

Prison-Based Syringe Exchange Programs

**A Review of International Research and Program
Development**

Scott Rutter, Kate Dolan, Alex Wodak
and Hans Heilpern

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Abbreviations and Glossary

BBVI	Blood borne viral infection
IDU(s)	Injecting Drug Use(rs)
MMT	Methadone Maintenance Treatment
MSO	Most Serious Offence
NSW	New South Wales
NSP	Needle and Syringe Program
PSE	Prison Syringe Exchange
Primary HIV infection	Symptomatic response following HIV infection
2x2x2	Syringe cleaning method: syringe is flushed twice with water, twice with bleach and twice with water
WHO	World Health Organisation

Executive Summary

The Government of the Australian Capital Territory commissioned this review. Few papers have been published reporting evaluation of Prison Syringe Exchange Programs. Only some of this material has been published in English or has been previously translated into English. This review has been based on a comprehensive search of electronic databases, contact with experts in this field to identify any missed publications and the existing published literature and material which was translated specially for this review. Some of this review is based on the 'grey literature' of reports and other official documents.

The first prison syringe exchange program in the world was established in Switzerland in 1992. A total of 19 prison syringe exchange programs were operating as of December 2000 (7 in Switzerland, 7 in Germany and 5 in Spain). A further three countries (Italy, Portugal and Greece) were also seriously considering the introduction of prison syringe exchange programs. Prison regulations have been modified to allow these facilities to operate under certain conditions. Most programs are in small prisons with fewer than 200 inmates. Programs operate in both male and female prisons. In some prisons, injecting equipment is provided by health professionals while in other prisons, automatic vending machines exchange sterile injecting equipment for used needles and syringes.

Evaluation of pilot prison syringe exchange programs in Switzerland, Germany and Spain has been favourable in all cases. Drug use patterns reported at interview were stable or decreased over time (six prisons). Reported syringe sharing declined dramatically and was virtually non-existent at the conclusion of most pilot studies. No cases of inmates seroconverting for HIV, hepatitis B or hepatitis C have been reported in any prison with a prison syringe exchange program. No serious unintended negative consequences have been reported. There have been no reported instances of initiation of injecting. The use of needles or syringes as weapons has not been reported. One inmate (in Germany) is reported to have been injured by a discarded used needle. The number of needles and syringes distributed correlated with increased quantities of drugs detected in prisons and also when inmates receive payment.

Staff attitudes were generally positive but response rates to these surveys varied. Attempts were made in all prisons to involve staff in planning. Staff from prisons where programs had been successfully established were involved in planning new programs in different prisons. In each country, negative attitudes of prisons staff to these programs reflected similar attitudes to harm reduction programs in the community.

The rationale for establishing syringe exchange programs in prisons is even stronger than in communities. This rationale is accepted by an impressive number of prestigious bodies. Because of the rapid turnover of inmate populations, spread of blood borne viral infections among prisoners cannot be considered to remain

for long within the confines of correctional facilities. There is increasing evidence that experience of incarceration is a strong predictor of HIV and hepatitis C infection.

Overall, this review confirms that prison syringe exchange programs are feasible. Based on the data available and extrapolating from the vast literature on community-based programs, prison syringe exchange programs appear to be effective in reducing blood borne viral infections. At this stage, there is no evidence to suggest that these programs have serious unintended negative consequences.

Rationale for Prison Syringe Exchange Programs

The threat of HIV infection among and from IDUs was recognised in the early 1980s. Illicit drug use continues to spread globally with increasing numbers of countries reporting serious epidemics of IDUs. In many countries, extensive spread of HIV among IDUs was followed by rapid spread of HIV through the general community. Fortunately, authorities in Australia responded promptly and responsibly with early, vigorous and comprehensive implementation of effective prevention strategies. However, implementation of similar prevention strategies has been much slower within prison settings where IDUs are over represented. Even countries with pragmatic health policies, such as Australia, still debate equitable provision of prevention strategies between the general community and the prison community.

Over the last decade, convincing evidence has emerged of the important role of prisons in the spread of HIV and other blood borne infections. This information has been slower to generate because of the difficulty of conducting research in prisons. There is now persuasive evidence that community needle and syringe programs (NSPs) reduce the spread of HIV among IDUs without increasing drug injecting. In prisons the risk of BBVIs is increased due to the large number of IDUs who continue to inject. Although injecting in prison is less frequent than in the community each episode of injecting is far more risky due to the greater scarcity of injecting equipment and the higher prevalence of syringe sharing. Rapid turnover of prison populations also results in far more changes in injecting partners than in community settings and there is considerable interaction between inmate and community injecting populations. International health and government authorities, such as the World Health Organisation (WHO), the Joint United Nations Programme on HIV/AIDS (UNAIDS) and the Eastern European Council, recognised in the early 1990s that prisons presented unique health risks both to prisoners and the broader community. These authorities called for countries to implement where possible the same prevention measures in prisons that were known to be effective within the community. However, few countries were willing to implement the diverse measures that had been implemented in the community. However growing evidence suggests that these measures will prevent the spread of blood borne viral

infections (BBVI) in incarcerated populations. This requires a joint effort between legislative representatives, prison authorities, correctional staff, health staff and prisoners.

Current Prison-Based Syringe Exchange Programs

A prison doctor in Switzerland started the first prison syringe exchange program (PSE) in 1992 as an act of civil disobedience prompted by a concern to protect public health. Currently 19 prison syringe exchange (PSE) programs are operated in Switzerland (7), Germany (7) and Spain (5). Most PSE were established as a collaborative effort between government, health and prison authorities. Prison regulations were modified to allow possession of syringe as a non-punishable offence provided they were stored in specified areas. The majority of the 19 PSE operate in small prisons with less than 200 inmates. There are two basic protocols for operation that have been established for these European PSE programs. In the first protocol syringes or injecting kits are distributed through prison doctors or counselling staff. The second protocol utilises automatic dispensers that exchange a new syringe for a used syringe. Inmates received one dummy (unusable) syringe at the start of these programs or when they enter the prison. The dummy syringe can then be exchanged for a real one. Six of the 19 PSE have been scientifically evaluated.

Results from the evaluations of pilot programs in Switzerland, Germany and Spain have all been positive. Interview data have indicated that drug use patterns remained stable or decreased over time in the six prisons. No instances of prisoners starting drug use were reported. Reports of syringe sharing dropped dramatically and were virtually non-existent at the end of most of the pilots. No seroconversions for HIV, hepatitis B or hepatitis C have been reported in these prisons operating PSE. Also no instances of syringes being used as weapons have been reported in any program. Only one report of an inmate being injured in a German prison due to a discarded syringe was reported. The number of needles and syringes distributed fluctuated over time in each of the prisons. Analysis of distribution data found a correlation between increased syringe distribution with increased amounts of drugs in the prisons and prisoners having received recent payments.

Attitudes of staff in the various prisons were generally positive although response rates in surveys varied. Efforts were made in all prisons to involve staff in the planning and development of each program. Staff at prisons where PSE were being developed often drew upon the experience of staff from other prisons with PSE in the early stages of implementation. Most evaluation results indicated an overall positive attitude from staff towards the programs. In each country, negative responses by staff members to PSE were directly correlated with similar attitudes to harm reduction within the community.

Switzerland

Seven PSE programs currently operate in Switzerland. A doctor in Oberschöngrün started the first program unofficially in 1992. Currently two

programs operate with distribution of syringes through the prison doctor. Two other programs distribute syringes via an automatic dispensing machine at a women's prison in Hindelbark and a men's prison in Realta. Three additional programs now operate with few published details available. Evaluation of two programs revealed stable to decreasing drug use patterns, no documented transmission of HIV or hepatitis B or hepatitis C and no incidents where the programs were abused or syringes were used as weapons. Although no official evaluation has been conducted for the program in Oberschöngrün, observational reports from the doctor indicate there have been no incidents with syringes, no recorded transmissions of HIV, hepatitis B or hepatitis C and a decrease in the number of abscesses due to injecting drug use. The positive results of the programs have resulted in the Ministry of Justice releasing an official statement confirming the legality and the "necessity" of such programs and one canton now requires PSE in all prisons although some resistance has been noted from prison staff in the larger prisons.

Germany

Seven PSE operate in Germany with two programs being evaluated. The first two prisons to implement PSE were a men's prison in Lingen and a women's prison in Vechta. Both of these programs commenced in 1996. Both prisons had high proportions of drug users in their population that prompted prison health staff to request the PSE. Drug and alcohol counsellors distributed syringes in the Lingen prison. The Vechta prison used automatic dispensers to distribute syringes. The results of the independent evaluation indicated successful operation after the 2-year pilots. Syringe sharing and overdoses decreased significantly. There were no reported attacks and only limited incidents due to improper storage of the syringes or use of syringes by inmates on methadone. There was reluctance of inmates in the men's prison to use the PSE due to the lack of anonymity required by approaching counselling staff. However, staff did maintain confidentiality as noted by several inmates gaining probation while in the PSE program. Attitudes among the prison staff of the pilot PSE varied from positive expectations at the women's prison to reservations among the staff of the men's prison before implementation. However, attitudes among staff at both prisons changed to viewing the programs as integral parts of the prison system on completion of the 2-year evaluation.

Spain

Five PSE operate in Spain with two pilot programs in Bilbao and Pamplona having undergone scientific evaluation. Evaluation reports indicated similar results to other European programs including no incidents of attacks with syringes on staff or inmates. Surveys of IDU inmates and non-IDU inmates indicated a decrease in negative expectations for PSE and perceptions of HIV or other viral infection risks. Spanish AIDS authorities have since developed guidelines emphasising the cooperative development of PSE in Spain with prison and health authorities as well as inmates. It also recommended implementation only in prisons with high IDU populations.

Other Countries

Searches of research literature and consultation with other international prison and HIV experts failed to find any other countries currently operating PSEs. Key

informants have noted that such programs are in the planning stage in Italy, Portugal and Greece. In addition, many research, policy and health organisations in developed countries, including Australia, Canada, the United Kingdom and the United States, have called for implementation in their various countries. Among these countries, Canada has extensively explored issues regarding implementation by research and policy experts. Several publications have noted demands from inmates and evaluation bodies for implementation of trial PSE in Canadian prisons.

The Feasibility of Syringe Exchange Programs in an Australia Prison

A study on the feasibility of PSE in New South Wales, Australia was conducted in 1995. Qualitative data from focus groups of stakeholders documented important issues for piloting a PSE. Key issues identified included: custodial and health staff resistance due to safety issues; conflicts between corrections policy and harm minimisation policy; identification of drug users by implementing a program; and operational/distribution issues. Recommendations included developing a drug treatment wing in a prison with specialised staff and maximised harm minimisation strategies. A two year evaluation using multi-method strategies included: quantitative and qualitative interviews of inmates and staff; testing prisoners for blood borne viral infections (BBVI) and drug use; and review of prison records for assaults and/or drug seizures was proposed.

