agonists is an overdose, which can be fatal. Research evidence (40) indicates that the highest risk of overdose is when OST is begun. Low doses are, therefore, recommended at the beginning of treatment with methadone. However, once a stable dose of methadone is settled (after about two weeks), the risk of overdose death is substantially reduced compared with the risk before treatment.

Buprenorphine as a partial agonist has less intrinsic activity than full agonists, and there is a plateau (ceiling) to dose–effect with much less possibility of overdose, allowing for a much faster reduction rate (two to three days).

### **Methadone**

Methadone (methadone hydrochloride) is the predominant medication used for OST inside and outside prison in a majority of countries. It is a synthetic opioid agonist with an effect similar to that of morphine. Methadone is well-absorbed from the gastrointestinal tract, irrespective of formulation (syrup versus tablet). It has very good bioavailability of 80–95%. The half-life of methadone is 24–36 hours, with considerable variations between individuals (10 to 80 hours). This pharmaceutical profile makes methadone useful as an OST medication, because it allows oral administration, single daily dosage and achievement of steady-state plasma levels after repeated administration, with no opioid withdrawal. Some patients experience side-effects, the most common being increased perspiration, constipation and sleep disturbances, reduced libido, reduced power of concentration and potential weight gain. Such undesirable side-effects generally occur at the beginning of treatment and decrease over time, although in some patients they can persist generally without medical consequences. Fewer than 20% of patients taking methadone therapy

experience side-effects. Methadone is a safe medication with no lasting deleterious physical or physiological effects. Contrary to popular assumption, it has no directly damaging effects on bones or teeth (opioids do restrict saliva production, which in turn can lead to dental caries). For some patients, however, detoxifying from methadone might be very difficult and protracted. Methadone is a cheap medication; it is easy to deliver to the prisoner and the intake can easily be supervised. In most cases, little information is given to patients about the medication prescribed, possibly because the providers assume that experienced patients already know everything about the medication. However, this is not always the case.

### **Dosage**

The general rule with dosing of methadone is to start low and go slow, but aim high.

- First, do no harm: estimates of degrees of dependence and tolerance are unreliable and should never be the basis for starting with high doses of methadone that could, if the estimation is wrong, cause overdose.
- There is no moral value associated with either high or low doses.
- Methadone should not be given as reward or withheld as punishment.
- Doses should be increased and decreased gradually. Both for safety and comfort, smaller changes (such as 5 mg at a time) at wider intervals (such as every five days) should be made for people on less than 60 mg a day, whereas larger and more frequent changes (such as 10 mg every three days) will generally be safe at higher levels.
- In general, higher maintenance doses are associated with better therapeutic outcomes than are lower doses. The optimal range for most people is 60–120 mg per day.
- When there are subjective complaints of the methadone “not holding”, the daily dose could be divided or increased. This may be particularly relevant for women who are pregnant and/or receiving ART.

### **Buprenorphine**

Buprenorphine is a partial opioid agonist with weaker opioid agonist activity than methadone. Buprenorphine is not well-absorbed if taken orally, and the usual route of administration in treating opioid dependence is, therefore, sublingual. With increasing doses of buprenorphine, the opioid effect reaches a plateau, so it is less likely than either methadone or heroin to result in opioid overdose, even when taken with other opioids at the same time. The effectiveness of buprenorphine is similar to that of methadone at adequate doses in terms of reduction in illicit opioid use and improvements in psychosocial functioning. Buprenorphine may, however, be associated

with lower rates of staying in treatment. It is currently more expensive than methadone.

Buprenorphine is acceptable to heroin users, has few side-effects and is associated with a relatively mild withdrawal syndrome. When used in OST for pregnant women with opioid dependence, it appears to be associated with a lower incidence of neonatal withdrawal syndrome.

A combination product of buprenorphine with a small amount of naloxone (4:1 ratio) has been developed to reduce potential diversion and misuse of the drug. Naloxone is poorly absorbed sublingually, which limits its pharmacological effect. If the tablet is crushed and used intravenously by an opioid-dependent person, the naloxone is bio-available and can precipitate severe opioid withdrawal, which can potentially deter further such abuse by this route.

### ***Sustained-release morphine***

Sustained-release morphine is seen as a valuable contribution to OST in some countries (Australia, Austria, Bulgaria, Slovenia, Switzerland and the United Kingdom). Some studies have reported that oral sustained-release morphine leads to improved well-being for its recipients compared to those receiving methadone maintenance due to a better side-effect profile. In particular, sustained-release morphine is easy to use (once daily), and the users report better concentration, no major mood disturbances, no weight gain and a better sexual drive.

### ***Dosing and supervision of intake***

There is no such thing as an average dose. Dosage should be part of the doctor–patient relationship and adjusted according to individual needs. The dose needs to be at a level that can reduce craving and block the use of heroin to produce euphoria. Prisoners should be informed of their dose unless they specifically request not to know.

Either nurses or guards can supervise the ingestion of the (liquid or solid) methadone, depending on how and where the medication for OST is dispensed: either within the medical unit or on the cells/wards. This is to ensure that the substance is swallowed (methadone) or diluted under the tongue (buprenorphine) completely.

There is a consensus that the administration of OST (as well as other psychoactive substances) must be supervised to make sure that the medication has been used correctly, to avoid coercion to sell or divert it, and to avoid overdoses in prisoners with no opioid tolerance.

