

Prison-based syringe exchange programmes: a review of international research and development

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ABSTRACT

Journal publications and conference presentations on prison-based syringe exchange (PSE) programmes were identified by a comprehensive search of electronic databases. Experts involved with development and evaluation of current PSE programmes or policy were contacted for reports, documents and unpublished material. Spanish information on PSE was translated for this review. We identified 14 papers specifically on PSE programmes in Switzerland (six papers), Germany (four) and Spain (four). The first PSE programme started in 1992 in Switzerland. As of December 2000, seven PSEs were operating in Switzerland, seven in Germany and five in Spain. There have been six evaluations of prison syringe exchange programmes and all have been favourable. Reports of drug use decreased or remained stable over time. Reports of syringe sharing declined dramatically. No new cases of HIV, hepatitis B or hepatitis C transmission were reported. The evaluations found no reports of serious unintended negative events, such as initiation of injection or of the use of needles as weapons. Staff attitudes were generally positive but response rates to these surveys varied. Overall, this review indicated that prison syringe exchange programmes are feasible and do provide benefit in the reduction of risk behaviour and the transmission of blood-borne infection without any unintended negative consequences.

KEYWORDS HIV, prison, syringes.

INTRODUCTION

Community needle and syringe programmes (NSPs) reduce the spread of HIV among injecting drug users (IDUs) without increasing drug injecting [1–4]. However, implementation of such programmes has been much slower within prison settings.

There were early indications that extensive HIV transmission could occur in prisons. In Bangkok, HIV infection among IDUs rose from 2% to 27% in 1987 [5] and to 43% by late 1988 [6] following an amnesty and release of a large number of prisoners. Six studies of HIV infection among IDUs in Thailand found that a history of imprisonment was associated significantly with HIV infection [6]. HIV outbreaks in prison have been documented elsewhere [7,8].

In prisons the risk of blood-borne viral infections (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. The 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. A number of organizations have called upon countries to implement where possible the same prevention measures in prisons that were known to be effective within the community [9–11].

The aim of this paper was to collate all available information on needle and syringe programmes in prisons.

METHODS

Relevant journal publications and conference presentations 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. Experts involved with development and evaluation of current programmes or policy were contacted for official reports, policy documents or unpublished materials. Material from Spain was translated for this review. Five experts were interviewed. Information collected from these interviews was added as supplementary data to the reported literature.

RESULTS

As of December 2000, a total of 19 prison-based syringe exchange (PSE) programmes were identified in Switzerland, Germany and Spain (see Table 1). Switzerland was the first country to start in 1992. Details of the development and operation in each of these three countries are reviewed separately below with comments noted from key informants.

Switzerland

In 1992, while the legal and practical nature of prison-based syringe exchange programmes was being examined, a doctor in a men's prison in Oberschöngrün began distributing syringes to prisoners who were injecting drugs [12]. The prison director accepted the doctor's arguments and sanctioned the operation.

There are two main operational protocols used in Swiss PSEs: via the prison doctor and via an automatic distribution machine. Oberschöngrün and Geneva prisons distribute syringes through the prison doctor [12]. Sterile syringes were distributed to prisoners upon request and exchanged for new syringes when needed. No data on syringe distribution have been reported for the Geneva prison.

The prisons at Hindelbank and Realta used automatic distribution machines placed in discrete areas of the prison for anonymity. In Hindelbank prison, six distribution machines were placed at various locations accessible to the inmates [13]. All prisoners were offered dummy syringes at the start of the programme or on prison entry. Dummy syringes were the same size and shape as normal syringes so they would work in the machines, but were not useable for injecting.

Automatic distribution machines provided a sterile needle and syringe for a used one. A total of 5335 syringes was distributed in the first year. A single

machine was used in Realta prison, which distributed 1389 syringes over a 19-month period [14].