Background

The World Health Organisation (World Health Organisation, 1993) responded to growing evidence of HIV infections in world prisons by calling for similar prevention measures within prisons as were found to be effective in the general community. Several other health or legislative authorities have supported the WHO recommendations (Needle Exchange Program Correctional Service Canada Working Group, 1999) including:

Council of Europe, Canadian Public Health Association, Canadian AIDS Society, Canadian Centre Substance Abuse, Health Canada, Prisoners with AIDS/HIV Support Action Network, Expert Committee on AIDS and Prisons, American Public Health Association and the American Medical Association

The WHO and UNAIDS have continued to support the need for innovation and pragmatic approaches to combating HIV and other viral infections both in the community and within prisons. The philosophical basis for such demands can be summarised from the UNAIDS statement:

Prisoners are the community. They come from the community, they return to it. Protection of prisoners is protection of our communities (Joint United Nations Programme on HIV/AIDS, 1996)

UNAIDS has drawn specific attention to the high turnover of prison populations around the world which can allow for further spread of infections contracted while incarcerated (Joint United Nations Programme on HIV/AIDS, 1997a; Joint United Nations Programme on HIV/AIDS, 1997b). Community based prevention efforts against HIV and other BBVIs among injecting drug users included methadone and other opioid substitution therapy, peer-based education, cleaning of injecting equipment, needle and syringe programs and, recently, medically supervised injecting rooms. However, a similar multifaceted and widespread approach has not been implemented in prisons worldwide.

HIV, Hepatitis and Injecting Drug Use

The World Health Organisation estimates that there were over 5 million new HIV infections in 1999 and 34.5 million people living with HIV/AIDS worldwide (Joint United Nations Programme on HIV/AIDS, 2000). Marked differences can be seen in the estimated prevalence and incidence for selected countries as listed below (Table 1). The rate of HIV and AIDS is relatively low within Australia compared to other developed countries most likely due to effective and collaborative prevention efforts within the community. HIV incidence peaked in 1984 in Australia and continues to decline (National Centre in HIV Epidemiology and Clinical Research, 2000).

Table 1: HIV prevalence and AIDS incidence in selected countries

Country	HIV prevalence		AIDS incidence	
	1999	Rate¹	1999	Rate¹
Australia	12,160	66	196	1.1
Germany ²	37,000	45	575	0.7
Spain ²	120,000	303	3462	8.7
United Kingdom ²	31,000	53	788	1.3
Canada	49,000	159	701	2.3
United States	850,000	308	46400	16.7

(data adapted from National Centre in HIV Epidemiology and Clinical Research, 2000)

¹ Rate per 100,000

² AIDS incidence not adjusted for reporting delay

Although sexual contact remains the dominant transmission risk for HIV across the world, some countries still report injecting drug use for a significant proportion of their AIDS cases (see Table 2).

Table 2: Proportion of AIDS cases due to IDU, 1999

Country	Total AIDS cases reported for IDU¹	Percent of all AIDS cases
Australia ²	584	7.2
Germany ³	2,768	14.9
Switzerland ³	2,673	39.4
Spain ³	37,077	65.6
United Kingdom ³	1,358	8.1
Canada ⁴	1,437	9.6
United States ⁵	231,011	31

¹ Also includes cases reporting other risk behaviours

² National Centre in HIV Epidemiology and Clinical Research (2000)

³ Joint United Nations Programme on HIV/AIDS (2000)

⁴ Health Canada (2000)

⁵ Centre for Disease Control (2000)

The early epidemics of HIV among IDUs in New York (Des Jarlias, Friedman, et al., 1989), Italy (Zaccarelli, Rezza, Girardi, et al., 1990) and Edinburgh (Robertson, Bucknall, Welsby, et al., 1986) received considerable attention. These epidemics have reached their peak and are now declining. Conversely, the WHO estimated a high prevalence of HIV in IDU populations in several countries such as India, Italy, Malaysia and Spain (Joint United Nations Programme on HIV/AIDS, 2000) subsequent to these early epidemics (see Table 3). HIV transmission among IDU populations is now largely preventable in developed countries. However, when HIV prevention programs have been limited or delayed, epidemics have occurred in some countries (Des Jarlias, 1994).

Table 3: Estimated HIV prevalence among IDU in selected countries

Country	Year	Medium	Minium	Maximum
Australia	1996	1.7%	1.7%	1.7%
India	1999	25%	1.3%	68%
Italy	1993	34%	7%	37%
Malaysia	1998	18%	15%	20%
Singapore	1994	0.2%	0.2%	0.2%
Spain	1996	31%	-	-
Switzerland	1997	1.4%	0	17%
Thailand	1997	33%	33%	33%
United Kingdom	1997	3.4%	-	-
Vietnam	1999	27%	14%	64%

(data adapted from Joint United Nations Programme on HIV/AIDS, 2000)

Comprehensive surveillance of HIV infection in Australia has enabled reasonable estimates of HIV incidence to be made. By December 1999, there had been approximately 8,000 AIDS cases and 18,000 HIV infections in a population of 19 million (National Centre in HIV Epidemiology and Clinical Research, 2000). Male-to-male sexual activity continues to be the primary mode of HIV transmission in Australia, accounting for approximately 80 percent of all HIV cases where an exposure category was recorded. Approximately eight percent of HIV diagnoses in Australia were among IDU of whom about half also reported male-to-male sex. Australian surveys have consistently reported an HIV prevalence of approximately two percent among IDU (Ross, Wodak, Gold, et al., 1992; Loxley, Carruthers & Bevan, 1995; MacDonald, Wodak, Ali, et al., 1997).

Hepatitis C prevalence is a much greater problem within the IDU population than HIV. The WHO estimated at the end of 1999 that the total worldwide prevalence of hepatitis C is approximately 170 million or three percent of the population (World Health Organisation, 1999). Hepatitis C continued to be the most frequently reported notifiable infection in Australia with more than 140,000 cases reported from 1990 to 1999 (National Centre in HIV Epidemiology and Clinical Research, 2000). Injecting drug use has been identified the predominant risk factor for hepatitis C infection. Approximately 50 percent of IDU attending needle and syringe exchange programs in Australia have tested hepatitis C antibody positive (National Centre in HIV Epidemiology and Clinical Research, 2000).

Prison Populations and Injecting Drug Use

Experts estimate that over eight million people are currently incarcerated worldwide with more than half of these in the United States, China and Russia (Walmsley, 1999). The average daily number of prisoners in Australia is 20,828 with an

imprisonment rate of 144 prisoners per 100,000 adult population during the June quarter of 2000 (Australian Bureau of Statistics, 2000). While the Australian statistics represent a rise in the number of incarcerated people, the rates are relatively low compared to the US rate of 645 per 100,000 adult population (Walmsley, 1999). The prevalence of infections such as hepatitis B and hepatitis C (Crofts, Stewart, Hearne, et al., 1995), sexually transmissible diseases (Cohen, Scribner, Clarke, et al., 1990) and psychiatric conditions (Harding & Zimmerman, 1989) are several times higher among prison entrants than general populations. Prisons can be stressful, crowded and violent places (Thompson, 1993). Drug withdrawal is common (Jeanmonod, Harding & Staub, 1991; Turnbull & Stimson, 1994). Imprisonment has been shown to reduce drug use (Shewan, Gemmell & Davies, 1994) but some inmates commence drug injection (Emslie, Taylor, Goldberg, et al., 1994) or homosexual sexual activity (Dolan, 1994) while incarcerated. These initiations into risk behaviour in prison have been attributed to boredom (Brown, P., personal communication, 1994) and the single-sex nature of prisons. Alcohol and drug problems affect more than half of those in many prison systems (Wright, 1993).

The prison environment provides certain key factors that elevate the risk of BBVIs. IDUs often represent a large proportion of prison populations internationally. In a national study in the United States of America, approximately 80 percent of 25,000 IDUs had been in prison (Normand, Vlahov & Moses, 1995). In a 12-city WHO study of HIV risk behaviour among IDUs (Ball, Des Jarlias, et al., 1995), between 60 and 90 percent of respondents reported a history of imprisonment since commencing drug injection and most had been imprisoned on multiple occasions. Also, multiple episodes of imprisonment were reported to be more common for IDU inmates than for other inmates in Scotland (Gore, Bird, Burns, et al., 1995). IDU prisoners in Gore's study were significantly more likely to have been in prison on six or more occasions than non-IDU prisoners ($X^2=24.35$, $p<0.0001$). An Australian survey of IDUs in 1994 reported that IDU with a history of imprisonment ranged between 23 percent in Melbourne and 54 percent in Sydney (Loxley, Carruthers & Bevan, 1995).

Among general prisoners, reports of injection before prison ranged from 11 percent in England (Maden, Swinton & Gunn, 1992) to over 30 percent in Australia (Butler, 1997) The percentage of inmates with a history of injection are reported in Table 4. The injecting behaviours of the IDU populations in prisons has been difficult to document due to fear of reprisal among inmates for admitting to illegal behaviours (Dolan, Wodak & Penny, 1995). However, these behaviours represent a major risk of BBVI. Research often relies on retrospective surveys of released IDU to identify indicators of injecting and sharing prisons. The only factors identified that predict syringe sharing in prison have come from a study conducted in Scotland (Shewan, Gemmell & Davies, 1994). Factors identified include the injection of a wide range of drugs in prison, the use of buprenorphine (which is obtained on the black market) and the discontinuation of methadone treatment upon prison entry.

Table 4: Inmates with a History of Injection Before Prison

Location	N	% of inmates who were IDUs	Reference
Australia			
NSW	158	46	Potter & Conolly 1990
NSW	408	51	Butler, Dolan, Ferson, et al. 1997
NSW	181	64	Dolan, Wodak & Hall 1998b
NSW	102	64	Dolan, Wodak & Hall 1999
Vic	3627	46	Crofts, Stewart, Hearne, et al. 1995
SA	373	36	Gaughwin, Douglas & Wodak 1991
SA	86	26	Seamark, no date
WA	201	28	Close 1989
Asia			
Japan	504	63	Nara, 1997
Europe			
Spain	624	57	Martin, 1990
United Kingdom			
England	755	11	Maden, Swinton & Gunn 1992
Scotland	404	16	Bird 1993
Scotland	132	46	Gore 1997
Scotland	559	28	Power 1992
Scotland	234	32	Shewan, Gemmell & Davies 1994
Scotland	234	49	Shewan 1994
Scotland-			
Edinburgh	378	18	Bird, Gore, Jolliffe, et al. 1992
Aberdeen	146	37	Bird, 1997
Lowmoss	298	53	Bird, 1997
Perth	284	41	Gore, Bird, Burns, et al. 1995
Cornton Vale	278	29	Gore 1997

Source: Dolan (2000)

In Australia the successful record of risk reduction by IDUs in the community have contrasted with fairly stable reports of high-risk behaviour in prison. Furthermore, prison appears to be a place where people start injecting- ten percent of IDUs in NSW prisons reported that they commenced injecting in prison (Dolan et al, 1999a). In a Victorian study, six of the 36 who reported injecting and sharing when last in prison also reported that was the first time they had ever shared syringes (Crofts, Stewart, Hearne, et al., 1995). Table 5 reports Australian studies of prison injecting and syringe sharing.