### ***Antagonist treatment: naltrexone***

If a prisoner abstains from opioid drugs, therapy with naltrexone can be started in prison or prior to release.

Naltrexone is a pure opioid antagonist and, as such, is often not considered an OST medication. It has, however, received considerable attention when used for ultra-rapid detoxification under general anaesthesia, a practice that is not without risk to the patient. In addition to its use as a rapid detoxification agent, naltrexone has been used for decades as a longer-term blocking agent (full opiate antagonist) in maintenance treatment.

Naltrexone may be used as part of relapse prevention programmes. A single maintenance dose of naltrexone binds to opioid receptor sites in the brain and blocks the effects of any opioid taken for the next 24 hours, or it can be taken in a double/triple dose three times a week. It produces no euphoria, tolerance or dependence. Patients generally require 5–10 days of abstinence before starting naltrexone (the length of abstinence depends on the length of half-life of the opioid that was regularly taken prior to starting naltrexone).

A Cochrane review on the effectiveness of naltrexone maintenance treatment (48,49) did not find evidence for its effectiveness in maintenance therapy. A trend in favour of treatment with naltrexone was, however, observed for certain target groups (especially people who are highly motivated).

## ***Medication-assisted treatment of opioid dependence in prisons***

### ***Initiation of OST in prisons***

Historically there has only been limited availability of OST in prisons. The principle of equivalence with health care offered in community settings would, however, suggest that OST should be available and accessible to all prisoners according to their health needs. Since many prisoners experience immediate relapse after release they should have an informed choice of either detoxification or maintenance.

Given the often relapsing/remitting nature of opioid dependence, detoxification alone is only effective in producing a long-term change for a minority of users. The benefits of OST programmes can be maximized by:

- keeping people in treatment;
- prescribing higher rather than lower doses of methadone;
- orienting programmes towards maintenance rather than abstinence;
- offering counselling, assessment and treatment of both psychiatric co-morbidity and social problems;
- using and strengthening the therapeutic alliance between clinician and patient to reduce the use of additional drugs.

There are three scenarios where it may be appropriate to start users on opioid maintenance in prison as the first stage of OST. These are: immediately upon admission to prison, during incarceration and for a period before release.

As mentioned above, there is an extremely high risk for prisoners using drugs to relapse and take an overdose shortly after release. Overdoses on release and suicides in prisons were key elements in some countries for integrating OST into prison health care services. In order to avoid relapse and overdose on release, it is recommended that the prisoner be kept on a stable dose until he or she is released.

Overdoses on release and suicides in prisons were also key drivers in some countries to use OST in prisons (50).

### **Detoxification**

Some drug-users manage to abstain permanently while in prison, although detoxification alone is seldom effective in producing a long-term change for the majority of drug-users.

Institution-related factors militating against continued abstinence are a lack of resources and/or personnel resulting in a limitation on the availability of treatment places, lack of knowledge, lack of supporting regulations and guidelines, dependence on the development of OST in the community, opposition to OST in prisons and a restrictive OST policy in the local community.

Relapses after detoxification are extremely common and detoxification on its own rarely constitutes adequate treatment for substance dependence. The options include managing withdrawal on admission in the form of gradual detoxification or moving to abstinence-oriented treatment or maintaining long-term substitution. Interventions that are client-centred and personalized have the best outcomes.

### **Urine controls**

Urine analysis has been much debated in this field. Although urine controls are a vital part of the initial medical assessment of the patient (for confirmation that the patient is actually using opiates), they are often used as a form of control over patients to monitor for illicit drug use. Many professionals question the effectiveness of urine analysis as a positive factor in treatment.

It is also argued that a positive urine sample should never be the sole reason for discontinuing treatment, as this is part of the condition for which the patient is being treated.

OST should never be a reward for good behaviour or withheld as punishment, but rather administered as a

normal part of a variety of medical and psychosocial treatments.

### **Psychosocial care**

A combination of physical, psychological and social experiences contributes to the complexity of drug dependence. To treat the disease successfully and overcome drug dependence, it is necessary to address both the physical and psychosocial dimensions of the disease (27). For many dependent drug-users this may entail substantial physical, psychological and lifestyle adjustments – a process that typically requires a lot of time. OST must not only treat the opioid addiction but also deal with mental and physical health and social problems. Psychosocial care is, therefore, regarded as an additional and necessary part of treatment in support of the medical part of OST in prison.

Personalized patient care in prisons can be a significant challenge. A personalized treatment plan should be drawn up with the patient and regularly evaluated.

### **Polyvalent drug use**

Clear and transparent protocols and guidelines should be in operation regarding the use of other drugs prisoners may have been using. In particular, benzodiazepines, barbiturates and alcohol may pose severe health risks for patients on OST. In these cases, the continuity of OST should be thoroughly discussed, case by case. The options should ideally be considered by a multidisciplinary team and (if one is available) with the prison drug counselling service. Future plans and goals should be decided and agreed, including increasing the dose of OST medication and psychosocial therapy and possibly even discontinuing OST.

### **Continuing OST between the community and prison**

The medication of patients who are on OST prior to imprisonment should be continued in prison, although there are many barriers to such continuity of care. The most significant barrier is that maintenance therapy is interrupted for many patients if they spend time in police custody prior to prison. This can result in significant loss of opioid tolerance. Wherever possible, users should continue their opioid maintenance therapy at their prescribed dose while in police custody.

