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HEALTH INTERVENTIONS FOR PRISONERS

Update of the literature since 2007

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1. Background and introduction

HIV remains a serious problem in prison settings. HIV prevalence continues to be higher in prisons than in the general population, although prevalence varies geographically. While most of the prisoners living with HIV or AIDS in prison contract their infection outside of prison walls, the risk of being infected, in particular through sharing of contaminated injecting equipment and through unprotected sex, is great (2007 document). High risk behaviour, including injection drug use, sexual activity, and tattooing/body piercing is widespread within prison settings leading to transmission of HIV and HCV. Several studies have demonstrated that HIV prevention programmes, including education, condom distribution, OST, and needle and syringe programmes, can be successfully implemented in prisons and other closed settings.

In 2007, as part of the writing of the *Effectiveness of Intervention to Address HIV in Prisons* an extensive literature review was conducted. During the writing of this document, an abbreviated updated literature review was conducted in 2014 focusing on materials developed between 2007

and 2014. The same search terms used in 2007 were again used in 2014 and included: "prison(s)", "jail(s)", "correctional facility(ies)", "detention center(s)", "prisoner(s)", "inmate(s)", "HIV", and "human immunodeficiency virus". These search terms were combined with the focus areas of this document (such as "condoms", "sexual violence", "HIV/AIDS education", "medical male circumcision" etc). Publications including both adults and adolescents were included. Studies and materials presented in English and Spanish were included and an effort was made to collect materials from low-and middle-income countries. The initial search returned a total of 363 publications. After removal of duplicate articles presenting the same intervention, articles prior to 2007, non-relevant articles, and review articles including publications prior to 2007 a total of 70 articles remained and are presented in this report. Results from the 2014 review support the 2007 review. No articles were found directly contradicting publications from the 2007 review, nor the recommendations made in the 2007 report. The 2014 review supports the need for continued research in this area.

For each of the following prison-based HIV prevention focus areas, abbreviated summaries and recommendations are presented from the comprehensive 2007 WHO/UNODC/UNAIDS report, *Effectiveness of Interventions to Address HIV in Prisons.* Results from the 2014 review are presented below the abbreviated 2007 findings and recommendations and include reference summaries by focus area in tables from the 2014 review. Summaries and recommendations are presented by topic area and include: condoms, drug dependence treatment, HIV/AIDS education, sexual violence, HIV treatment, care, and support, HIV testing and counselling, and needle and syringe programmes. Unless noted otherwise, recommendations and findings apply to both adults and adolescent prisoners. For more detailed reading, the 2007 document can be obtained on the WHO website (http://whqlibdoc.who.int/hiv/pub/idu/prisons_effective/en/).

Terminology: In 2007 and again in this update, the term "prison" has been used for all places of detention and the term "prisoner" has been used to describe all who are held in such places, including adult and juvenile males and females detained in criminal justice and prison facilities during the investigation of a crime; while awaiting trial; after conviction and before sentencing; and after sentencing.

2. *Health Interventions in Prisons*

2.1. Condoms

As stated in the 2007 document, there is evidence that provision of condoms is feasible in a wide range of prison settings. It has been found that condom access is unobtrusive to the prison routine, represents no threat to security or operations, does not lead to an increase in sexual activity or drug use and is accepted by most prisoners and prison staff once it is introduced. At the same time, there is evidence that making condoms available to prisoners is not enough – they need to be easily accessible and in various locations throughout the prison.

The 2014 updated review supports the current recommendations and continues to demonstrate that access to condoms does not increase sexual activity,[1, 2] nor are condoms a threat to staff security;[3] condoms do however decrease transmission of HIV.[4] Continued acceptance of access

to condoms by prisoners and staff was found.[1, 5] Condoms should be delivered in an easily accessible manner[3,5] and delivery in combination with HIV prevention education is encouraged.[6,7]

2007 Recommendations:

1) Prison authorities in jurisdictions where condoms are currently not provided should introduce condom distribution programmes and expand implementation to scale as soon as possible.
2) Condoms should be made easily and discreetly accessible to prisoners so that they can pick them up at various locations in the prison, without having to ask for them and without being seen by others.
3) Together with condoms, water-based lubricant should also be provided since it reduces the probability of condom breakage and/or rectal tearing, both of which contribute to the risk of HIV transmission.
4) Education and informational activities for prisoners and for staff should precede the introduction of condom distribution programmes, which should be carefully prepared.
5) Female prisoners should have access to condoms as well as dental dams.