Table 5: Percent of IDUs who injected and shared in prison

Location	No.	Percent Injected	Percent Shared	Reference
National	2482	36	60	Wodak 1989
NSW	73	68	94	Potter 1989
NSW	209	74 ever	75	Wodak 1989
NSW	185	44 last time	70	Dolan 1998a
NSW	113	68 ever	77	Dolan 1999
NSW	65	66 last time	91	Dolan 1996
NSW	26	31 last time	88	MacDonald 1994
NSW	384	62 ever	89	Dolan, Wodak & Hall 1999
SA	50	52	60	Gaughwin, Douglas & Wodak 1991

(based on Crofts, Webb-Pulman & Dolan, 1996; updated in Dolan, 2000)

Two additional factors which contribute to the spread of BBVI among prisoners are the rate of partner change and mixing. Rate of partner change refers to the turnover of new partners where BBVI can be transmitted. The only study to investigate rates of partner change found that the mean number of partners IDUs shared syringes with in prison (5) was much higher than that for IDUs in the community (1) (Dolan, 1997). Mixing refers to the bringing together of disparate individuals. The only study to examine this aspect of transmission found that among IDUs who shared syringes in prison, 71 percent reported that their sharing partners were either from a different or unknown location compared to 31 percent of IDUs who reported sharing syringes in the community (Dolan et al., 1998). Multiple episodes of imprisonment are more common for IDU inmates than for other inmates. IDU inmates reported being imprisoned on a mean of approximately four occasions and non-IDU inmates reported being imprisoned on a mean of two occasions.

HIV and Hepatitis in Prisons

It might be expected that HIV and hepatitis infections will be higher in prisons than in the corresponding communities because of over representation of IDUs who have a higher prevalence of these infections than non-IDU inmates. HIV prevalence in correctional systems varies considerably within and between countries. In the United States of America, HIV prevalence in male inmates ranged from zero percent in North Dakota to 20 percent in New York City in 1988 (Hammett, Harold, Gross, et al., 1993). Certain groups have a higher prevalence of HIV in

prison. For example, in ten American correctional systems, the prevalence of HIV infection was higher among women (15%) than among men (8%) and among non-Caucasians (5%) than among Caucasians (3%) (Vlahov, Brewer, Castro, et al., 1991). A low prevalence of HIV infection (3.6%) has been found in Canadian prisons (Hankins et al., 1991). Smith, Truman, Lessner and colleagues (1991) estimated that there were 2,200 male and 200 female HIV positive prison entrants in New York State prisons in 1988, making HIV infection the most common medical problem among inmates. Little is known about HIV and hepatitis prevalence and incidence in prisons in developing countries.

The average prevalence of HIV in European prisons was ten percent as early as 1987 (Harding, 1987) but this average concealed a wide range of HIV prevalence across Europe. For instance, as early as 1988, half the prison population in Madrid was HIV positive (Estabanez, Coloma, Zunzunegui, et al., 1988) whereas only five percent of Scottish prisoners were positive in 1991 (Bird, Gore, Jolliffe, et al., 1992). The high prevalence among Spanish prisoners reflected the high prevalence of HIV among IDUs in Spain and their over-representation in the prison population. HIV infection among IDUs has been associated with a history of imprisonment in France (Richardson, Ancelle-Park & Papaevangelou, 1993) and Spain (Granados, Miranda & Martin, 1990). Almost half (48%) of those with a history of imprisonment in Spain on four or more occasions were HIV positive, compared with one fifth (21%) of those imprisoned less often (Granados, Miranda & Martin, 1990).

There were some early indications that extensive HIV transmission could occur in prisons. For example, HIV infection among IDUs in Bangkok rose from 2 to 27 percent in 1987 (Wright, et al., 1994) and to 43 percent by late 1988 (Choopanya, 1989) following an amnesty and release of a large number of prisoners. Six studies of HIV infection among IDUs in Thailand have since demonstrated that a history of imprisonment was significantly associated with HIV infection (Choopanya et al., 1996). In a study conducted by Brewer (Brewer et al., 1988), repeated testing of 393 prisoners in 1987 detected two prisoners who had seroconverted in a US prison. Stronger evidence of HIV transmission in prison emerged from an investigation into an outbreak of HIV in Glenochil Prison, Glasgow, Scotland (Taylor et al., 1995). This investigation was prompted by the detection of several cases of acute hepatitis B infection and two suspected cases of primary HIV infection in 1993. Based on evidence of duration and location of incarceration, six inmates had acquired HIV infection in Glenochil prison and two had either been infected in Glenochil or in another prison prior to transfer to Glenochil prison. Another six inmates may possibly have been infected in prison but these infections could have occurred outside prison because of the short period they had spent in prison before diagnosed with HIV. Further research provided conclusive evidence that 13 of the 14 inmates had a common strain of HIV and therefore became infected in prison (McMenamin, Pithie, Goldberg, et al., 1996).

Table 6: Prisoners Tested, New & Previous HIV Diagnoses, 1992

Location	No. of entrants	Percent Tested	No. of New Diagnoses	No. of Previous Diagnoses	HIV Prevalence (percent)
NSW	8,632	99.9	8	39	0.5
Queensland	5,353	100	7	4	0.2
Victoria	3,999	99.9	3	15	0.5
South Australia	5,939	30.1	0	14	0.6
West Australia	5,530	33.4	1	2	0.2
Northern Territory	1,803	65	1	0	0.1
Tasmania	1,222	48	0	0	0
ACT	242	N/A	0	1	N/A
Total	32,720	68	20	75	0.4

Source: McDonald et al., 1993.

Since 1991, Australia has conducted large scale compulsory HIV testing of inmates. The coverage and results of testing Australian prison entrants for HIV appear in Table 6. In 1992, there were over 32,000 prison entrants of whom approximately two thirds (68%) were tested for HIV infection. Only 95 cases (0.4%) of HIV infection were detected. Of these cases, 75 had been previously diagnosed and 20 were new diagnoses of HIV infection. Virtually all prison entrants in the three most populous Australian states (NSW, Queensland and Victoria) were tested for HIV in 1992. These data show that HIV infection was rare in the population from which inmates were drawn (predominately IDUs in the community).

Documentation of HIV transmission in an Australian prison has also been reported (Dolan & Wodak, 1999). A network of 13 prisoners was recruited in 1993 and 1994 following reports in another study of HIV transmission in prison. Self-reports of risk behaviour and medical records presented strong epidemiological support that four of the 13 were infected in prison. The high incidence within this small network suggested higher transmission rates might be likely. Mathematical modelling of HIV transmission in prisons also indicated possible high transmission of HIV (Dolan & Wodak, 1999).

Table 7: Hepatitis Transmission in Prison

Location	n	Incidence	Hepatitis Virus	Reference
New Mexico	122	0.8	B	Hull, Lyons, Mann et al., 1985
USA	2	2	B	Kelley, Redfield, Ward, et al., 1986
Maryland	266	1.1	C	Vlahov, Nelson, Quinn, et al., 1993
Virginia	759	0.2	D	Decker, Vaughn, Brodies, et al., 1984

Hepatitis infection, as with IDU in the community, has a high prevalence in prison. Four studies of hepatitis B, hepatitis C and hepatitis D transmission in prison have reported incidences ranging from approximately one to two percent (see Table 7). The low incidence of hepatitis D is because infection with this virus only occurs in individuals previously infected with hepatitis B virus or where both infections occur simultaneously (Decker, Vaughn, Brodies, et al., 1984).

A study of NSW prison entrants in Australia found 31 percent tested positive for hepatitis B and 37 percent for hepatitis C in 1994 (Butler, Dolan, Ferson, et al., 1997). Virtually all prison entrants in Victoria, Australia, were screened for hepatitis B, hepatitis C and HIV in 1992. A high incidence of hepatitis B (12%) and hepatitis C (18%), but not HIV (0%) was found among those who entered prison twice during the study year (Crofts, Stewart, Hearne, et al., 1995). While it could not be established whether infection occurred inside or outside prison, the study did show that recidivist prisoners have a very high incidence of hepatitis B and hepatitis C. Five cases of hepatitis C transmission have been documented in NSW (Haber, Parsons, Harper, et al., 1999; Post, Dolan, Whybin, et al., 2001).

HIV and Hepatitis Interventions in Prison

The importance of implementing HIV prevention programs in prisons was emphasised early in the HIV epidemic (Harding, 1987). Firstly, prisoners have the right to receive health care (including HIV prevention measures) equivalent to that available in the community according to the World Health Organisation (World Health Organisation, 1993). Secondly, correctional authorities have a recognised legal obligation to care for persons in their charge. According to the Eighth Amendment in the United States of America, prisoners are to be protected from cruel and unusual punishment. This has been interpreted to include the prevention of communicable diseases (Gostin, 1990). Consequently, the necessity to provide AIDS education to inmates has been recognised by US courts, as failure to disseminate this information can create distress amounting to cruel and unusual punishment. In contrast, US courts have rejected claims that compulsory screening and segregation are necessary to prevent HIV transmission in prison on the grounds of insufficient evidence (Gostin, 1990).

The harm reduction approach to the management of drug problems accepts that continuing drug use by some individuals is inevitable (Heather, Wodak, Nadelmann, et al., 1993). Furthermore, efforts that focus on reducing drug-related harms will be more effective than attempts to eliminate drug use because abstinence is rarely achievable in the short term (Ward, Mattick & Hall, 1992). The primary objective of many harm reduction programs over the last decade has been the prevention of HIV infection among IDUs who continue to inject. Natural history studies show that many IDUs ultimately abstain from heroin use, but for some this can take up to a decade (Stimson & Oppenheimer, 1982). Studies from the United States of America show that once heroin addiction is entrenched, very few IDUs become abstinent in the short term (Ward, Mattick & Hall, 1992). Furthermore, IDUs were often more likely to die from AIDS than from other complications of drug use in countries where even moderate prevalence of HIV infection had become established (Normand, Vlahov & Moses, 1995).