The high numbers of users requiring treatment in prison, where the supply of illicit drugs is markedly reduced, can mean that the protocols and practices of OST are oriented more to the institution's governance requirements than to each patient's needs and wishes. For instance, it takes approximately five minutes for the supervised administration of buprenorphine (sublingual). This is both time-consuming and allows for the potential diversion

of the medication, so methadone is often prescribed as the first-line medication in prisons. Since some users could perceive this as not being equivalent to the treatment offered in the community, the replacement of one substitution drug with another for the newly arrived prisoner obviously needs to be clearly communicated to him/her and is not recommended.

### **OST in the criminal justice system**

OST should be available at all stages of the criminal justice system if it is available at the community level and should be started and/or continued from arrest to release and afterwards.

It may also play an important role in police detention and pre-trial detention institutions. People addicted to heroin or other opioids who are arrested and taken into police detention can face severe withdrawal symptoms.

OST should be offered as a form of throughcare, providing stability in the physical and mental health of offenders as well as in terms of overdose prevention. The risk of overdose after a short period of detoxification rises, as opioid addicts lose their opioid tolerance within days. The effect of OST on reducing suicide risk has not been studied but a positive impact is thought to be likely whether in prisons, remand facilities or police detention. Moreover, the risk of relapse increases during home leave, holidays and so on.

### **Special considerations for women**

Women tend to experience both drug dependence and treatment differently from men. Major issues are related to the high levels of both physical and mental co-morbidity of women with opioid dependence, which need to be taken into account in their treatment. Women with opioid dependence often face a variety of barriers to treatment, including a lack of financial resources, absence of services and referral networks oriented to women and conflicting child-care responsibilities.

Effective OST can substantially improve obstetric, prenatal and neonatal outcomes. OST also has an important role in attracting and keeping pregnant women in treatment and ensuring good contact with the obstetric and community-based services, including primary care.

## **Harm reduction programmes**

### ***Definition of harm reduction***

In their broadest sense, harm reduction policies, programmes, services and action work to reduce the health, social and economic harms to individuals, communities and society that are associated with the use of drugs (51). The *Status paper on prisons, drugs and harm*

*reduction (21)* defined harm reduction measures in prisons as follows:

In public health relating to prisons, harm reduction describes a concept aiming to prevent or reduce negative health effects associated with certain types of behaviour (such as drug injecting) and with imprisonment and overcrowding as well as adverse effects on mental health.

Harm reduction acknowledges that many drug users cannot totally abstain from using drugs in the short term and aims to help them reduce the potential harm from drug use, including through assistance to stop or reduce the sharing of injecting equipment so as to prevent the transmission of HIV or hepatitis which, in many ways, is an even greater harm than drug use. A harm reduction approach recognizes that a valid aim of drug interventions is to reduce the relative risks associated with drug misuse.

In addition, the definition adopted by WHO acknowledges the negative health effects of imprisonment (51). These include the impact on mental health, the risk of suicide and self-harm, the need to reduce the risk of drug overdose on release and the harm resulting from inappropriate imprisonment of people who in fact require facilities unavailable in prison, especially when overcrowded.

All drug treatment services, both residential and community-based, should incorporate a distinct harm reduction element to reduce the spread of bloodborne viruses and risk of drug-related deaths, notably deaths from overdose (15). Specific harm reduction interventions include:

- advice and information to prevent transmission of bloodborne viruses (particularly hepatitis A, B and C and HIV) and other infections related to drug use;
- vaccination for hepatitis B;
- access to testing and treatment for hepatitis B and C and HIV/AIDS;
- counselling related to HIV/hepatitis testing (pre-and post-test);
- advice and support on preventing the risk of overdose;
- risk assessment and referral to other treatment services;
- needle exchange services, that is, the provision and disposal of needles and syringes and other clean injecting equipment (such as spoons, filters and citric acid) in a variety of settings;
- advice and (peer) support on safer injection and reducing injecting, and reducing the initiation of others into injecting;

As shown above, many prisoners continue to use drugs in prison, and some people start using and injecting drugs

while in prison. Despite often massive efforts to reduce the supply of drugs, the reality is that there is a demand and drugs can and do enter prisons.

In prisons, as in the community, harm reduction measures have been successfully implemented during the past 20 years throughout Europe as a supplementary strategy to existing programmes oriented to drug-free treatment. Harm reduction does not replace the need for other interventions but adds to them, and should be seen as a complementary component of wider health promotion strategies. The following hierarchy of goals should guide drug policy, in prisons as outside:

- securing survival;
- securing survival without the person contracting irreversible damage;
- stabilizing the addict's physical and social condition;
- supporting people dependent on drugs in their attempts to lead drug-free lives.

Harm reduction has been addressed in *Risk reduction for drug users in European prisons*, which has been translated into and adapted to seven European languages (52). The major objectives of this book are:

- to raise awareness of health problems connected to drug use and drug-related infectious diseases;
- to initiate and support a discussion about risk reduction in response to these health problems;
- to contribute to knowledge, skills and insight into the problems and encourage a positive attitude towards risk reduction activities by both inmates and personnel;
- to disseminate information relevant for health promotion by a range of means;
- to stimulate and support the carrying out of risk reduction activities for both inmates and staff.

The book also contains information for prison staff about health and workplace safety, drugs, addiction, infectious diseases and the services needed. Interactive material about risk situations and risky conditions in prisons has been included for inmates.