Evaluations were conducted in Hindelbank [15,16] and in Realta [14] prisons (see Table 2). The evaluation consisted of semistructured interviews, voluntary blood tests and review of medical and prison records. At Hindelbank, inmates were interviewed at the start of the programme, 3 months, 6 months, 12 months and 24 months. The response rate for the inmate survey at Hindelbank was 88%.

Results of the evaluations indicated stable patterns of drug use through the first three interviews and decreasing frequency of drug use in the fourth and fifth interviews. Syringe sharing ceased after implementation of the PSE in Hindelbank and dropped significantly to only a few prisoners in Realta. Blood tests and medical reports in Hindelbank indicated no new cases of HIV, hepatitis B or hepatitis C. It was unclear whether this referred to trial participants only or to all inmates who had been tested. Reports of abscesses decreased during the study. Only self-report data were available for Realta prison and indicated no new cases of HIV, hepatitis B and hepatitis C.

There were also no reported incidents of syringes being used as weapons in either prison. One incident was reported in Realta of a prisoner being injured by a discarded syringe. Prisoners had good knowledge of HIV but poor knowledge of hepatitis C. Knowledge was assessed by asking inmates whether various activities carried any risk of transmission.

Response rates for staff surveys were not as high as inmate surveys in the Hindelbank pilot, but better at Realta [15]. However, the final response numbered 86 of 111 staff who completed questionnaires at some point during the pilot. Results of staff evaluations indicated a high level of acceptance for the programmes. Among the small proportion of staff who had reservations, there appeared to be a positive correlation between their perceptions of prison strategies and their overall attitude to drug strategies in the community. Both evaluations noted the need for education and consultation with prison staff to address any expressed concerns.

The doctor in Oberschöngrün distributed approximately 700 syringes per year to approximately 15 IDUs [15]. Although no scientific evaluation had been conducted in Oberschöngrün prison, the doctor had reported some observations regarding the PSE. During the first 3 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.

Germany

The first documented consideration of PSE was in 1994

Table 1 Syringe exchange programmes in European prisons.

Country	Prison	Size	Character	Type	PSE since	Distribution	Exclusion	Other measures
Switzerland	Men's Oberschöngrün	75	Half open	Adults	1992	Doctor	Non-drug user	E, M, C
Switzerland	Women's Hindelbank	110	Half open	Adults	1994	Machines (1 : 1 exchange)	None	E, M, C
Switzerland	Men/Women's 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	E, M, C
Germany	Women's Vechta	169	Closed & remand	Adults/ juveniles	1996	Machines (1 : 1 exchange)	In methadone reception, non-DU	E, M, C, AIDS support user groups
Germany	Men's Lingen	228	Closed	Adults	1996	Drug counselling service	In methadone non-DU	E, M, C, AIDS support user groups
Germany	Men's Vierlande	298	Open	Adults	1996	Machine	None	No details
Germany	Women's Lichtenberg, Berlin	Ca. 40-50	Closed	Adults/ juveniles	1998	Machine	None	No details
Germany	Men's Lehrter Str., Berlin	Ca. 100	Closed	Adults/ juveniles	1998	Machine	None	No details
Germany	Men's, Fuhlsbüttel	600	Closed	Adults	2000	Staff	No details	No details
Spain	Men's Basauri, Bilbao	250	No Details	Adults	1997	External staff	No details	E, M, C, bleach, condoms, detox
Spain	Pamplona	150	No Details	Adults	1998	External staff	No details	No details

Updated from Stöver (2000) [18].
E = Education; M = Methadone; C = Counselling.

Table 2 PSEs evaluated in three countries.