Country	Study	Summary
USA	Sylla M, et al (2010)	Likelihood of obtaining condoms increased after machine installation; sexual activity did not increase; staff acceptance of condom access increased.
Thailand	Wilson D, et al (2007)	Increasing acceptance of condom distribution among guards outside of health units was challenging.
USA	Leibowitz AA, et al (2012)	Condom distribution programme estimated to avert 25% of HIV transmissions among MSM inmates in K6G unit; condom distribution currently limited to one per week per prisoner.
Australia	Butler T, et al (2013)	Availability of condoms not associated with an increase in sexual activity. Condoms more likely to be used when available.
Australia	Yap L, et al (2010)	Dental dams are not widely used by women prisoners.
South Africa	Stephens T, et al (2009)	Demonstrated differences in condom use behaviour suggested that future prevention efforts focus on the importance of using condoms to prevent the spread of HIV/AIDS and other STIs.
USA	Harawa N, et al (2010)	Over half of men reporting have had sex while incarcerated stated they use condoms provided by the jail. Condoms should continue to be provided along with lubricant. Condoms should be easily accessible and without limitations on number of condoms distributed.
Australia	Yap L, et al (2007)	Decrease in reports of both consensual male-to-male sex and male sexual assaults five years after the introduction of condoms into prisons. There exists no evidence of serious adverse consequences of distributing condoms and dental dams to prisoners in NSW. Condoms are an important public health measure in the fight against HIV and sexually transmitted diseases; they should be made freely available to prisoners.
USA	Bryan AD, et al (2009)	Adolescents received 1 of 3 group-based interventions: combined sexual and alcohol risk reduction (group psychosocial intervention [GPI] and motivational enhancement therapy [GMET]); sexual risk reduction only (GPI); or HIV/STD prevention information only (GINFO). Condom use frequency decreased over time, although GPI and GPI_GMET interventions mitigated this at follow-up assessments. Active interventions were

Country	Study	Summary
		significantly more successful than the GINFO condition and the pattern of effects favored the GPI _ GMET, there were no statistically significant differences between GPI and GPI _ GMET.

2.2. Drug Dependence Treatment

As stated in the 2007 document, there is evidence that OST with methadone is feasible in a wide range of prison settings. Adequate prison-based OST programmes are effective in reducing injecting drug use and associated needle sharing and infections and they have been shown to have additional benefits for the health of prisoners participating in the programmes, for prison systems and for the community. OST may help to reduce risk of overdose deaths upon release; however strategies are needed to ensure continuity in treatment of opioid users as they move between the community and prison systems. It remains crucial to make OST available in prisons because of its role in facilitating delivery of antiretroviral therapy in people who inject drugs.

In contrast to OST, there is little data on the effectiveness of other forms of drug dependence treatment as an HIV prevention strategy, however good quality, appropriate, and accessible treatment has the potential of improving prison security, as well as the health and social functioning of prisoners, and can reduce reoffending, as long as it provides ongoing treatment and support, post-release care and meet the individual needs of prisoners. In addition, reducing the number of people who are in prison or compulsory treatment and rehabilitation centers because of problems related to their drug use must be a priority.

The 2014 updated review supports the current recommendations and continues to demonstrate positive outcomes associated with drug dependence treatment in prisons including a reduction in high risk harmful behaviour and drug use,[8-16] although delays in OST implementation in prisons may have a negative impact on the health of prisoners.[17] Among studies including opinions of prisoners regarding OST and other drug dependence treatment, prisoners generally favored the availability of such programmes.[18-19] Education should be provided in conjunction with or before introduction of OST[20] and specific emphasis should be focused on ensuring linkage to treatment at release between prison-based health care and community-based health care to decrease potential relapse.[10,12, 15-16]

2007 Recommendations:

1) Prison authorities in countries in which OST is available in the community should introduce OST programmes urgently and expand implementation to scale as soon as possible. Particular efforts should be undertaken to ensure that prisoners on OST prior to imprisonment are able to continue this treatment upon imprisonment, without interruption.
2) In addition to OST, prison authorities should also provide a range of other drug dependence treatment options for prisoners with problematic drug use, in particular for problematic use of other substances such as amphetamines and cocaine.

3) Prison authorities should devote particular attention to the availability of treatment and social support services for prisoners on their release, and work in collaboration with relevant authorities to ensure that comprehensive aftercare services are available.
4) States should affirm and strengthen the principle of providing treatment, education and rehabilitation as an alternative to conviction and punishment for drug-related offences are available.