### Provision of disinfectants

The provision of bleach or other disinfectants to prisoners is an option to reduce the risk of transmission of bloodborne viruses through the sharing of injection equipment, particularly when sterile injection equipment is not available. Many prison systems have adopted programmes that provide disinfectants to prisoners who inject drugs as well as instructions on how to disinfect injecting equipment before reusing it. Evaluations of such programmes have shown that it is feasible to distribute bleach in prisons and does not compromise security (53–56). Studies in the community have, however, raised doubts

about the effectiveness of bleach in decontaminating injecting equipment. Today, disinfection as a means of preventing HIV is regarded only as a second-line strategy to syringe exchange programmes. Cleaning guidelines recommend that injecting equipment should be soaked in fresh full-strength bleach (5% sodium hypochlorite) for a minimum of 30 seconds. More time is needed for decontamination if diluted concentrations of bleach are used. Further, a review of the effectiveness of bleach in the prevention of hepatitis C infection concluded that “although partial effectiveness cannot be excluded, the published data clearly indicates that bleach disinfection has limited benefit in preventing [hepatitis C virus] transmission among injection drug users” (57). In prisons, the effectiveness of bleach as a decontaminant may be even further reduced.

### Needle and syringe exchange programmes

In the community, needle and syringe exchange programmes are widely available in many countries and have been proved to be the most effective measure available to reduce the spread of HIV and hepatitis through the sharing of contaminated injecting equipment. In prisons, however, needle and syringe programmes remain rare, although they have been successfully introduced in about 70 prisons in a growing number of countries including Germany, Kyrgyzstan, Luxembourg, the Republic of Moldova, Romania, Spain, Switzerland and Tajikistan. Evaluations of existing programmes (56,58,59) have shown that they:

- do not endanger staff or prisoner safety, and in fact make prisons safer places to live and work;
- do not increase drug consumption or injecting;
- reduce risk behaviour and the transmission of disease, including HIV and hepatitis C virus;
- have other positive outcomes for the health of prisoners, including a drastic reduction in overdoses (reported in some prisons) and increased referral to drug treatment programmes;
- have been effective in a wide range of prisons;
- have successfully employed different methods of needle distribution to meet the needs of staff and prisoners in a range of prisons; and
- have been successfully used in prisons alongside other programmes for preventing and treating drug dependence.

When prison authorities have any evidence that injecting is occurring, they should introduce needle and syringe programmes, regardless of the current prevalence of HIV and the hepatitis infection rate.

Despite the massive overrepresentation of injecting drug users in custodial settings worldwide, the availability



of harm reduction measures in prisons lags far behind the availability of these interventions in the general community. Illustrating this gap most vividly is the provision – or lack – of needle and syringe programmes. In 2007, for instance, the Commission of the European Communities found that although 24 of the EU member states had needle and syringe programmes in the community, only 3 of those countries had introduced them into prisons. This disparity led the Commission to conclude the following:

Harm reduction interventions in prisons within the European Union are still not in accordance with the principle of equivalence adopted by United Nations General Assembly, UNAIDS/ WHO and UNODC, which calls for equivalence between health services and care (including harm reduction) inside prison and those available to society outside prison. Therefore, it is important for the countries to adapt prison-based harm reduction activities to meet the needs of drug users and staff in prisons and improve access to services. (60)

The Commission's findings were recently confirmed, and expanded upon, in a 2008 report from the Regional Office which monitored Member States' progress in achieving the goals of the Dublin Declaration (61). This report found that, of the 53 signatory countries, condoms were available in prisons in only 18, substitution treatment in 17 and syringe exchange programmes in 6 (61,62). A review by the International Harm Reduction Association in 2009 found the situation had only marginally improved, with 9 countries in Europe and central Asia having introduced syringe exchange in prisons and 28 with substitution treatment (63).

### **Transferring harm reduction strategies into the prison setting**

Despite the evidence that prisons can successfully introduce harm reduction measures, with positive results for prisoners, staff and ultimately for the community, many are still afraid that introducing such measures would send the wrong message and make illicit drugs more socially acceptable. Many prisoners are in prison because of drug offences or because of drug-related offences. Preventing their drug use is an important part of their rehabilitation. Some have said that acknowledging that drug use is a reality in prisons would be acknowledging that prison staff and prison authorities have failed. Others say that making needles and syringes available to prisoners would mean condoning behaviour that is illegal in prisons. However, since HIV and hepatitis B and C seriously threaten prisons and communities, harm reduction measures must be introduced to protect public health. Making available to prisoners the means necessary to protect them from the transmission of HIV and hepatitis C virus does not mean

condoning drug use in prisons. Introducing needles and syringes is not incompatible with a goal of reducing drug use in prisons. Making needles and syringes available to drug users has not increased drug use but has reduced the number of injecting drug users contracting HIV and other infections.

### **Involvement of community services**

In the past decade, there have been new approaches aiming to divert individuals away from prison and into treatment alternatives as well as (for prisoners) into a range of services in prisons. Specific legislation in several countries has been introduced with the purpose of enhancing links between the criminal justice system and health services to reduce the number of drug users entering prison. Despite these developments, the number of prisoners with drug dependence has continued to grow. As drug users often serve short sentences, they return to their communities and many return to their old drug-using habits. Support services need to be continued in order to sustain successes achieved while in custody. This indicates that criminal justice agencies need to improve their links with drug services.