Table 8: Countries with HIV Programs for Prisoners

Condoms	Bleach	Methadone Maintenance	Syringe Exchange	Heroin Prescription
Australia	Australia	Australia	Switzerland	Switzerland
Austria	Belgium	Canada	Germany	
Belgium	Canada	Denmark	Spain	
Brazil	Denmark	Netherlands		
Canada	Finland	Germany		
Costa Rica	France	Spain		
Denmark	Germany	Switzerland		
Finland	Luxembourg	USA		
France	Mauritius			
Switzerland	Netherlands			
Germany	Norway			
Iceland	Scotland			
Luxembourg	Spain			
Netherlands	Switzerland			
Norway				
Spain				
Sweden				
USA				

Based on Harding & Schaller, 1992

Harding and Schaller (Harding & Schaller, 1992) surveyed 31 countries about HIV prevention measures implemented in their respective prisons. HIV prevention strategies, apart from education, were rarely found in prisons. Although countries are listed as having implemented a prevention program in prison, the extent of implementation may be anything from minimal to universal. Condoms, bleach and methadone maintenance were provided to inmates in 18, 14 and eight

countries, respectively (see Table 8). However, syringe exchange schemes for prisoners exist only in Switzerland, Germany and Spain (Stöver, 2000).

HIV Education

Information about HIV/AIDS is generally regarded as a prerequisite for effective HIV prevention programs, but there is little evidence to show that education is sufficient on its own. The involvement of target groups in formulating educational programs has been emphasised (Mann, Tarantola & Netter, 1992). HIV education of inmates occurred in all 31 countries surveyed by Harding & Schaller (Harding & Schaller, 1992) and in most US prisons (86%) and jail systems (58%) (Hammett, Harold, Gross, et al., 1993). Overall, US prison staff was more likely to be educated about HIV/AIDS than inmates. However, education of prison staff is necessary to minimise their resistance to prevention programs. Few US prison systems (20%) had evaluated their HIV education programs and none of these evaluations have been published (Hammett, Harold, Gross, et al., 1993).

HIV education in Australian prisons was co-ordinated at the national level even though prison systems are operated at the state level (Robinson, 1994). In HIV educational courses in NSW prisons, inmates were trained to provide information and bleach to other inmates (Taylor, 1994). These courses have managed to attract inmates who normally avoid educational courses. Participants became more tolerant of HIV positive inmates (Taylor, 1994). The baseline level of HIV knowledge among inmates was very high (Taylor, 1994).

Evaluation of hepatitis education is limited worldwide. Only one Australian study found that inmates' knowledge about risk behaviours for hepatitis C was poor. Only 20 percent named injecting drug use as a risk, but recidivists were better informed than those new to prison (Butler, Spencer, Cui, et al., 1999).

NSW Department of Corrective Services developed a comic book *Skin Deep* to address hepatitis C in prison. Issues include non-injecting routes of administration (NIROA), tattooing, self-harm and the importance of not becoming infected with another strain of the hepatitis C virus. An evaluation of the comic in the form of a quiz found 199 of the 200 responses received were correct (Dolan and Rouen, in press).

Condom Provision

Condoms have been demonstrated to be effective in the prevention of HIV (de Vincenzi, 1994) and gonococcal transmission (d'Oro, Parazzini, Naldi, et al., 1994). Good quality latex condoms are impermeable to HIV and breakage or slippage is uncommon (Heusser, Harthug & Myrmel, 1993). Many studies have shown that utilisation of condoms was strongly related to the attitudes of users (Mann, Tarantola & Netter, 1992). American surveys have found that approximately 20 to 30 percent of respondents in the general population report some use of condoms (Mann, Tarantola & Netter, 1992) while up to 70 percent of homosexual men report using condoms (Mann, Tarantola & Netter, 1992). IDUs have been slower to decrease their sexual risk behaviour than their injecting risk behaviour. The level of condom use by IDUs was similar to that of the general population. Condom

use among sex workers is generally reported to be very high, often at least 80 percent report consistent condom usage (Mann, Tarantola & Netter, 1992).

The proportion of homosexual men in Australia reporting unprotected anal sex in the six months before interview decreased from 90 percent in 1984 to approximately 50 percent in 1986 and to approximately 30 percent in 1990 (Feachem, 1995). There has been a slight increase, from 20 to 30 percent, in the proportion of young people (16 to 24 years) reporting using condoms in Australia (Feachem, 1995).

Inmates were provided condoms in eighteen of the thirty-one countries surveyed by Harding and Schaller (Harding & Schaller, 1992). Inmates in the remand prison in the Australian Capital Territory have been provided with condoms since 1994 (Vumbaca, G., personal communication, 1996).

A trial of condom provision was conducted in three NSW prisons in 1996 (Lowe, 1996). The trial was successful and statewide distribution has commenced along with another evaluation (Lowe, 1998). The evaluation reported on indicators of the successful operation of the program. These included: inmates thought the vending machines were accessible, low level of harassment of inmates using the machines, incidents of improper disposal were rare, the level of safe sex was high and there was no evidence of any unintended consequences as a result of condoms or dental dams being available.

Bleach Programs

Bleach programs have received support in situations where opposition to syringe exchange programs has been strongest (e.g. in the community in the United States of America and in prisons in most countries). Bleach programs were first introduced in 1986 in San Francisco to reduce HIV transmission among IDUs in the community (Normand, Vlahov, Moses, 1995). The proportion of IDUs reporting that they had cleaned syringes with bleach rose from 31 to 75 percent between 1986 and 1990. During that period, HIV prevalence among IDUs declined from 14 to 9 percent (Moss & Vranizan, 1992). In Australia, syringe cleaning has been associated with lower HIV prevalence among IDUs who reported sharing injection equipment (Ross, Wodak, Gold, et al., 1992). Conversely, a number of studies have found bleach programs to have no impact on HIV transmission among IDUs (Normand, Vlahov, Moses, 1995).

Before 1993, guidelines for syringe cleaning in Australia stipulated a method known as the '2x2x2' method. This method involved flushing injecting equipment twice with water, twice with bleach and twice with water. Research in 1993 raised doubts about the effectiveness of this method in the decontamination of used injecting equipment (Shapshank, McCoy, Rivers, et al., 1993). New cleaning guidelines recommended that injecting equipment should be soaked in fresh full strength bleach (5% sodium hypochlorite) for a minimum of 30 seconds (Shapshank, McCoy, Rivers, et al., 1993). More time is needed for decontamination if diluted concentrations of bleach are used. For example, injection equipment needs to be immersed in bleach for two hours in order to be disinfected when the

concentration of bleach is 10 percent of its full strength (Shapshank, McCoy, Rivers, et al., 1993).

The proportion of IDUs in the community who reported using bleach when cleaning shared syringes has increased in Australia (Crofts, Thompson, Wale, et al., 1996). However, most research reviewed here was conducted before the guidelines for syringe cleaning were made more stringent. Therefore, most reported cleaning was probably ineffective in the decontamination of used injecting equipment.

A number of studies have shown varying use of bleach by inmates (see Table 9). Two studies of the Bleach program in NSW prisons found that most inmates could obtain bleach and most were using it to cleaning injecting equipment (Dolan, Wodak & Hall, 1998b; Dolan, Wodak & Hall, 1999). However, there exists some uncertainty about the effectiveness of bleach to decontaminate hepatitis C infection from injecting equipment.

Table 9: Australian IDU Inmates Always Cleaning Syringes with Bleach

Location	Year	N	Percent	Reference
NSW	1988	47	30	Potter & Conolly (1990)
NSW	1989	116	25	Wodak (1989)
NSW	1993	35	85*	Dolan, Wodak & Hall (1999)
NSW	1994	31	85*	Dolan, Wodak & Hall (1998b)
NSW	1994	66	48	Loxley, Carruthers & Bevan (1995)
QLD	1993	27	35	Spooner, Bishop, Parr, et al. (1994)
Perth WA	1994	75	11	Loxley, Carruthers & Bevan (1995)
Melbourne Vic	1994	49	4	Loxley, Carruthers & Bevan (1995)
Adelaide SA	1994	82	33	Loxley, Carruthers & Bevan (1995)
National	1994	110	66	Wodak (1994)

* Prisoners were asked about the last syringe they shared.

Methadone Maintenance Treatment

Methadone maintenance treatment (MMT) is effective in reducing mortality (Caplehorn & Ross, 1995) heroin consumption (Gottheil, Sterling & Weinstein, 1993), criminality (Newman, Bashkow & Cates, 1973) and HIV transmission (Metzger, Woody, McLellan, et al., 1993; Novick, Joseph, Croxson, et al., 1990). MMT attracts and retains more heroin injectors than any other form of treatment (Ward, Mattick & Hall, 1992). Provision of MMT has rapidly expanded in a number of countries in response to the HIV epidemic. The effectiveness of methadone treatment is dependent on a number of factors including dose (Hubbard & French, 1991) and duration of treatment (Ball & Ross, 1991). An increase in

methadone places from 19,900 to 34,000 corresponded with 24,900 fewer drug arrests and 1,500 fewer cases of serum hepatitis in New York City in the early 1970s (Joseph, 1988). When methadone maintenance was introduced in Hong Kong in 1976, the annual number of addicts admitted to prison decreased from approximately 2,200 to 200 by 1980 (Joseph, 1988).

Only two prison based methadone programs have been documented worldwide. One program operates at Rikers Island Jail in New York City (Magura, Rosenblum, Lewis, et al., 1993). The other program operates in most prisons in New South Wales (Hall, Ward & Mattick, 1993). Methadone provision began in Rikers Island Jail in 1986 (Magura, Rosenblum, Lewis, et al., 1993). Approximately one fifth of the 80,000 prison entrants were detoxified from heroin with methadone in the first year. But the rapid detoxification program failed to break the criminal cycle as most inmates soon resumed drug use and criminal activities upon release and were re-incarcerated. In 1987, the methadone program expanded to provide inmates with stable, albeit sub-therapeutic (less than 40 milligram) doses of methadone for the duration of incarceration (which was less than one year). Referral to community methadone programs was arranged for inmate clients after release. Fears of correctional staff were allayed when diversion of methadone and conflicts between inmates did not eventuate. On the contrary, inmates on methadone were less irritable and easier to manage. In addition, virtually all (95%) prisoners who were offered a place, joined the Rikers Island Jail methadone program.

Research into the Rikers Island Jail methadone program has focused on whether clients present for treatment at community methadone clinics after release. There is no evidence whether or not the Rikers Island Jail methadone program has had any impact on injecting in prison. However, injecting drug use is reported to be rare in Rikers Island Jail (S. Magura, personal communication, 31 Jan 1995).

Over a decade ago, Australia's National Methadone Guidelines listed conditions for which methadone treatment might be appropriate for prisoners (Drug Offensive, 1988). These were: (1) withdrawal; (2) continuation of treatment for those on methadone prior to imprisonment; (3) commencement of treatment for those who are heroin dependent on prison entry or who have used heroin in prison in a harmful way including those who are HIV positive; and (4) the reduction of intravenous opioid use upon release. In addition, the Guidelines stipulate that medical staff prescribing methadone in prison should be independent of the Department of Corrective Services to minimise potential conflicts of interest.