Country	Study	Summary
Iran	Asl RT, et al (2013)	Findings of the urine analyses indicated a minimal yet consistent decrease in drug use over the six months. The pre and post- self-administered questionnaire data relayed modest changes in IDU risky behaviours associated with sexual practices; However, many prisoners continued with risky behaviours even when participating in harm reduction measures, such as methadone maintenance therapy.
Spain	De la Fuente L, et al (2012)	OST and NEP introduction was a great advance, but the delay (8-25 years) in implementation and low level of NEP coverage could have limited their potential impact on the improvement of the health of incarcerated persons.
Malaysia	Bachireddy C, et al (2011)	Survey administered to HIV+ current prisoners. Participants were asked about sexual and drug behaviours in 30 days prior to current incarceration. Half (51%) believed OST would be helpful, 33% believed they needed OST after release to prevent relapse, and 70% wanted to learn more about OST. Among those with prior OST experience, 93% stated they would refer friends to treatment suggesting possibility for peer education.
USA	Magura S, et al (2009)	Participants randomly assigned to either buprenorphine or methadone maintenance. Completion rates were similar; no significant difference was found on post-release relapse between treatment groups.
Iran	Eshrati B, et al (2008)	Knowledge about HIV transmission was high among prisoner population; however additional education should be targeted at prisoners to increase perceptions of effectiveness of health benefits of using harm reduction strategies surrounding drug use (i.e. NSP, clean syringes).
Switzer-land	Favrod-Coune T, et al (2013)	OST was offered to all drug users entering the detention center and all accepted treatment. Methadone was the preferred treatment. Post-release use continued for almost half of prisoners released. Prescription and use of OST was improved by having trained practitioners provide prescriptions, without restriction.
USA	Gordon MS, et al (2009)	Methadone maintenance, initiated prior to or immediately after release from prison, increases treatment entry and reduces heroin use at 6 months post-release compared to counselling only.
USA	Kinlock TW, et al (2009)	Prisoners were assigned to one of three groups: (a) Counselling Only: counselling in prison, with passive referral to treatment upon release; (b) Counselling + Transfer: counselling in prison with transfer to methadone maintenance treatment upon release; and (c) Counselling + Methadone: counselling and methadone maintenance in prison, continued in the community upon release. Counselling + Methadone participants were significantly less likely than participants in each of the other two groups to be opioid-positive or cocaine-positive.
Puerto Rico	Garcia CA, et al (2007)	Treatment completers compared with non-completers had significantly greater reductions in self-reported heroin use, cocaine use, and crime and were less likely to be opioid-positive according to urine drug testing.
Multiple	Hedrich D, et al (2012)	(Review) OMT was associated significantly with reduced heroin use, injecting and syringe-sharing in prison if doses were adequate. Pre-release OMT was associated significantly with increased treatment entry and retention after release if arrangements existed to continue treatment. Disruption of OMT continuity,

Country	Study	Summary
		especially due to brief periods of imprisonment, was associated with very significant increases in HCV incidence.
Australia	Shearer J, et al (2007)	Oral naltrexone was an unpopular option among opioid-dependent inmates in this study. Agonist treatments were preferred. Funding support for the naltrexone provision was withdrawn after conclusion of study. Recommendation to continue with provision of methadone maintenance or buprenorphine maintenance and counselling.
USA	Sacks JY, et al (2012)	Effectiveness of prison-based treatment for women in general and therapeutic treatment in particular in reducing drug use, criminal activity, and exposure to trauma, and increasing mental health functioning and time until re-incarceration was demonstrated among participants.
USA	Springer SA, et al (2010)	Buprenorphine induction and stabilization was shown to be acceptable, tolerable and an effective treatment to prevent relapse to opiate use in released HIV-infected prisoners. It appears to be effective at maintaining HIV outcomes and potentially decreasing HIV-associated morbidity and mortality.
Malaysia	Wickersham JA, et al (2013)	Beginning 4 months before release, standardized methadone initiation and dose escalation procedures began with 5 mg daily for the first week and 5 mg/daily increases weekly until 80 mg/day or craving was satisfied. Participants were followed for 12 months post-release at a MMT clinic within 25 kilometers of the prison. Higher doses of MMT at time of release are associated with greater retention on MMT after release to the community.
India	UNODC (2013)	Retention rates were 98% of OST clients in prison settings. A significant reduction was found in the severity of dependence, craving for drugs and withdrawal symptoms. Decreases in high risk behaviour including injecting drug use, sharing of needles, and unsafe sexual activities were seen. Prison authorities noted improvements in health and personal hygiene among inmates. Challenges included unpredictable stays by prisoners, lack of linkage to community programmes at release, and frequent staff rotation.
USA	Freudenberg N, et al (2010)	Participants (N=552) were recruited in city jails and randomly assigned to receive an intensive 30-hour jail/community-based intervention or a single jail-based discharge planning session. All participants were also referred to optional services at a community-based organization (CBO). Assignment to REAL MEN and, independently, use of CBO services, significantly reduced the odds of substance dependence one year after release.