### **Pre-release units**

Prisoners should begin to be prepared for release on the day the sentence starts, as part of the sentence planning process. All staff should be involved in preparing prisoners for release. Good release planning is particularly important for drug-using prisoners. The risks of relapse and overdose are extremely high. Measures taken in prison to prepare drug-using prisoners for release include:

- implementing measures to get prisoners off drugs and keep them drug-free after release;
- granting home leave and conditional release, integrated into treatment processes;
- cooperating with external drug services or doctors in planning a prisoner's release;
- involving self-help groups in the release phase; and
- taking effective measures (such as the provision of naloxone and training) in prison to prevent prisoners dying of a drug overdose shortly after release.

The challenge for prison services in facilitating a successful return to the community is not only to treat a drug problem, but also to address other issues including employability, educational deficits and the maintenance of family ties.

Many prisons undertake efforts to reduce relapse and to provide social reintegration. Protocols are sometimes set up with drug treatment centres from the national and community health networks. In Portugal, for instance, some projects focus on preparing for freedom and that

getting a life means getting a job. Peer groups have been developed to support treated drug addicts to prevent relapse.

### Aftercare

Several studies show that effective aftercare for drug-using prisoners is essential to maintain gains made in prison-based treatment (64, pp.223–231). Nevertheless, prisoners often have difficulty in accessing assessments and payment for treatment on release under community care arrangements. In view of the increased risk of overdose deaths, especially the first two weeks after release, it is important to prepare prisoners with drug problems about the risk of overdose and to ensure the close follow-up of released prisoners with any drug problems (65).

### Therapy instead of punishment

Several countries have legal provisions for suspending the sentences of drug users. In Sweden, Section 34 of the Prison Treatment Act states that a prisoner may be permitted – while still serving the prison sentence – to be placed in a treatment facility outside prison. This is not by definition a suspended sentence: it is an alternative to staying in prison until release. Another possibility is that the court sentences a person to probation with contract treatment. This is possible when there is a clear connection between drug abuse and crime. The person has to accept and give consent to treatment instead of prison. If the person interrupts or neglects the treatment, the contract treatment will be interrupted and converted into a prison sentence.

In Germany, Section 35 of the Opium Law allows prisoners to undergo treatment instead of punishment when the sentence is no more than two years.

### References

1. Fazel S, Bains P, Doll H. Substance abuse and dependence in prisoners: a systematic review. *Addiction*, 2006, 101(2):181–191.
2. Tomasevski K. *Prison health: international standards and national practices in Europe*. Helsinki, Helsinki Institute for Crime Prevention and Control, 1992.
3. European Monitoring Centre for Drugs and Drug Addiction. *Annual report 2006. The state of the drug problem in the European Union*. Luxembourg, Office for Official Publications of the European Communities, 2006 ([http://www.emcdda.europa.eu/attachements.cfm/att\\_37244\\_EN\\_ar2006-en.pdf](http://www.emcdda.europa.eu/attachements.cfm/att_37244_EN_ar2006-en.pdf), accessed 30 November 2013).
4. Hedrich D, Farrell M. Opioid maintenance in European prisons: is the treatment gap closing? *Addiction*, 2012, 107:461–463.
5. Prison Drug Treatment Strategy Review Group. *The Patel report. Reducing drug-related crime and rehabilitating offenders. Recovery and rehabilitation for drug users in prison and on release: recommendations for action*. London, Department of Health, 2010 ([http://www.drugsandalcohol.ie/13941/1/Patel\\_report\\_prison\\_drug\\_treatment.pdf](http://www.drugsandalcohol.ie/13941/1/Patel_report_prison_drug_treatment.pdf), accessed 29 November 2013).
6. Todts S et al. *Usage de drogues dans les prisons belges: monitoring des risques sanitaires*. Brussels, Service Public Fédéral Justice, 2008.
7. Sahajian F, Lamothe P, Fabry J. Psychoactive substance use among newly incarcerated prison inmates. *Santé Publique*, 2006 18(2):223–234.
8. Heidari E et al. Oral health of remand prisoners in HMP Brixton, London. *British Dental Journal*, 2007, 202(2):E5.
9. Stewart D. Drug use and perceived treatment need among newly sentenced prisoners in England and Wales. *Addiction*, 2009, 104(2):243–247.
10. Niveau G, Ritter C. Route of administration of illicit drugs among remand prison entrants. *European Addiction Research*, 2008, 14(2):92–98.
11. Fotiadou M et al. Self-reported substance misuse in Greek male prisoners. *European Addiction Research*, 2004, 10(2):56–60.
12. *Prisoner survey 2008. 11th survey bulletin*. Edinburgh, Scottish Prison Service, 2008 (<http://www.sps.gov.uk/Publications/Publication75.aspx>, accessed 30 November 2013).
13. Cannabis use in a Swiss male prison: qualitative study exploring detainees' and staffs' perspectives. *International Journal of Drug Policy*, 2013, 24:573–578.
14. Shewan D, Stöver H, Dolan K. Injecting in prisons. In: Pates R, McBride A, Arnold K, ed. *Injecting illicit drugs*. Oxford, Blackwell, 2005:69–81.
15. Stöver H et al. *Final report on prevention, treatment, and harm reduction services in prison, on reintegration services on release from prison and methods to monitor/analyse drug use among prisoners*. Brussels, European Commission, Directorate-General for Health and Consumers, 2008 (SANCO/2006/C4/02) ([http://ec.europa.eu/health/ph\\_determinants/life\\_style/drug/documents/drug\\_frep1.pdf](http://ec.europa.eu/health/ph_determinants/life_style/drug/documents/drug_frep1.pdf), accessed 30 November 2013).
16. Jürgens R, Ball A, Verster A. Interventions to reduce HIV transmission related to injecting drug use in prison. *Lancet Infectious Diseases*, 2009, 9(1):57–66.
17. *Interventions to address HIV in prisons. Needle and syringe programmes and decontamination strategies*. Geneva, World Health Organization, 2007 (Evidence for Action Technical Papers) ([http://www.who.int/hiv/иду/oms\\_ea\\_nsp\\_df1.pdf](http://www.who.int/hiv/иду/oms_ea_nsp_df1.pdf), accessed 30 November 2013).