	Switzerland		Germany		Spain	
	Hindelbank	Realta/Cazis	Lingen	Vechta	Basauri, Bilbao	Pamplona
Prison	Hindelbank	Realta/Cazis	Lingen	Vechta	Basauri, Bilbao	Pamplona
Sex	Female	Male	Male	Female	Male	NA
No. of inmates	110	100	230	170	250	150
% IDU	39	42	50	50	50	64
Sample size	137	234	83	169	607	115
Years studied	2	1	2	2	1	1
No. syringes distributed	5985	1389	4517	16 390	12 500	NA
%Syringes returned	100	NA	98.3	98.9	82	NA
Cases of BBVIs	0	0	0	0	0	0

NA: not available.

[16]. In 1996, approval was granted for a pilot programme at Vechta prison and at Lingen. Development of the German programmes was collaborative and utilized all levels of prison staff including directors, prison officers, health staff, social workers and inmates in the planning stages [17]. The overall goals of the pilots were to assess the feasibility, degree of acceptance, effectiveness and changes in attitudes [17]. The evaluation was a multi-method longitudinal design to be completed over a 2-year period. Inmates enrolled in the methadone programme were excluded from the PSE programme. Regulations were altered to allow possession of a syringe in a specified container and in a specified area at both prisons. Specified containers were cups and specified areas were medicine cabinets in inmates' cells.

Each prison chose different designs for their programmes [17]. At the women's prison, Vechta, five automatic dispensers were installed in accessible but anonymous areas of the prison. Women were given a dummy syringe and exchanged used syringes via the machine for sterile ones. At the men's prison, Lingen, syringes were distributed through counselling staff at a 'contact café'. Prisoners could join the PSE programme by declaring themselves to the prison doctor or counselling staff. Male prisoners exchanged syringes via the counsellors.

Initially there was a high level of acceptance among staff due to the prisons initiating demands for a PSE and the collaborative nature of the planning [17]. However, there was some variance between the two prisons. Staff at the men's prisons were more reserved about their expectations for the success of the programmes. However, in both prisons there was more concern about handling a needle and syringe 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 IDUs received special privileges. Prisoners emphasized that after implementation of the

PSE syringes still remained a commodity for trade in the prison, as some prisoners were excluded. However, they also noted that there was a reduction in stress and improved relationships with officers due to the programme. In the men's prison there was a reluctance to access the programme due to the lack of anonymity and a fear that counsellors' knowledge of participants' drug consumption could affect their parole.

The number of inmates who reported sharing syringes decreased from 54 to four and overdoses dropped to only one during the trial. 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 programmes being implemented in Hamburg (two programmes) and Berlin (two programmes). The pilot programmes have continued their operation [18].

The evaluation indicated the feasibility of implementing PSE in Germany [19]. There were no reported attacks on staff during the 2-year period and only a few incidents were reported involving incorrect storage of the syringes and possession by methadone clients. The programme was well integrated into the health systems in the prisons and referrals to drug treatment programmes increased during the pilot period. The programme was also well integrated into the social structure of the prison and there were no increases in cell searches as result of the PSE. Problems noted with the programme included technical failures of the machines and concerns over anonymity, as the distribution was through 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.

Spain

Five PSE programmes were identified in Spain. Each programme was implemented in collaboration with the regional health authorities. Kits containing a syringe, alcohol swabs and water were supplied and distributed by local non-government AIDS organizations.

The Basauri Penitentiary Centre is a male prison with a high turnover of inmates. Half the inmates reported using illicit drugs and 75% of these reported injecting. This pilot programme distributed needles and syringes to inmates through a health service team. Both inmates and staff were interviewed during a 2-year period to assess attitudes and behaviours during the pilots. Inmates utilizing the PSE and non-IDUs were also interviewed for comparison. As with other European programmes, the Spanish programmes emphasized identified storage areas for syringes. They also encouraged identification of PSE syringes to allow for distinguishing contraband syringes.