2.3. HIV/AIDS Education

As stated in the 2007 document, there is evidence that well-designed HIV/AIDS information and education programmes can improve prisoners' knowledge about HIV/AIDS. Studies undertaken in a number of countries, including in low and middle income countries, have demonstrated a need for information and education programmes in prisons, and shown that well-designed programmes can improve prisoners' knowledge about HIV/AIDS. Knowledge alone is insufficient, but it is a precursor to protection from infection. A few evaluations have indicated self-reported behavioural change (particularly upon release) as a result of prison-based educational initiatives, but the effectiveness of educational efforts is difficult to measure and it remains largely unknown whether they reduce HIV transmission among prisoners. HIV information and education programmes in prisons are more likely to be effective if developed

and delivered by peers. A number of other factors appear to influence the effectiveness of informational and educational interventions including: a) the comprehensiveness of the programme; b) whether it is specific to the needs of the population; c) whether it is appropriate for the average prisoners' reading and comprehension level; d) whether it has been designed with the input of prisoners; e) whether it is instructor-led or peer-based; f) time of offering of the programme; g) method used to distribute information; and h) whether the programme includes pre- and post-test counselling.

The 2014 updated review supports the current recommendations and continues to demonstrate the importance of peer-based HIV/AIDS education.[21-22] HIV/AIDS education programmes should be comprehensive,[22-29] yet easy to administer.[30] Additionally, programmes should include focus on overall stigma reduction.[21]

2007 Recommendations:

1) Considering that prisons are important settings for informational and educational programmes for both prisoners and staff about HIV and other infectious diseases, prison systems should establish well-designed programmes in all prisons.
2) Where possible, education delivered for prisoners by the prison system should be supplemented by peer education programmes that have been shown to be more effective in reaching prisoners.
3) Informational and educational programmes are but one component of an effective programme to manage HIV in prisons and must be supplemented by other programmes. In particular, prisoners must be provided with the prevention measures that enable them to act upon the information they receive.

Country	Study	Summary
South Africa	Sifunda S, et al (2008)	Control group and two experimental groups (Trained HIV- and HIV+ peer educator led groups). Twelve, 1.5 hour intervention sessions conducted over six weeks covering HIV/AIDS, STIs, nutrition, TB prevention and management, alcohol and other drug abuse, sexuality, and manhood/general life skills. Long-term results showed some differences in practicing safer sex and better sexual negotiation skills.
USA	Derlega VJ, et al (2008)	Stigma towards persons living with HIV and inaccurate theories on HIV transmission were seen among inmates. Recommendations included peer-based HIV education programmes to reduce stigma and increase knowledge on HIV transmission.
USA	Fields J, et al (2008)	Comprehensive and peer-based HIV education is critical for programme success.
Taiwan	Ko NY, et al. (2009)	The study findings showed that a brief TTM-based HIV education programme can be effective for drug-dependent inmates. TTM included one-hour lecture on transmission, prevention, symptoms, screening, and treatment of HIV associated with bloodborne viral infections and injection drug use. Included skill-building session on safe injection, needle cleaning, and disinfection, and condom use.
USA	Martin S, et al (2008)	DVD targeted group was less likely than standard intervention groups to have unprotected sexual intercourse. Feedback shows that intervention must be brief and simple to administer.
USA	Grinstead O, et al (2008)	Project START showed that enhanced intervention (EI) was more successful than single session intervention (SSI) in reducing sexual risk behaviours. Sessions were

Country	Study	Summary
		conducted by personnel outside of the correctional institution. Incentives were provided at week one and week twelve.
Switzer-land	Fluhmann P, et al (2012)	HIV and Hep C information was presented to prisoners using a structured information exchange (StIE) model at the beginning of their prison sentence.
USA	Goldberg E, et al (2009)	Participants were randomly assigned to one of three conditions: education intervention; education intervention with booster; or no systematic intervention. At 6 months, males in the education and booster groups sustained increases in knowledge scores. Females in these groups sustained increased condom attitude scores. Males in the booster group sustained increased prevention attitude scores. Females in the booster group reported more consistent condom use.
USA	Gurdin J, et al (2008)	The intensive, short-term intervention consists of four, one-hour, small-group sessions focusing on health education issues, particularly HIV/AIDS. Following the intervention, programme participants expressed more favorable attitudes toward condoms, and were more likely to use condoms during intercourse, as compared with the comparison group of teens.
USA	Hurd NM, et al (2010)	Examined the effectiveness of an adapted 4-session HIV prevention programme. Participants participated in either the 8- or the adapted 4-session HIVEd programme. Findings indicate participants in both programmes had positive changes at post interview across all study outcomes. No significant differences in changes between participants in the 4- and 8-session programmes were found.
USA	Robertson AR, et al (2011)	Adolescent girls incarcerated in a state reformatory were recruited/assigned to an 18-session health education programme or a time-equivalent HIV prevention programme. Post intervention, HIV risk reduction programme participants demonstrated the acquisition of risk-reduction behaviours and improved condom application skill.