18. Boys A et al. Drug use and initiation in prison: results from a national prison study in England and Wales. *Addiction*, 2002, 97:1551–1560.
19. Ritter C et al. Smoking in prisons: the need for effective and acceptable interventions. *Journal of Public Health Policy*, 2011, 32:32–45.
20. Levy H, Stöver H, eds. *Safe prescribing of medications for custodial health*. Oldenburg, BIS-Verlag, 2013 (Vol. 24 of the series Gesundheitsförderung im Justizvollzug).
21. *Status paper on prisons, drugs and harm reduction*. Copenhagen, WHO Regional Office for Europe, 2005 ([http://www.euro.who.int/\\_\\_data/assets/pdf\\_file/0006/78549/E85877.pdf](http://www.euro.who.int/__data/assets/pdf_file/0006/78549/E85877.pdf), accessed 30 November 2013).
22. *Prisons, drugs and society. Consensus statement on principles, policies and practices*. Copenhagen, WHO Regional Office for Europe, and London, Prison Health Policy Unit, Department of Health, 2002 ([http://www.euro.who.int/\\_\\_data/assets/pdf\\_file/0003/99012/E81559.pdf](http://www.euro.who.int/__data/assets/pdf_file/0003/99012/E81559.pdf), accessed 20 January 2014).
23. *Basic principles for the treatment of prisoners*. New York, NY, United Nations, 1990 (A/RES/45/111) (<http://www.un.org/documents/ga/res/45/a45r111.htm>, accessed 20 January 2014).
24. *WHO guidelines on HIV infection and AIDS in prisons*. Geneva, World Health Organization, 1993 ([http://data.unaids.org/Publications/IRC-pub01/JC277-WHO-Guidel-Prisons\\_en.pdf](http://data.unaids.org/Publications/IRC-pub01/JC277-WHO-Guidel-Prisons_en.pdf), accessed 29 November 2013).
25. *HIV/AIDS prevention, care, treatment and support in prison settings*. New York, NY, United Nations, 2006 ([http://data.unaids.org/pub/Report/2006/20060701\\_hiv-aids\\_prisons\\_en.pdf](http://data.unaids.org/pub/Report/2006/20060701_hiv-aids_prisons_en.pdf), accessed 29 November 2013).
26. Uchtenhagen A. *The Lisbon agenda for prisons*. Lisbon, European AIDS Treatment Group, Grupo Português de Activistas sobre Tratamentos de VIH/SIDA [Portuguese Group of Activists on HIV/AIDS], 2006 ([http://84.16.87.126/info/IMG/pdf/The\\_Lisbon\\_Agenda\\_for\\_Prisons\\_RS\\_PW.pdf](http://84.16.87.126/info/IMG/pdf/The_Lisbon_Agenda_for_Prisons_RS_PW.pdf), accessed 29 November 2013).
27. *Guidelines for the psychosocially assisted pharmacological treatment of opioid dependence*. Geneva, World Health Organization, 2009 ([http://www.who.int/substance\\_abuse/publications/opioid\\_dependence\\_guidelines.pdf](http://www.who.int/substance_abuse/publications/opioid_dependence_guidelines.pdf), accessed 25 February 2014).
28. *Interventions to address HIV in prisons: drug dependence treatments*. Geneva, World Health Organization, 2007 (Evidence for Action Technical Paper) ([http://www.unodc.org/documents/hiv-aids/EVIDENCE%20FOR%20ACTION%202007%20drug\\_treatment.pdf](http://www.unodc.org/documents/hiv-aids/EVIDENCE%20FOR%20ACTION%202007%20drug_treatment.pdf), accessed 22 April 2014).
29. *WHO, UNODC, UNAIDS technical guide for countries to set targets for universal access to HIV prevention, treatment and care for injecting drug users – 2012 revision*. Geneva, World Health Organization, 2012 ([http://apps.who.int/iris/bitstream/10665/77969/1/9789241504379\\_eng.pdf](http://apps.who.int/iris/bitstream/10665/77969/1/9789241504379_eng.pdf), accessed 22 April 2014).
30. Stösver H, Lines R. Silence still = death: 25 years of HIV/AIDS in prisons. In: Matic S, Lazarus JV, Donoghoe MC, eds. *HIV/AIDS in Europe: moving from death sentence to chronic disease management*. Copenhagen, WHO Regional Office for Europe, 2006:67–86 ([http://www.euro.who.int/InformationSources/Publications/Catalogue/20051123\\_2](http://www.euro.who.int/InformationSources/Publications/Catalogue/20051123_2), accessed 30 November 2013).
31. Pont J, Stöver H, Wolff H. Dual loyalty in prison health care: carry on or abolish? *American Journal of Public Health*, 2012, 102(3):475–480.
32. Marteau D, Palmer J, Stöver H. Introduction of the Integrated Drug Treatment System (IDTS) in English prisons. *International Journal of Prisoner Health*, 2010, 6(3):117–124.
33. Grinstead O et al. Reducing post-release HIV risk among male prison inmates: a peer-led intervention. *Criminal Justice and Behaviour*, 1999, 26:453–465.
34. Van Meter J. *Adolescents in youth empowerment positions: special projects of national significance*. Washington, DC, United States Department of Health and Human Services, 1996.
35. Stöver H, Hennebel LC, Casselmann J. *Substitution treatment in European prisons. A study of policies and practices of substitution in prisons in 18 European countries*. London, European Network of Drug Services in Prison, 2004.
36. Stöver H, Thane K. *Towards a continuum of care in the EU criminal justice system. A survey of prisoners' needs in four countries (Estonia, Hungary, Lithuania, Poland)*. Oldenburg, BIS-Verlag, 2011.
37. *Substitution maintenance therapy in the management of opioid dependence and HIV/AIDS prevention*. Geneva, World Health Organization, 2004 (WHO/UNODC/UNAIDS position paper) ([http://www.who.int/substance\\_abuse/publications/en/PositionPaper\\_English.pdf](http://www.who.int/substance_abuse/publications/en/PositionPaper_English.pdf), accessed 30 November 2013).
38. Larney, S. Does opioid substitution treatment in prisons reduce injecting-related HIV risk behaviours? A systematic review. *Addiction*, 2010, 105:216–223.
39. Stallwitz A, Stöver H. The impact of substitution treatment in prisons – a literature review. *International Journal of Drug Policy*, 2007, 18:464–474.
40. Verster A, Buning E. *Methadone guidelines*. Amsterdam, Euro-Methwork, 2000 (<http://www.q4q.nl/methwork/guidelines/guidelinesuk/methadone%20guidelines%20english.pdf>, accessed 30 November 2013).
41. Hedrich D et al. The effectiveness of opioid maintenance treatment in prison settings: a systematic review. *Addiction*, 2012, 107(3):501–515.