The NSW prison methadone program began in 1986. Currently there are almost 1,000 inmate clients. There is some evidence that MMT reduces the frequency of injecting among inmates in NSW. In one study, IDUs in MMT in prison reported significantly fewer injections per week than IDUs not in MMT but only when methadone doses exceeded 60 mgs and was provided for the entire duration of imprisonment (Dolan & Wodak, 1996). A randomised-controlled trial of the New South Wales prison methadone program has just been completed. In that study, preliminary analysis indicated that methadone treatment significantly reduced the injection of heroin (Dolan, Wodak, Mattick, et al., 1999).

Prisoners in South Australia, Queensland and Tasmania are allowed to continue methadone treatment when they enter prison. A small numbers of prisoners in Victoria receive methadone treatment if they are serving short sentences.

Other Opioid Maintenance Treatments

In addition to standard methadone maintenance treatment Switzerland has begun trials of other maintenance treatments including heroin and injectable methadone (Nelles, Hirsbrunner, Fuhrer, et al., 2000). Prisoners in Oberschöngrün prison were enrolled in September 1995 in a heroin maintenance trial that coincided with a community trial. Initial reports suggested this was feasible as a treatment for heroin dependence however it did cause a tension due to approved consumption of illegal drugs under prison care. Further evaluation is pending. Reports on injectable methadone trials have not been reported.

The Australian Capital Territory, in its examination of prison implementation options, established the Sub-Committee on Syringe Exchange and Drug Use for People in Detention in the ACT (ACT Department of Health and Community Care Consultancy Brief, 2000). While the Sub-Committee stresses that demand reduction is the preferred strategy against drug use in a prison setting, they also accept that there is a need for harm reduction strategies for those prisoners who will continue to inject drugs. In this review, we will discuss the implementation of PSE in Europe and the evidence for the effectiveness of the programs. We will also summarise the common rationale for implementation of the PSE and practical operational guidelines. Finally we will discuss the apparent barriers where PSE have been debated but not introduced and other harm reduction strategies that are in operation in their stead.

Methods

Journal publications and conference presentations on prison based syringe exchange programs were identified by a comprehensive search of electronic databases such as Medline, Psychlit, Medscape, Current Contents, CINCH, ISI Citation databases, SSI, EMBASE, HealthSTAR, CAB Abstracts and CINAHL. In addition to these publications, experts involved with development and evaluation of current programs or policy were contacted for official reports, policy documents or unpublished materials. All documents were reviewed to identify developmental issues, practical guidelines and results of evaluations.

Key officials involved with development, implementation and evaluation of existing PSE in Switzerland, Germany and Spain were contacted. Individuals from the health and prison authorities as well as evaluation experts were identified. Each individual was contacted and requested to answer several questions regarding the development, operation and evaluation of the PSE. These key experts were provided the opportunity to answer the questions via email or through a telephone

interview. Information collected from these interviews has been added as supplemental data to the reported literature.

In addition to the above information, qualitative data from a 1995 study of stakeholder issues affecting the implementation of PSE in Australia were reviewed (Rutter, Dolan, Wodak, et al, 1995). Eight discussion groups and two interviews included 73 representatives from the Corrections Health Service (9), prison officers (40), former prisoners (6), state parliamentarians (4), non-government AIDS service organisations (4) and research experts (10) were conducted over a 6 month period. Discussion group transcripts from the study of these stakeholders associated with the prison system in New South Wales have been examined for potential barriers and suggested procedures for implementation. Issues from the discussion groups have been compared with existing programs to identify important points for consideration of the review.

Results

Current Prison Syringe Exchange Programs

Switzerland was the first country to start syringe exchange in prisons 1992. Germany and Spain have also implemented similar programs. As of December 2000, there are currently 19 PSE operating within Europe (see Table 10). PSE have been implemented in both male and female prisons. The majority of prisons have been small with an average population of less than 250 sentenced prisoners. Distribution has been through automatic dispensers or by medical or counselling staff. While the majority of PSE have not excluded any prisoners, one program in Switzerland excludes non drug using inmates and two German PSEs exclude non drug users and methadone patients. Details of the development and operation in each of these three countries are reviewed separately below with noted comments from key informants.

Switzerland

In 1991, prison staff highlighted the high prevalence of drug use, injecting and high-risk behaviours for HIV and hepatitis transmission in prison and initial proposals were made for implementing PSE (Nelles & Harding, 1995). While the legal and practical nature of such a program was being examined, a doctor in a men's prison in Oberschöngrün started distributing syringes in 1992 unofficially to prisoners who he had determined were injecting drugs (Nelles & Harding, 1995). The director of this prison accepted the doctor's arguments when his program was detected and sanctioned the operation. In 1994, the first scientific pilot of a PSE began in a women's prison in Hindelbank. This operation was evaluated over a 12-month period and follow-up data was collected 12 months after completion of the pilot. Following the successful completion of the pilot program in Hindelbank and the continued operation in Oberschöngrün, the Swiss Federal Ministry for Justice issued an official statement in 1997 which confirmed the "legality and necessity" of distributing syringes within Swiss prisons (Paget et al., 1998). The Canton of

Berne was the first canton to require all prisons to distribute syringes in 1998. However, key informants indicated that passive resistance has hindered operation in subsequent larger prisons. Four additional programs have been implemented. Syringes were made available upon request from the doctor in a Geneva prison in 1996 (Stöver, 2000) and a pilot program was started at Realta men's prison in 1997 (Nelles, Fuhrer & Vincenz, 1999). Details on the remaining prisons were unavailable.

There are two main operational protocols used in the Swiss PSE. Oberschöngrün and Geneva prisons distribute syringes through the prison doctor (Nelles & Harding, 1995). Syringes are distributed to prisoners upon request and exchanged for new syringes when needed. The doctor in Oberschöngrün distributes approximately 700 syringes per year to approximately 15 IDUs (Nelles, Dobler-Mikola & Kaufmann, 1997; Nelles et al., 1997). No data on syringe distribution has been reported for the Geneva prison. The prison at Hindelbank and Realta used automatic distribution machines placed in discreet areas of the prison for anonymity. In Hindelbank prison six distribution machines were placed at various locations accessible to the inmates (Nelles, Fuhrer, Hirsbrunner, et al., 1998).

Table 10: Syringe Exchange Programs in European Prisons

Country	Prison	Average Size	Character	Sentenced	Syringe Exchange Since	Provision of Sterile Syringes through	Exclusion	Other Preventive Measures
Switzerland	Men's Oberschöngrün	75	Half open	Adults	1992	Doctor/medical department	Non-Drug User	Education Methadone Counselling
Switzerland	Women's Hindelbank	110	Half open	Adults	1994	Machines (1:1 exchange)	None	Education Methadone Counselling
Switzerland	Men/Women's prison Champ Dollon	No details	Remand prison	No details	1996	Doctor	None	No details
Switzerland	Men's Realta/Cazis	100	Half open	Adults	1997	Machines (1:1 exchange)	None	Education Methadone Counselling
Germany	Women's prison Vechta	169	Closed & remand	Adults/ Juveniles	1996	Machines (1:1 exchange)	Women in methadone program, reception, Non-DU	Education Methadone AIDS support User groups Counselling
Germany	Men's Lingen	228	Closed	Adults	1996	Drug counselling service	Men in methadone program, Non-DU	Education Methadone AIDS support User groups Counselling
Germany	Men's Vierlande	298	Open	Adults	1996	Machines (1:1 exchange)	None	No details
Germany	Women's Lichtenberg, Berlin	Ca. 40-50	Closed	Adults/ juveniles	1998	Machines (1:1 exchange)	None	No details

Germany	Men's Lehrter Str., Berlin	Ca. 100	Closed	Adults/ Juveniles	1998	Machines (1:1 exchange)	None	No details
Germany	Men's, Fuhlsbuttel	600	Closed	Adults	2000	Hand-to-hand	No details	No details
Spain	Men's Basauri, Bilbao	250	No Details	Adults	1997	AIDS Injecting kits by external staff	No Details	Education Bleach, Condoms Detox programs Counselling Methadone
Spain	Pamplona prison, Pamplona	150	No Details	Adults	1998	AIDS Injecting kits by external staff	No Details	No Details

Updated from Stöver, 2000

All prisoners were offered dummy syringes at the start of the program and new prisoners were offered dummy syringes on prison entry. Distribution machines provided a sterile needle and syringe for a used one. A total of 5,335 syringes were distributed in the first year. A single machine is used in Realta prison, which distributed 1,389 syringes over a 19-month period (Nelles, Fuhrer & Vincenz, 1999).

Evaluations were conducted in Hindelbank (Nelles, Dobler-Mikola & Kaufmann, 1997; Nelles, Fuhrer, Hercek, et al., 1997) and in Realta (Nelles, Fuhrer & Vincenz, 1999) prisons. The evaluation methods consisted of semi-structured interviews, voluntary blood tests and review of medical and prison records. Interviews were conducted in Hindelbank at the start of the program, 3 months, 6 months, 12 months and one year following the conclusion of the pilot. Results of the evaluations indicated stable patterns of drug use through the first three interviews and decreasing frequency of drug use in the final and follow-up interview. Syringe sharing ceased after implementation of the PSE in Hindelbank and significantly dropped to only a couple prisoners in Realta. Blood tests and medical reports in Hindelbank indicated that no new HIV, hepatitis B or hepatitis C infections and decreased reports of abscesses occurred during the pilot and follow-up. Self-report data was only available for Realta, which also indicated no new blood borne viral infections (BBVI). There were also no reported incidents of syringes being used as weapons in either prison. One incident was reported in Realta of a prisoner injured by a discarded syringe. Prisoner knowledge of HIV and hepatitis risks/transmission was good but serious errors in judgement were reported. There was high knowledge of HIV risks for transmission but little knowledge of hepatitis C.

Response rates for staff surveys were not as high as inmate surveys in the Hindelbank pilot (Nelles et al., 1997) but better at Realta (Nelles, Fuhrer & Vincenz, 1999). However, final response was 86 out of 111 staff that completed questionnaires at some point during the pilot. Results of staff evaluations indicated a high level of acceptance for the programs. Among the small proportion of staff who had reservations, there appeared to be a correlation between their perceptions of prison strategies and their overall attitude to drug strategies/harm reduction in the community. Both evaluations noted the need for education and consultation with prison staff to address any expressed concerns.

Although no scientific evaluation had been conducted in Oberschöngrün prison, the doctor had reported some observations regarding the PSE (Nelles et al., 1997a). During the first three years of operation there had been no incidents of syringes used as weapons. There were no increases in overdoses, deaths or drug use. Syringe sharing stopped and there were no abscesses after initiating the PSE.

Conclusions from all the reports and evaluations indicated that PSE were feasible and successful at preventing HIV, hepatitis B and hepatitis C transmission. Authors emphasised the need for collaborative effort in design and development between all groups affected by the programs. They also emphasised the need for integrating PSE within a wide range of education and harm reduction activities much as it is in the community. There was one limitation noted in the literature. The PSE

operating within Switzerland operate in small prisons with populations averaging 100 inmates. Authors suggested evaluating pilot programs in larger prisons.