2.4. Sexual Violence

As stated in the 2007 document, there is evidence from countries around the world that rape and other forms of sexual violence occur in prisons. This poses a serious threat to the health of prisoners, psychologically and physically, including the risk of HIV and other sexually transmitted infections. While some prison systems continue to deny the existence of the problem, fail to collect statistical data on sexual violence in prison, and neglect to provide prison staff training in recognizing, preventing, and responding to prisoner sexual violence, other prison systems have shown that it is possible to fundamentally change the way in which sexual violence is addressed in prison, within a relatively short timeframe. These systems typically adopt methods to document incidents of prisoner sexual violence, undertake prevention effort, provide staff training, undertake investigation and response efforts, and provide services to victims, including access to PEP.

The 2014 updated review supports the current recommendations and re-emphasizes that sexual violence does occur in prison settings. Structural interventions such as cameras and involving prison staff in sexual violence prevention[31-32] should be implemented and the need to focus on violence prevention and coping in prisons[33] is essential. In studies involving prisoner input, the importance of guards in preventing sexual assault was emphasized.[34]

2007 Recommendations:

1) Prison systems should develop and implement multi-prong strategies for enhancing the detection, prevention, and reduction of all forms of sexual violence in prisons and for the prosecution of offenders.
2) Formal evaluations of the various components of the policies and programmes to address rape and other forms of sexual violence in prison should be undertaken.
3) Victims of sexual assault in prison should have access to post-exposure prophylaxis. In addition, prison systems should make PEP available in other cases in which PEP could reduce the risk of HIV transmission after exposure to HIV.

Country	Study	Summary
USA	Kerbs JJ, et al (2007)	Older prisoners were found to be at higher risk for victimization than younger counterparts. Prisoners stated a desire for more guards to help with protection.
USA	Ravi A, et al (2007)	A high percentage (65%) of women inmates in this sample reported experiencing abuse prior to entering prison. HIV prevention programmes in prisons should focus on violence prevention/coping and the link between HIV and violence.
USA	La Vigne, et al (2011)	Three separate interventions were piloted for a 12-month period in 2009. Site A adopted an electronic system to track officers' rounds, Site B installed cameras to reduce blind spots and record evidence for investigations, and Site C trained officers in crisis intervention to help improve their interactions with inmates and their ability to identify and prevent violent acts before they occur. At Site A, fewer instances of force were reported. At Site B, violence was perceived as likely to occur among inmates after cameras were installed. At site C, effectiveness was unable to be evaluated due to inmate holding restructuring, however guards reported favorable impression of programme and training and recommended expansion of the programme.
Australia	Yap L, et al (2007)	Authors interviewed prison inmates about decreasing rates of sexual assaults in prisons. Changes implemented in prisons as assaults decreased were fewer prisoners per cell, a toilet and shower located in the cell, increasing number of cameras introduced into cells, day rooms, yards, and programme areas, roaming guards rather than stationary posts, and housing of inmates by risk level. Additionally, a duty of care standard has been emphasized among guards. Guards are expected to improve their awareness of their duty of care obligations to victims of prison sexual assaults and prisoners at increased risk of assault.

2.5. HIV Counselling and Testing

As stated in the 2007 document, there is evidence that programmes that make HIV testing and counselling easily accessible to prisoners on entry to prison and throughout incarceration result in increased uptake of testing and counselling. This is particularly true if HIV testing and counselling are part of a comprehensive care and treatment programme for HIV-positive prisoners and if HIV test results are kept confidential and those voluntarily disclosing their HIV-positive status do not face discrimination or abuse. In addition to access to HIV testing and counselling, prisoners need access to the means to protect oneself. Mandatory HIV testing is unethical and there is evidence suggesting that mandatory HIV testing and segregation of HIV-

positive prisoners is costly, inefficient, and can have negative health consequences for segregated prisoners.