42. *Principles of drug addiction treatment: a research based guide*. Bethesda, MD, National Institute on Drug Abuse, 2000.
43. *HIV/AIDS prevention, care, treatment and support in prison settings: a framework for an effective national response*. Vienna, United Nations Office on Drugs and Crime, 2006 ([http://www.who.int/hiv/pub/idu/framework\\_prisons.pdf](http://www.who.int/hiv/pub/idu/framework_prisons.pdf), accessed 30 November 2013).
44. Dolan K, Wodak AD, Hall WD. An international review of methadone provision in prisons. *Addiction Research*, 1996, 4:85–97.
45. Dolan K et al. Four-year follow-up of imprisoned male heroin users and methadone treatment: mortality, re-incarceration and hepatitis C infection. *Addiction*, 2005, 100(6):820–828.
46. Farrell M, Marsden J. Acute risk of drug-related death among newly released prisoners in England and Wales. *Addiction*, 2008, 103(2):251–255.
47. Zickler P. High-dose methadone improves treatment outcomes. *NIDA Notes*, 1999, 14(5) ([http://archives.drugabuse.gov/NIDA\\_Notes/NNVol14N5/HighDose.html](http://archives.drugabuse.gov/NIDA_Notes/NNVol14N5/HighDose.html), accessed 30 November 2013).
48. Kirchmayer U et al. A systematic review on the efficacy of naltrexone maintenance treatment in opioid dependence. *Addiction*, 2002, 97:1241–1249.
49. Minozzi S et al. Oral naltrexone maintenance treatment for opioid dependence. *Cochrane Database of Systematic Reviews*, 2006, (1):CD001333.
50. Stöver H, Marteau D. Scaling-up of opioid substitution treatment in adult prison settings – scientific evidence and practical experiences. *International Journal of Prisoner Health*, 2012, 7(2/3):45–52.
51. United Kingdom Harm Reduction Alliance [web site], 2014 (<http://www.ukhra.org>, accessed 20 January 2014).
52. Stöver H, Trautmann F. *Risk reduction for drug users in European prisons*. Utrecht, Trimbo's Institute, 2001.
53. *Evaluation of HIV/AIDS harm reduction measures in the Correctional Service of Canada*. Ottawa, Correctional Service of Canada, 1999.
54. Dolan K et al. *Bleach availability and risk behaviours in New South Wales*. Sydney, National Drug and Alcohol Research Centre, 1994 (Technical Report No. 22).
55. Dolan K, Wodak A, Hall W. HIV risk behaviour and prevention in prison: a bleach program for inmates in NSW. *Drug and Alcohol Review*, 1999, 18:139–143.
56. *Effectiveness of sterile needle and syringe programming in reducing HIV/AIDS among injecting drug users*. Geneva, World Health Organization, 2004 (Evidence for Action Technical Papers) (<http://www.who.int/hiv/pub/idu/pubidu/en>, accessed 30 November 2013).
57. Kapadia F et al. Does bleach disinfection of syringes protect against hepatitis C infection among young adult injection drug users? *Epidemiology*, 2002, 13(6):738–741.
58. Lines R et al. *Prison needle exchange: a review of international evidence and experience*, 2nd ed. Montreal, Canadian HIV/AIDS Legal Network, 2006.
59. Stöver H, Nelles J. Ten years of experience with needle and syringe exchange programmes in European prisons. *International Journal of Drug Policy*, 2004, 14:437–444.
60. *Report from the Commission to the European Parliament and the Council on the implementation of the Council Recommendation of 18 June 2003 on the prevention and reduction of health-related harm associated with drug dependence*. Brussels, European Commission, 2007 (COM (2007) 199 final) ([http://eurlex.europa.eu/LexUriServ/site/en/com/2007/com2007\\_0199en01.pdf](http://eurlex.europa.eu/LexUriServ/site/en/com/2007/com2007_0199en01.pdf), accessed 30 November 2013).
61. Matic S et al., eds. *Progress on implementing the Dublin Declaration on Partnership to Fight HIV/AIDS in Europe and Central Asia*. Copenhagen, WHO Regional Office for Europe, 2008 ([http://www.euro.who.int/Document/SHA/Dublin\\_Dec\\_Report.pdf](http://www.euro.who.int/Document/SHA/Dublin_Dec_Report.pdf), accessed 30 November 2013).
62. *Prevention and control of infectious diseases among people who inject drugs*. Stockholm, European Centre for Disease Prevention and Control, 2011.
63. Cook C. *Harm reduction policy and practice worldwide: an overview of national support for harm reduction and policy and practice*. London, International Harm Reduction Association, 2009.
64. Zurhold H, Haasen C, Stöver H. *Female drug users in European prisons*. Oldenburg, BIS-Verlag, 2005.
65. *Prevention of acute drug-related mortality in prison populations during the immediate post-release period*. Copenhagen, WHO Regional Office for Europe, 2010 ([http://www.euro.who.int/\\_\\_data/assets/pdf\\_file/0020/114914/E93993.pdf](http://www.euro.who.int/__data/assets/pdf_file/0020/114914/E93993.pdf), accessed 30 November 2013).