Germany

The first documented consideration of PSE in Germany occurred in 1994 through efforts of the Ministry of Justice and demands by prison officials from a women's prison in Vechta who noted high prevalence of drug use and viral infections (Jacob & Stöver, 1997). Approval was received for the programs in 1996 and pilot projects started at the Vechta prison and a men's prison in Lingen which had a high proportion of drug users and drug offenders. Development of the German programs was collaborative and utilised all levels of prison staff including directors, prison officers, health staff, social workers and inmates in the planning stages (Stöver, 1997). The overall goals of the pilots were to assess the feasibility, degree of acceptance, effectiveness and changes in attitudes. The evaluation was a multi-method longitudinal design to be completed over a two-year period.

Each prison chose different designs for their programs (Stöver, 1997). The women's prison installed five automatic dispensers in accessible but anonymous areas of the prison. The men's prison distributed syringes through counselling staff at a "contact café". Prisoners could enter the PSE program by declaring themselves to the prison doctor or counselling staff. Women were given a dummy syringe and exchanged used syringes via the machine for sterile ones. Men exchanged syringes via the counsellors. Inmates enrolled in the methadone program were excluded from the PSE program. Regulations were altered to allow possession of a syringe in a specified area and container in both prisons.

The intermediate results of the evaluation concentrated on the perceptions and attitudes of staff and inmates associated with the programs (Jacob and Stöver, 1997). There was initially a high level of acceptance among staff due to the prisons initiating demands for a PSE and the collaborative nature of the planning. However, there was some variance between the two prisons. Staff at the men's prisons was more reserved about their expectations for the success of the programs. However, in both prisons there was more concern about handling needles found in a cell than the possibility of the needles being used as a weapon. Acceptance by inmates was high but interviews highlighted a perception by non-drug users that IDU received special privileges. Prisoners emphasised that after implementation of the PSE that syringes still remained a commodity for trade in the prison. It was suggested that this was due to exclusion of prisoners on the methadone program who continued to inject. However, they also noted that there was a reduction in stress and improved relationships with officers due to the program. Also within the men's prison there was a reluctance to access the program due to the lack of anonymity and a fear that counsellors' knowledge of participants drug consumption could affect parole. Results of the intermediate evaluation suggested this was not the case.

The final results of the evaluation indicated the feasibility of implementing PSE in Germany (Jacob & Stöver, 2000a; Jacob & Stöver, 2000b). There were no reported attacks on staff during the two-year period and only a few incidents involving incorrect storage of the syringes and possession by methadone clients were

reported. The program was well integrated into the health system in the prisons and referrals to drug treatment programs actually increased during the pilot period. The program was also well integrated into the social structure of the prison and there were no increases in cell searches as result of the PSE. Noted problems with the program included technical failures of the machines and concerns over anonymity as the distribution was by counsellors. Acceptance by both staff and inmates was more reserved in the men's prison. Inmates were concerned with anonymity and staff had low expectations. However, counselling staff worked to address inmate concerns and acceptance among officers improved by completion of the pilot. The number of inmates sharing syringes dropped from 54 to 4 during the trial and overdoses dropped to only one. There was no increase in drug consumption. There was also a noted improvement in health and decrease in the number of abscesses reported. No seroconversions for HIV, hepatitis B or hepatitis C were documented. The success of the pilots resulted in four additional PSE programs being implemented in Hamburg (2) and Berlin (2) and the pilot programs have continued their operation (Stöver, 2000).

The German pilot PSE programs were implemented in prisons slightly larger than the Swiss program but still with average inmate numbers below 300 (Stöver, 2000). This limits generalisation to larger prisons. The largest prison to implement a PSE in Germany was in Hamburg with a population of approximately 600. No details have been reported for this prison (Stöver, 2000).

Spain

Currently five PSE programs exist within Spain. The Spanish prison authority, Direccion General De Instituciones Penitenciarias, is responsible for development and coordination of the programs. Each program was implemented in collaboration with the regional health authorities. Kits containing a syringe, alcohol swabs and water are supplied and distributed by local non-government AIDS organisations. The first two programs developed have received positive evaluations and initial reports from two additional programs have also been encouraging (Dr. Angela Bolea, personal communication, 2000). Evaluation of the PSE in Basauri prison in Bilbao, the first PSE to be established in 1997, indicated no negative incidents after a distribution of more than 16,500 syringe kits. There has been no increase in drug use; risks of blood borne viral infections decreased; and the programs facilitated greater prisoner contact with drug treatment programs over the three-year period. In addition to the beneficial health effects, there were no reports of syringes being used as weapons and guards reported no conflicts with the programs (Menoyo, Zulaica, Parras, et al., 1999). A second PSE was established in 1998 in Pamplona due to collaborative efforts between health and correctional departments of the regional government.

Evaluation reports from the Basauri prison indicated the feasibility of PSE within the Spanish prisons (Grupo De Trabajo Sobre Programas De Intercambio de Jeringuillas en Prisiones, 1999a). The Basauri Penitentiary Centre is a male prison with a high turnover of inmates. Half of the inmates report using illicit drugs and 75 percent of these reported injecting. This pilot program distributed needles and syringes to inmates through a health service team. Both inmates and staff were

interviewed during a two-year period to assess attitudes and behaviours during the pilots. Inmates utilising the PSE and non-IDU were also interviewed for comparison. Results of inmate surveys indicated a significant decrease in perceptions of problems associated with PSE and risks of HIV or other viral infections. However, there were continued reports of re-using syringes (16% of IDU at Time 0 and 13% at Time 2) although this was a significant drop. Similar results were reported for the Pamplona prison although staff had more fears for safety (Grupo De Trabajo Sobre Programas De Intercambio de Jeringuillas en Prisiones, 1999b). Although the staff members surveyed reported fear for safety they also reported overwhelming support and necessity for the PSE program.

The Spanish authorities developed guidelines for the implementation of PSE in Spain due to the positive results of evaluations and plans for further expansion into other prisons (Grupo De Trabajo Sobre Programas De Intercambio de Jeringuillas en Prisiones, 2000). The only prerequisite for the programs was the presence of significant numbers of IDU in the prisons. The specific criteria of the programs required assessment of the individual institutions needs. However, they also emphasise anonymity. None of the Spanish PSE utilised automatic dispenser to distribute syringes however guidelines note that the anonymity of this method should be assessed compared to exchange via personal contact. Personal contact with current Spanish PSE allowed for further education and motivation of IDUs to use drug treatment services. As with other European programs, the Spanish programs emphasised identified storage areas for syringes. They also encouraged identification of PSE syringes to allow for separating contraband syringes. Evaluation was to be the responsibility of an independent evaluation team using survey methods of inmates and staff.

Effectiveness of Prison Syringe Exchange Programs

A total of six PSE programs in Switzerland (2), Germany (2) and Spain (2) have received scientific evaluation (see Tables 11a-11f). Electronic databases and requests for reports from key experts in each country were used to identify publications or reports from the three countries. The majority of evaluations followed the programs for two years. Research staff, independent to the prison system or health authorities, conducted the evaluations. Evaluations consisted of multiple methodologies including: pre and post implementation surveys of inmates and staff; in depth qualitative interviews; review of correctional records; review of medical records; and monitoring the distribution of needles and syringes. Reports of no assaults, no increased searches by prison guards and no HIV or hepatitis C infections were consistent across each of the three evaluations. Reports also noted no increase in drug use within the 6 prisons. However, drug use and BBVIs were monitored by self-report in some prisons, which is limited in its reliability. Overall results of pilot and follow-up evaluations in the three countries have been favourable and resulted in expansion beyond the initial pilot programs.

Table 11a: Evaluation Results of Swiss Prison Syringe Exchange

Country	Switzerland
Prison	Women's Hindelbank
Size	110
% Drug injectors	39
Sample size	137
Years studied	2
Number of syringes distributed	5,335 (1) 650 (2)
% of syringes returned	100
Evaluation methods	Surveys of inmates and staff, syringe distribution data, medical records and prison records
Limitations	Low participation rate by staff in surveys, drug use monitored by self report
Summary Results	Acceptance by staff and inmates, No increase in drug use, No initiation to drug use, Reduction in sharing, No increased sanctions, No attacks or inmate violations, No increase in ODs, No seroconversion for HIV or hepatitis, decrease in abscesses, lack of inmate knowledge of hepatitis

Table 11b: Evaluation Results of German Prison Syringe Exchange

Country	Germany
Prison	Women's prison Vechta
Size	170
% Drug injectors	50
Sample size	169
Years studied	2
Number of syringes distributed	16,390
% of syringes returned	98.9
Evaluation methods	Surveys of inmates and staff, syringe distribution Medical Records and Prison Records
Limitations	Drug use monitored by self report, no pre and post test HIV or hepatitis testing
Summary Results	Acceptance by staff and inmates, no attacks or inmate violations, no effect on inmates seeking drug treatment, reduction in sharing syringes, reduced overdose, decrease in abscesses and no seroconversions

Table 11c: Evaluation Results of German Prison Syringe Exchange

Country	Germany
Prison	Men's prison Lingen
Size	230
% Drug injectors	50
Sample size	83
Years studied	2
Number of syringes distributed	4,517
% of syringes returned	98.3
Evaluation methods	Surveys of inmates and staff, syringe distribution Medical Records and Prison Records
Limitations	Drug use monitored by self report. No pre- and post test HIV or hepatitis testing
Summary Results	Reluctance by inmates due to staff distribution high acceptance by staff, no attacks or inmate violations, no effect on inmates seeking drug treatment, reduction in sharing syringes, reduced overdose and no seroconversions

Table 11d: Evaluation Results of Swiss Prison Syringe Exchange

Country	Switzerland
Prison	Men's prison Realta/Cazis
Size	100
% Drug injectors	42
Sample size	234
Years studied	1
Number of syringes distributed	1,389
% of syringes returned	
Evaluation methods	Surveys of inmates and staff
Limitations	Surveys after program began, drug use monitored by self report and infections monitored by self report.
Summary Results	No increase in drug use, no increase in injecting, reduction in syringe sharing, acceptance by staff and inmates

Table 11e: Evaluation Results of Spanish Prison Syringe Exchange

Country	Spain
Prison	Men's prison Basauri, Bilbao
Size	250
% Drug injectors	50
Sample size	607
Years studied	1
Number of syringes distributed	12,500 (3)
% of syringes returned	82
Evaluation methods	Surveys of inmates and staff, syringe distribution
Limitations	Drug use monitored by self report. Health effects by medical staff report
Summary Results	Acceptance by inmates and staff, no increase in drug use, no attacks or inmate violations, reduction in sharing syringes no seroconversions

Table 11f: Evaluation Results of Spanish Prison Syringe Exchange

Country	Spain
Prison	Pamplona prison
Size	150
% Drug injectors	64
Sample size	115
Years studied	1
Number of syringes distributed	
% of syringes returned	
Evaluation methods	Surveys of inmates and staff, syringe distribution
Limitations	Information based on self report.
Summary Results	Conditional acceptance by inmates and staff, lack of program knowledge among staff, reduction in syringe sharing

Principles of Syringe Exchange Program Implementation

Review of the literature on the 15 PSE programs in Europe has highlighted certain common characteristics. However experience in countries which have implemented PSE or explored its possible implementation have noted the necessity for examining the legislative and regulatory background to distributing needles and syringes in a correctional setting. UNAIDS has recently advised legislative authorities on the issues to consider when exploring harm reduction and prevention strategies in prisons (Joint United Nations Programme on HIV/AIDS, 1999). UNAIDS emphasised consultation with inmates, prison staff and their unions as an essential requirement to progressive programs. Three of the recommended considerations for legislative conditions include:

1. Does the legislation provide for access equal to the outside community to the following HIV-related prevention and care services in prisons or correctional facilities:
 - a. Information and education;
 - b. Voluntary testing and counselling;
 - c. Means of prevention, i.e. condoms bleach and clean injecting equipment;
 - d. Treatment, e.g. post-exposure prophylaxis;
 - e. Participation in clinical trials (if available)?
2. Does legislation provide for protection of prisoners from involuntary acts that may transmit virus, i.e. rape, sexual violence or coercion?
3. Does the legislation provide for confidentiality of prisoners medical and/or personal information, including HIV status?