The 2014 updated review supports the current recommendations and emphasizes the importance of voluntary HIV testing in prisons and the offering of confidential counselling and testing as soon as possible after prison entry to increase the likelihood prisoners are tested and that they receive their results before discharge or transfer.[35-40] Additionally, rapid testing also increases the likelihood that prisoners will know their HIV status.[41-44] HIV testing, including opt-out testing was accepted by the majority of prisoners and staff in the studies reviewed[45-47] and was found to be more effective at case detection in one study comparing opt out and opt in testing among prisoners.[48] HIV testing and counselling can be offered in conjunction with other risk reduction services such as provision of condoms and STI screening to increase effectiveness of HIV prevention efforts in prisons.[49-50,40] For prisoners nearing release, HIV care and treatment should be made available through community settings.[40,44]

2007 Recommendations:

1) Prison systems should provide easy access to HIV testing and counselling.
   In particular, voluntary HIV testing and counselling:
   - should be easily accessible to all prisoners upon entry and during imprisonment
   - should always be confidential, and everyone being tested should give informed consent and receive counselling
   - should be closely linked to access to care, treatment, and support for those testing positive, and be part of a comprehensive HIV programme that includes access to prevention measures.
2) Prison systems should not adopt policies of mandatory testing and segregation, as they are counterproductive and can have negative health consequences, including for segregated prisoners.

Country	Study	Summary
Jamaica	Andrinopoulos K, et al (2010)	Demonstration project provided mandatory opt-out testing for new prisoners and psychiatric patients and voluntary HIV testing for prisoners >6months. Pre/post-test counselling provided. 63% accepted voluntary testing and 16% refused mandatory opt-out testing. Relatively high rate of acceptance for voluntary testing. Confidentiality was assured and HIV education was provided.
USA	Arp W (2009)	Prisoners were surveyed and asked if they believe inmates should be tested for HIV when they enter prison and when released from prison. Among surveyed inmates, 97% agreed inmates should be given a mandatory test for HIV and 99.7% agreed every inmate should receive treatment for HIV/AIDS when they have tested positive.
USA	Kavasery R, et al (2009)	Male prisoners accepted HIV testing at higher rates when opt-out testing was offered within 24 hours of incarceration.
USA	Kavasery R, et al (2009)	Female prisoners accepted testing in prison at higher rates when opt-out testing was presented immediately (within 24 hours) after incarceration. Prison staff stated they preferred to offer testing immediately because of high turnover rates.
USA	Duffus WA, et al (2009)	Retrospective cohort study demonstrated the lack of routine HIV screening in South Carolina correctional facilities fostered missed opportunities for earlier diagnosis of HIV for inmates. Routine screening and testing should be implemented in prisons to

Country	Study	Summary
		facilitate early diagnosis of HIV.
USA	Jafa K, et al (2009)	HIV diagnosis was delayed among prison inmates because of a lack of testing in prison facilities. The importance of timely diagnosis and appropriate treatment is demonstrated by the high proportion of seroconverters who were infected with drug-resistant strains.
USA	Javanbakht M, et al (2007)	Prevention programmes existing in the MSM unit include individual level HIV education and prevention, condom distribution, and HIV and STI counselling. Screening resulted in a high prevalence of STIs and HIV.
USA	Beckwith CG, et al (2010)	Only 28% of participants in conventional cohort received HIV test results versus 100% in rapid test cohort. Rapid testing greatly improved the odds of receiving test results.
USA	Macgowan R, et al (2009)	Rapid testing was able to identify a considerable number or previously undiagnosed cases of HIV infection and greatly improved the number of prisoners receiving their results and the time in which results were delivered.
South Africa	Motshabi LC, et al (2011)	Majority of participants were knowledgeable about HIV transmission, however, barriers to preventing testing and counselling include: stigma, discrimination, lack of trust in health care professionals, poor or bad attitudes of health care professionals, and not knowing about availability of VCT. Programmes addressing stigma and discrimination among health care workers should be implemented.
USA	De Voux A, et al (2012)	Results from the EnhanceLink demonstration project suggest that HIV testing in jails can lead to new diagnoses of HIV infection and that these infections are being diagnosed substantially early on in the course of the disease. Rapid turnover was not found to be an impediment to jail-based HIV screening. Most inmates did not initiate care while detained. Linkage to care after release emphasized.
USA	Beckwith CG, et al (2011)	Staff and key informants interviewed about rapid HIV testing experience. Positive experiences were reported with rapid testing and the method was preferred over conventional testing models. Prisoners were reported to be more compliant when offered rapid testing versus conventional testing and staff workload was reduced. Universal agreement that immediate access to HIV test results is an advantage and benefit of rapid testing, especially with high turnover of prisoners.
USA	Strick LB, et al (2011)	Change in procedure from testing request to opt-in testing to opt-out testing in Washington State Jails increased testing among inmates from 5% to 72% to 90%, respectively. Opt-out testing was most effective at case detection.
USA	Tartaro C, et al (2012)	As part of the testing process, inmates are assured they will receive free medical care during duration of jail stay and those that lack health insurance will receive outpatient treatment from a local service provider upon release. Rapid testing increases the number of inmates receiving test result before discharge. A large percentage of prisoners received their first HIV test in jail.
USA	Tuli K, et al (2009)	HIV and syphilis screening and condom distribution programmes were initiated in the MSM unit of the Los Angeles county jail. Modeling indicates that the intervention can avert many sexually transmitted infections at low cost and can save costs in a scenario in which inmates continue to engage in sexual activity as they do outside jail.
Multiple	UNODC, UNAIDS, WHO (2009)	Review document on HIV testing and counseling in prisons. Evidence and current practices reviewed, minimum requirements for programs are given, and policy framework and recommendations included in the document. Prisons should introduce comprehensive HIV prevention programs that include: information and education, provision of condoms and water-based lubricant, needle and syringe programmes, other measures to decrease sexual transmission, drug dependence treatment, and HIV treatment, care, and support, including provision of ART.