### Further reading

*Declaration on Prison Health as a Part of Public Health*. Copenhagen, WHO Regional Office for Europe, 2003 ([http://www.euro.who.int/\\_\\_data/assets/pdf\\_file/0007/98971/E94242.pdf](http://www.euro.who.int/__data/assets/pdf_file/0007/98971/E94242.pdf), accessed 30 November 2013).

Eder H et al. Comparative study of the effectiveness of slow-release morphine and methadone for opioid maintenance therapy. *Addiction*, 2005, 100:1101–1109.

Elger B, Ritter C, Stöver H, ed. *Emerging issues in prison health*. Heidelberg/New York, Springer (in press.)

Greifinger R, ed. *Public health behind bars – from prisons to communities*. Heidelberg/New York, Springer, 2007.

*International guidelines on HIV/AIDS and human rights. Consolidated version*. Geneva, Office of the United Nations

High Commissioner for Human Rights and the Joint United Nations Programme on HIV/AIDS, 2006 ([http://www2.ohchr.org/english/issues/hiv/docs/consolidated\\_guidelines.pdf](http://www2.ohchr.org/english/issues/hiv/docs/consolidated_guidelines.pdf), accessed 30 November 2013).

Kastelic A. Substitution treatment in prisons. In: Møller L et al., eds. *Health in prisons: a WHO guide to the essentials of prison health*. Copenhagen, WHO Regional Office for Europe, 2007:113–132 ([http://www.euro.who.int/\\_\\_data/assets/pdf\\_file/0009/99018/E90174.pdf](http://www.euro.who.int/__data/assets/pdf_file/0009/99018/E90174.pdf), accessed 6 November 2013).

Kastelic A, Perhac O, Kostnapfel Rihtar T. *General instructions for treating drug users in prisons in Slovenia*. Ljubljana, Ministry of Health and Ministry of Justice, 2001.

Kastelic A, Pont J, Stöver H. *Opioid substitution treatment in custodial settings – a practical guide*. Oldenburg, BIS-Verlag, 2008.

Klempova D. *Trends and patterns of drug use in the EU and drug users in EU prisons. 9th ENDIPP Conference, Ljubljana, Slovenia, 5–7 October 2006*.

Marshall T, Simpson S, Stevens A. *Alcohol and drug misuse*. Birmingham, University of Birmingham, Department of Public Health and Epidemiology, 1999.

Newman R. Methadone: the barest basics; a guide for providers. *SEEA Addictions*, 2003, 4(1–2).

Pisu M, Meltzer MI, Lyerla R. Cost effectiveness of hepatitis B vaccination of prison inmates. *Vaccine*, 2002, 21(3–4):312–321.

Rich JD et al. A review of the case for hepatitis B vaccination of high-risk adults. *The American Journal of Medicine*, 2003, 114, 4:316–318.

Sharfstein J, Wise PH. Inadequate hepatitis B vaccination of adolescents and adults at an urban community health center. *Journal of the National Medical Association*, 1997, 89(2):86–92.

Small W et al. Incarceration, addiction and harm reduction: inmates' experience injecting drugs in prison. *Substance Use & Misuse*, 2005, 40:831–843.

Wykes R. *The failure of peer support groups in women's prison in Western Australia*. Amsterdam, Drugtext Foundation, 1997 (<http://www.drugtext.org/Prison-probation/the-failure-of-peer-support-groups-in-womens-prison-in-western-australia.html>, accessed 30 November 2013).