In 1998, the European Network of Drug and HIV/AIDS Services in Prison gathered over 100 prison officials to recommend guidelines for PSE operation (Jacob & Stöver, 1998). While the recommended guidelines included a broad spectrum of approaches to deal with drug use and harm reduction, the following guidelines were suggested for PSE based on the European operations:

1. Prisons have the responsibility to provide prisoners with access to adequate infection preventing and health promoting measures.

2. Syringe exchange is a sensitive area for Prison Services in many European countries. It is necessary to carry out a survey in prisons that are considering the introduction of syringe exchange to find out how much injecting drug use exists within the prison prior to implementation.
3. Syringe exchange programs can be useful and integral parts of a general approach to drug and health services in prisons. They should be provided as part of a range of services that includes health promotion measures, counselling, drug-free treatment and substitution treatment.
4. To protect all parties participating in infection prevention and health promoting measures (such as syringe exchange), legal ramifications must be clarified in advance to introduction of the measures. Legal issues need to be clarified especially concerning special groups, such as juveniles and inmates in substitution treatment. Clarification of these issues is the responsibility of the government department involved. The results of this clarification should be published.
5. The choice of distribution, either through machines or through personal contact, depends on the specific conditions within the respective prison settings. Continuity of availability of sterile syringes should be guaranteed whether distributed by prison or community staff.
6. The successful implementation of syringe exchange programs in prison requires the establishment and the maintenance of acceptance among prison staff and inmates, among political and legal authorities, professionals and the public at large.
7. Participation in syringe exchange programs should be strictly confidential so that the participant need not fear negative consequences during his or her remaining sentence.
8. The distribution facilities should be located in easily accessible areas.
9. Effective infection prevention can only be achieved if counselling and information supplement measures of instrumental prevention. Mandatory education and voluntary training for inmates and prison staff at all participating levels should also be provided. The following issues are of particular relevance:
 - Basic knowledge about drug consumption and infection risks,
 - Means of transmission and infection prevention,
 - Safer use and safer sex,
 - Drug related first aid.

Similar recommendations have been documented by Spanish authorities for implementation of PSE programs in that country (Grupo De Trabajo Sobre Programas De Intercambio de Jeringuillas en Prisiones, 2000). While few other countries have been as pragmatic in their approach to harm minimisation in prisons, some discussion and research papers have explored these issues as well. Policy issues and exploratory research regarding PSE for other countries are discussed in detail below.

Debate on Prison Syringe Exchange Programs in Other Countries

Although Switzerland, Germany and Spain are the only countries to implement PSE, other countries have explored the issue. The limited number of countries offering PSE internationally indicates the reluctance of political and prison authorities to implement this strategy. However, it has not been uncommon for research experts on prisons, HIV and injecting drug use to recommend or discuss introduction of PSE in their respective countries (Crofts, 1997; Hughes, 2000; Jurgens, 2000; Mahon, 1996).

Canadian authorities have provided extensive policy analysis of the issue. The potential risks of HIV and other viral infections in Canadian prisons was highlighted in 1996 when two HIV and HCV antibody positive inmates notified prison authorities of sharing injecting equipment with other inmates (Correctional Service of Canada, 1999a). Recommendation from the resulting project supported implementation of PSE. A further national evaluation of prison harm reduction methods in Canada found that bleach distribution was inadequate on its own but also suggested examination of legal and other factors before considering PSE (Correctional Service of Canada, 1999b). However, surveys of inmates in the evaluation continued to support the implementation of PSE. In addition to this a national working party recommended examining the feasibility of PSE as a priority issue (Needle Exchange Program Correctional Service Canada Working Group, 1999). Overall, the literature has indicated a growing demand for the implementation of PSE in Canada.

The Feasibility of Prison Syringe Exchange Programs in Australia

Perhaps the most pressing argument in support of implementing PSE in Australia has been the increasing evidence of HIV and hepatitis transmission within prisons. The first case of HIV transmission in an Australian prison was documented in 1994 (Wodak & Dolan, 1994). Further investigation of the case indicated a network of high risk behaviours in the prison system and a high probability of multiple HIV transmission (Dolan & Wodak, 1999). Five cases of hepatitis C infections among prison populations have been recorded (Haber, Parsons, Harper, et al., 1999; Post, Dolan, Whybin, et al., 2001).

Primary arguments against implementation of PSE in Australia have centred on the use of syringes as a weapon. In 1991, a prison warder in NSW was stabbed with a blood filled syringe by a prisoner known to be HIV positive. The officer

subsequently became infected with HIV, developed AIDS and died. The New South Wales Department of Corrective services responded to the attack with strict control measures that resulted in prison riots (Egger & Heilpern, 1991). The Prisons (Syringe Prohibition) Amendment Act of 1991 was also passed. This Act forbids the introduction of syringes into NSW prisons with a maximum penalty of 2 years imprisonment. However, the Act also allows for the distribution of syringes "if the governor of the prison has consented to the persons introducing the syringe into the prison (s37A(2))" (Godwin, Hanler, Patterson, et al., 1993). Other prison officials have identified suspected syringe attacks against inmates as a danger after a prisoner seroconverted for HIV antibody (Liew, 1994). The NSW Department of Corrective Services (DCS) and the Prison Officers Union responded to calls for syringe exchange programs by public officials and the media with strong opposition based on union policy and the above mentioned Act against distribution of syringes. They claim the distribution of syringes represented a threat to officer safety (Houweling & Wilkins, 1994). Another argument documented by prison officials in New South Wales was the lack of clear evidence for PSE in light of other successful measures (Eyland, 1996). The barriers to PSE within Australia and more specifically NSW and ACT, stem from the legislative regulation of prisons and the nature of stakeholder issues.

Stakeholder issues

An exploratory study of issues surrounding the implementation of PSE in New South Wales was conducted over a six-month period in 1995 (Rutter, Dolan, Wodak, et al., 1995; Dolan, Rutter, Wodak, et al., 1996). Qualitative data was collected through eight discussion groups consisting of various stakeholders associated with the prison system. Seventy-three stakeholder representatives from the Corrections Health Service (9), prison officers (40), former prisoners (6), state parliamentarians (4), non-government AIDS service organisations (4) and research experts (10) participated in the study. Due to the controversial nature of the study prison officers refused to participate in a small group discussion. However, research staff was allowed to lead a discussion on the topic at a meeting of union representatives from across New South Wales. Data from the study identified issues that would have the greatest impact on PSE feasibility in New South Wales. These issues are discussed below.

Transcripts from the study's discussion groups were analysed to identify problems in the correctional context associated with syringe use, effectiveness of and problems associated with existing BBVI prevention measures and possible benefits/costs of establishing and evaluating a pilot syringe exchange program in prisons. Groups comprising prison officers, prison medical staff and ex-inmates provided information on likely safety issues associated with a PSE, emphasising the necessity for effective, broad-range treatment and harm minimisation programs in prisons for injecting drug users. Groups, including prison staff, questioned the implementation and effectiveness of existing HIV prevention programs. Groups comprising community agencies and politicians addressed the likely wider community impact.

Based on these discussions, it was concluded that a pilot PSE program in a prison setting would only be feasible under certain conditions. The primary concern of all groups was the policy of the NSW Department of Corrective Services, which opposes the introduction, or exchange of syringes in any capacity. Prison officers were also unanimously opposed to PSE as a result of the attack with a blood filled syringe in 1991. This issue would need to be negotiated and co-operation of prison staff secured before implementation of any pilot PSE could be considered. A frequently offered suggestion for reducing security risks of a PSE was the allocation of specialised sections of prisons to deal specifically with selected drug injectors. These specialised wings might provide a broad range of treatments and harm minimisation strategies, possibly including PSE. Custodial, counselling and medical staff in these areas would be specially selected, trained and clearly apprised of their own roles and the goals of the unit. Issues which were reported in addition to these key factors included use of the program to monitor drug use, possible conflict between health and correctional staff, non-injecting prisoners starting to inject and lack of resources for current programs.

Some participants in the discussion groups identified legislative and policy issues. Parliamentarians noted that legislation of the program would require bipartisan support. However, they also concluded legislation does not overcome practical barriers such as staff opposition. A more common issue mentioned among both prison and health staff was the conflict between correctional policy and harm minimisation policy. While this was noted as a barrier, some group members suggested it might be overcome via “self selection of staff” and “values clarification training”. Some participants also noted that regulatory changes needed to be implemented to allow for possession of syringes without prison officers using this to identify drug users.

Group participants provided little consensus on the operational issues for the programs. Opinions were divided on criteria for the prisons. Some participants noted that maximum-security prisons provided more stability while minimum-security prisons had more drug use. Participants also noted that women’s prisons had greater drug use but that male prisons had larger populations. Suggestions for distribution of sterile needles and syringes included drug and alcohol counsellors from the NSW Corrective Services, Corrections Health Service nurses, prisoners, non-governmental AIDS organisation staff and automatic dispensers. The common problem with each of these distribution possibilities was the potential for identifying drug users. Distribution of a complete kit including sterile needle and syringe, cotton wool, alcohol swabs, distilled water and spoons was agreed upon throughout all groups except the prison officers who were unanimously opposed to the operation of PSE.

Research experts also discussed the criteria for evaluation of a pilot PSE. A variety of indicators and appropriate research methods were developed (Table 12). The participants agreed that a proper evaluation would require a two-year time frame. They also agreed that the effectiveness of all other prevention measures would

need to be maximised. It was also suggested that a pilot prison and a control prison should be monitored during the evaluation. The pilot prison would require pre-intervention and post-intervention monitoring.