2.6. HIV Care, Treatment, and Support

As stated in the 2007 document, there is evidence that antiretroviral therapy (ART) has significantly decreased mortality due to HIV and AIDS in countries where ART has become accessible. There has been a parallel decrease in the mortality rate among incarcerated individuals in prison systems in those countries. Providing access to ART for those in need in the context of prisons is a challenge, but it is necessary and feasible. Studies have documented that, when provided with care and access to medications, prisoners respond well to ART. Adherence rates in prisons can be as high as or higher than among patients in the community, but the gains in health status made during the term of incarceration may be lost unless careful discharge planning and linkage to community care are undertaken. As ART is increasingly becoming available in developing countries and countries in transition, it will be critical to ensure that it also becomes available in the countries' prison systems.

Ensuring continuity of care from the community to the prison and back to the community, as well as continuity of care within the prison system, is a fundamental component of successful treatment scale-up efforts. Other measures could also have a positive impact on HIV care, treatment and support in prison. These include ensuring that prison health care be appropriately funded and evolve from the "sick call" model employed in many prison systems into a proactive system that emphasizes early disease detection and treatment, health promotion, and disease prevention. In the medium and longer-term, transferring control of prison health to public health authorities could also have a positive impact. Health care in prisons can be delivered more effectively by public health authorities than by prison management, if proper resources are provided and freedom of action of the new prison health authorities is guaranteed.

The 2014 updated review supports the current recommendations and emphasizes the importance of reducing HIV stigma and discrimination inside of prisons.[51-54] To increase adherence in prisons, confidentiality should be assured and positive relationships with prison health staff are essential.[51-53] To ensure continuation of treatment at release, linkage to community-based care and discharge with an adequate supply of ART are critical.[55-58]

2007 Recommendations:

1) Prison systems should ensure that HIV-positive prisoners receive care, treatment and support equivalent to that available to people living with HIV in the community, including ART.
2) As ART becomes increasingly available in low and middle income countries, actors at the international, national, and regional and local levels should ensure that it also becomes available in prisons.
3) Efforts need to be undertaken by prison authorities, working with the other components of the criminal justice system and with external health authorities and NGOs, to ensure continuity of care, in particular, ART, from the community to the prison and back to the community, as well as within the prison system.
4) Where OST is available in the community, it should also be available in prisons, so that people on OST and ART are able to access both without interruption.

5) In the context of efforts to increase access to care and treatment, including ART, prison systems should provide easy access to HIV testing and counselling.