The first two programmes developed have received positive evaluations, and initial reports from two additional programmes have also been encouraging (Dr Angela Bolea, personal communication, 2000). Evaluation of the PSE in Basauri prison in Bilbao indicated no negative incidents after distribution of more than 16 500 syringe kits. There was no increase in drug use; risks of blood-borne viral infections decreased, and the programmes facilitated greater prisoner contact with drug treatment programmes over the 3-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 programmes [20]. Personal contact with current Spanish PSE allowed for further education and motivation of IDUs to enter drug treatment services. A second PSE was established in 1998 in Pamplona.

Evaluation reports from the Basauri prison indicated the feasibility of PSE in Spanish prisons [21]. Results of inmate surveys indicated a significant decrease in perceptions of problems associated with PSE and risks of HIV or other viral infections. Reports of reuse of syringes decreased from 16% of IDUs at time 0 to 13% at time 2. Similar results were reported for the Pamplona prison, although staff had more fears for safety [22]. Although the staff members surveyed reported fear for safety, they also reported overwhelming support for and necessity of the PSE programme.

The Spanish authorities developed guidelines for the implementation of PSE after the positive results of the evaluations and are planning expansion into other prisons [21]. Prerequisites for a programme were the presence of significant numbers of IDU in the prison, an assessment of the individual institutions' needs and anonymity for participants. None of the Spanish PSE utilized

automatic dispensers to distribute syringes; however, guidelines note that the anonymity of this method should be assessed.

Prison syringe exchange programmes in other countries

Experts interviewed for this review reported that PSE are at the planning stage in Italy, Portugal and Greece. A study on the feasibility of PSE in New South Wales, Australia was conducted in 1995 [22,23].

CONCLUSION

This review identified 19 syringe exchange programmes operating in prisons throughout the world. Three different methods of distributing injecting equipment were also identified. Six programmes had been evaluated and were very positive. Conclusions from all evaluations indicated that PSEs were feasible. Authors emphasized the need for collaborative effort in design and development between all groups affected by the programmes. They also emphasized 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 Swiss PSEs operated in small prisons with populations averaging 100 inmates. Authors suggested evaluating pilot programmes in larger prisons. In Germany, pilot PSE programmes were implemented in prisons slightly larger than the Swiss prisons but still with an average inmate population of below 300 [19]. This limits generalization to larger prisons. The largest prison to implement a PSE was in Hamburg, Germany, with a population of approximately 600 inmates.

The primary objective of PSEs was the reduction of blood-borne viral infections in prison. These programmes were achieving their aim, as no new cases of HIV, hepatitis C or hepatitis B were reported in any evaluation. Blood tests and medical reports in Hindelbank prison (Switzerland) indicated no new HIV, hepatitis B or hepatitis C infections. Similarly, Lingen prison in Germany recorded no seroconversions, as did Bilbao in Spain. Self-reports in Realta (Switzerland) indicated no new cases of BBVIs.

Rates of drug use reported from Hindelbank, Realta, Lingen and Bilbao prisons were stable or decreased. The Swiss evaluations found a reduction in drug use at two follow-ups. The German evaluation also noted good integration of the PSE into the health system and an increase in referrals to drug treatment. In Bilbao prison the programme facilitated increased inmate contact with drug treatment staff. Rates of overdose at Vechta and Lingen fell during the pilots. Perhaps there have been alternative explanations for the observed consequences of PSEs.

The overall success of the evaluated PSE programmes in Europe suggests that similar programmes may be beneficial in any correctional setting with a high rate of injecting drug use. Initial reports suggest the provision of sterile injecting equipment reduced the incidence of BBVIs, sharing of injecting equipment and abscesses. PSE programmes may also reduce overdose and drug use while improving health and increasing referral into drug treatment. A detailed list of possible indicators and methods for evaluation of prison syringe exchange programmes appears elsewhere [22].

Of the programmes which have been evaluated, populations are small. This suggests a need for a PSE programme to be evaluated in a large prison before the viability of implementing such a programme can be confirmed. Overall, this review confirmed that prison syringe exchange programmes are feasible and do provide some benefit in the reduction of risk behaviour without any unintended negative consequences.

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