Table 12: Indicators and Methods for Evaluation of Prison Syringe Exchange Programs

Indicator	Method
HIV transmission	Antibody test Antigen test PCR
Hepatitis B or C	Antibody test
Reduction of sharing	Self report Blood type in syringes
Reduction of circulation time	Marked syringes
Assaults	DCS records
Conflicts between staff and inmates	Interviews Focus groups DCS records
Increase in numbers injecting	Self report Hair testing
Increase in syringes confiscated	DCS records
Increased drug use	Self report Hair testing

(data adapted from Rutter, Dolan, Wodak, et al., 1995)

Analysis of the issues discussed in the groups resulted in the following recommendations for implementing PSE in New South Wales:

1. Conditions required prior to implementing a pilot PSE

- a. A specialised drug treatment wing should be established.
- b. Custodial and health staff should be voluntary.
- c. Custodial and health staff should be specially trained.
- d. One of the following options for distribution should be selected by a joint committee of custodial staff, health staff and inmates:
 - vending machines
 - nursing staff
 - outside agency “injecting room”
- e. If key stakeholders agree on a pilot, this should be subject to certain

conditions including no increase in risk of infections to staff, inmates or visitors from assault, occupational injury or accidental injury.

2. Conditions required for a pilot PSE

- a. Distribution of needles and syringes in a PSE would have to be strictly one-for-one.
- b. Treatment wings and control wings should be monitored for two years including 6 to 12 months prior to implementation of PSE.
- c. Participants in both wings should be tested for hepatitis B, hepatitis C and HIV every 6 months.
- d. All participants should be involved in HIV/AIDS educational courses at recruitment.
- e. Peer educators should be trained.
- f. Bleach should be available in both wings.
- g. All participants not previously exposed to hepatitis B should receive a vaccination.
- h. All inmates should be assessed and offered methadone maintenance if appropriate.

3. Procedures required for evaluation of a pilot PSE

- a. Open-ended interviews should be conducted with staff and inmates on a monthly basis.
- b. Structured interviews on drug use should be conducted at 6-month intervals.
- c. Hair analysis of all participants should be conducted at 3-month intervals.
- d. Marked syringes should be monitored to estimate circulation times.
- e. Focus groups should be conducted with custodial staff, health staff and inmates after the first year.
- f. DCS records should be reviewed for assaults and drug seizures in both wings at conclusion of the study.
- g. All participants should receive a clinical evaluation at the end of the pilot.

Legislative Issues

The issues raised by NSW stakeholders identified involved legislative issues for PSE (Rutter, Dolan, Wodak, et al., 1995). Existing legal frameworks will impact on the effectiveness of possible PSE as noted above. ACT convicted prisoners currently fall under NSW legislation. However, any legislative debate in development of an ACT prison may need to consider the issues as they relate to NSW.

Statutory Provisions

There are four separate New South Wales statutory provisions that may be considered in the implementation of PSE.

NSW Felons [Civil Proceedings] Act 1981 allows a felon to take civil proceedings. The key sections of the Act are as follows:

- Felon may sue
 3. Subject to this Act, a person shall not, by reason of his having been convicted of, or found to have committed, a felony, be incapable of instituting and maintaining any civil proceeding in any court.
- Leave required in certain circumstances
 4. A person who is in custody as a result of his having been convicted of, or found to have committed, a felony, may not institute any proceedings in any court except by the leave of that court granted on his application.
- Grant of leave
 5. A court shall not, under section 4, grant leave to a person to institute proceedings unless the court is satisfied that the proceedings are not an abuse of process and that there is a prima facie ground for the proceedings.
 7. At the hearing or determination of an application or appeal under this Act, except by leave of the court to which the application or leave is made
 - (a) the applicant or appellant, as the case may be, is not entitled to appear in person ...

The second relevant legislation is the Prisons Act 1952 (NSW). Section 46 limits the legal action that may be taken in New South Wales against the prison authorities. It states:

- Civil and Criminal Liability
 46. (1) No action or claim for damages shall lie against any person for or on account of anything done or commanded to be done by him and purporting to be done for the purpose of carrying out the provisions of this Act, unless it can be proved that such act was done or commanded to be done maliciously and without reasonable and probable cause.

Provided that it is claimed that the action was “purported” to be carried out for a legal purpose, the prisoner bears the burden of proving that it was done maliciously and without cause.

The third relevant legislation is the Prisons (General) Regulations 1995 made pursuant to the Prisons Act 1952 (NSW).

Prohibited Punishments

71. (1) A prisoner must not:

- a) be put in a dark cell, or under mechanical restraint, as a punishment; or
- b) be subjected to:
 - i) solitary confinement; or
 - ii) corporal punishment; or
 - iii) torture; or
 - iv) cruel, inhuman or degrading treatment; or
- c) be subjected to any other punishment or treatment, that may reasonably be expected to affect adversely the prisoner's physical or mental health.

Maximum Penalty: 10 penalty units.

The key phrases in s171(1) are "cruel, inhuman or degrading treatment" and "treatment that may ... affect adversely the prisoner's physical or mental health. Even though the heading is limited to "punishment", the section would appear to include "treatment".

The terminology of prohibited punishments - "cruel, inhuman or degrading" - is significant with regard to the discussion on judicial consideration. The regulation has not been the subject of any reported decisions, so we must look elsewhere, particularly to the United States, for some authority. The terminology is encountered in the United States Constitution, in International Covenants and in the Prison Regulations of other jurisdictions. It is probably based on the Bill of Rights 1689 (England):

The fourth provision is s24 of the Victims Compensation Act 1996 (NSW) which provides that convicted inmates are not entitled to receive victims' compensation under the act unless the person was imprisoned only for fine default. A further exception is provided in "special circumstances"; however, there has been no judicial consideration of this exception. Accordingly, only prisoners who are on remand, are imprisoned for fine default or fit within the ambiguous category of "special circumstances" are eligible for victims' compensation. Until this legislation there was no distinction drawn between prisoner victims and other victims.

Guidelines

In 1989 the Corrective Services ministers from each state and territory issued the 'Standard Guidelines for Corrections in Australia'. There are two key provisions:

- 1.2 Correctional programs must not, except as incidental to the maintenance of discipline or justifiable segregation, aggravate the suffering inherent in such a situation.

5.33 All cruel, inhumane or degrading punishment must not be used.

While this guideline is not enforceable by legal action, it is important as it distinguishes between regulations and guidelines and may influence courts to be more willing to enforce prison regulations.

Article 7 of the International Covenant on Civil and Political Rights 1976 provides that no person shall be subjected to cruel, inhuman or degrading treatment. A similar phrase is also found in Article 5 of the Universal Declaration of Human Rights 1948. Article 10(1) of the International Covenant on Civil and Political Rights 1976 states that:

All persons deprived of their liberty shall be treated with humanity and with respect for the inherent dignity of the human person.

The United Nations Standard Minimum Rules for the Treatment of Prisoners contain similar provisions but again they are unenforceable. As they are not an international convention, they do not create legal obligations in Australia.

As a result of the Royal Commission into Aboriginal Deaths in Custody, the Commonwealth lodged a declaration with the United Nations accepting the optional complaints procedures under Articles 21 and 22 of the Convention Against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment. This declaration has the effect of allowing the Committee Against Torture to receive and consider communications from individuals who wish to complain that their rights have been violated.

In terms of HIV/AIDS generally, it has been argued that because of the “profound health risks” inherent in a prison situation, the “denial of HIV/AIDS preventative measures violates Australia’s obligations under Article 16 of the [International Covenant on Civil or Political Rights] Convention”. (Loftgren, 1994).

While Loftgren (1994) was writing in the context of condoms, it has been argued that the same position may apply to other sexual assault reduction methods such as single-cell accommodation, separation of violent offenders, training, counselling and better prisoner supervision.

Common Law

Common law in Australia recognises that prison authorities have a duty to exercise reasonable care for the safety of prisoners and their staff. That is, the prison authorities must take reasonable steps to avoid acts or omissions that the authorities could reasonably foresee would be likely to cause harm to staff or prisoners.

The duty also extends to taking reasonable steps to ensure that prisoners are not harmed by another prisoner (*Dickson v Western Australia*, 1974).

In 1995 the NSW Minister for Corrective Services announced that condoms would be introduced to prisons. This followed a preliminary finding by Dunford J of the Supreme Court of NSW that the government had a duty of care toward prisoners and that prisoners could seek individual orders that condoms be made available to them. (Coulton, 1994).

However the arguments relating to the issue of condoms is different from the issues around needle and syringe programs in prisons. At the time of the introduction of the condom trial in NSW the Minister specifically ruled out the introduction of syringe exchanges within prisons (Lagan, 1995).

Arguments against the introduction of condoms on the basis of their use as potential weapons floundered on the absence of any credible evidence from existing programs. This would not be the case for syringes as a NSW prison officer was stabbed with a needle by a prisoner in 1990, developed AIDS and died. This resulted in the NSW Government passing the Prisons (Syringes Prohibition) Amendment Act 1991, which provided for two years' imprisonment for the introduction or supply of syringes in prisons.

NSW courts have shown a reluctance to intervene in matters relating to prison administration even when prison regulations have been breached. Courts in other states have however shown less reluctance.

Discussion

The overall success of the 19 PSE programs in Europe suggests that similar programs may be beneficial in an Australian setting. However, it is important to note the primary opposition voiced by prison officers in Australia is due to a previous syringe attack. Clearly the first necessity is to clarify legislative and regulatory issues prior to development of a PSE. Legislative authorities and prison administrators will need to clarify the responsibility of the prisons in distributing syringes and protecting the health and well being of both staff and inmates.

Another necessity is to ensure the co-operation of prison staff in the development of the program. Rutter and colleagues' (1995) assessment of stakeholder issues identified that even with legislative support union concerns for officers' safety could still be prohibitive. European guidelines and experience suggests that prison staff involvement in the development and implementation of PSE helped to alleviate fears. Voluntary participation of staff may also assist in decreasing staff resistance.

Practical guidelines in Europe and those suggested by Australian stakeholders were similar in their recommendations. Implementation of a program should be dependent on a high proportion of drug users within the prison. It should also occur within a prison system where other harm reduction strategies such as counselling, education, bleach and condom distribution, methadone treatment and other strategies are maximised. Practical operation such as distribution through

machines or staff members should be developed in co-operation with health and correctional staff as well as inmates. The key emphasis should be anonymity. Clearly possession of needles and syringes should be limited to storage in designated areas within the cell or during transport from distribution points.

Clearly the evaluation team should be independent from the correctional and health staff to allow for objective analysis and anonymity for inmates. Structured and open-ended interviewing to assess inmate and staff attitudes, HIV and hepatitis knowledge and acceptance/utilisation of the program would allow for comparison to the European programs. Review of correctional records on assaults, cell searches and confiscation of syringes or illicit drugs will also be required. Testing of prisoners for HIV, hepatitis C and drug use prior to implementation and at selected intervals during the evaluation is also necessary.

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