Country	Study	Summary
USA	Roberson DW, et al (2009)	Lack of confidentiality (visible medication lines), stigma, access to medication, and strained relationships with prison health staff negatively influenced ART adherence while incarcerated. ART programmes in prison should include inmate input, protection of medical information, and improved relationships between providers and inmates including stigma reduction strategies.
USA	Fontana L, et al (2007)	Prisoners stated a lack of continuum of care between prison and community during release period. Limited interaction and coordination between the two systems was noted. Discharge models for patients with HIV should follow previously demonstrated successful efforts to increase collaboration between prison system and community that increase retention in care.
Canada	Small W, et al (2009)	Delays in obtaining HIV care and treatment were noted. Poor relationships between prison health staff and prisoners negatively impacts adherence to treatment. High levels of stigma influences ability to take medication and resulted in missed doses. Problems ensuring continuity of treatment post-release were identified.
Namibia	Shalihu N, et al (2014)	Barriers to ART adherence included: insufficient privacy, stigma, lack of support for adherence, insufficient nutritional intake, market value of ARTs to exchange for money or other benefits, discrimination by prison staff, and lack of information about HIV transmission and care.
USA	Wohl DA, et al (2011)	Project BRIGHT randomized control trial found that an intensive case management intervention spanning the periods of incarceration and release of HIV-infected individuals was as effective for released prisoners as a comprehensive pre-release discharge planning programme in terms of accessing medical care over the year following release.
USA	Nunn A, et al (2010)	COMPASS programme (intensive case-management programme) positively impacted linkage to HIV care and other services for HIV-positive jail inmates. Programme links HIV-positive jail detainees from Rhode Island jails to HIV care and other clinical and social services in the community. Participants stated programme assisted in preventing drug relapse after prison release.
USA	Zaller ND, et al (2008)	Of all clients in Project Bridge, 45.8% secured housing, 71% were linked to mental health care, and 51% were linked to addiction services. Despite high levels of addiction (97%) and mental health disorders (34% on medication), ex-offenders were retained in health care for a year after being released from incarceration. Regular contact was deemed essential in building trust.
USA	Catz SL, et al (2011)	Interviewees reinforced the need to deliver confidential HIV prevention-related information in prisons to reduce stigma and safety threats. Prisons need to deliver timely updates on HIV prevention and information relating to HIV care in a manner that protects a person's HIV status.
USA	Pant Pai N, et al (2009)	Continuous ART therapy in jail inmate's benefits CD4 cell counts and control of VL especially compared to those who never took ART. Although jail inmates on intermittent ART were more likely to lose CD4 cells and experience higher VL over time than those on continuous ART, CD4 cell loss was slower in these inmates as compared to inmates never on ART.

2.7. Needle and Syringe Exchange Programmes

As stated in the 2007 document, there is evidence that NSPs are feasible in a wide range of prison settings and prison-based NSPs appear to be effective in reducing needle-sharing and resulting HIV infection. Additionally, prison-based NSPs have additional and worthwhile benefits including a reduction in overdose risk and decreased abscesses and they can facilitate referral to drug dependence treatment programmes and lead to an increase in the number of prisoners accessing such programmes. There is no convincing evidence of any major unintended negative consequences. To facilitate the success of NSPs, prisoners need to have easy, confidential access to NSPs, and prisoners and staff should receive information and education about the programmes and be involved in their design and implementation.

The 2014 updated review supports the current recommendations and demonstrates the occurrence of needle sharing in prisons[59-60] while including documented cases of reduction in needle sharing practices after the introduction of a NSP,[61] potential decrease in drug abuse,[62] and a reduction of HIV infection after the introduction of a NSP.[63] Prisoners and staff interviewed do not believe that NSPs increase drug use, but that they do improve hygienic living conditions.[63]

2007 Recommendations:

1) Prison authorities in countries experiencing or threatened by an epidemic of HIV infections among IDUs should introduce needle and syringe programmes urgently and expand implementation to scale as soon as possible.
2) Additional research about prison-based NSPs should be undertaken to address remaining knowledge gaps.

Country	Study	Summary
Canada	Milloy MJ, et al (2013)	Analysis of data from a cohort of PWID from 1996-2012 showed that virus levels increased when persons were incarcerated stating hesitancy to disclose HIV status and treatment interruptions and treatment delays, and. Drug use continued while in jail, reinforcing the need for needle exchange programmes in prisons.
USA	Seal DW, et al (2008)	Study participants reported not using HIV prevention measures when using injection drugs. Supports the need for needle exchange and education programmes for HIV prevention.
Spain	Ferrer-Castro V, et al (2012)	In ten years a total of 15,962 syringes were supplied to 429 users and 11,327 (70.9%) were returned. The prevalence of HIV infection decreased from 21% in 1999 to 8.5% in 2009, HCV prevalence from 40% to 26.1%. Most of the inmates and civil servants believe that the programme did not increase intravenous drug use and improves hygienic living conditions in prison.
Kyrgyzstan	Moller LF, et al (2008)	After development of a needle exchange programme in two prisons, needle sharing decreased from 20% to 8% during the study period.
Iran	Roshanfekt P, et al (2013)	Interviews were conducted with prisoners who stated they had received harm reduction services. Research shows that the programmes, including needle and syringe exchange, have a significant effect on reducing the abuse of drugs among the prisoners studied.

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