

**BLEACH AVAILABILITY AND RISK
BEHAVIOURS IN PRISON
IN NEW SOUTH WALES**

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Technical Report No.22

BLEACH AVAILABILITY AND RISK BEHAVIOURS IN PRISON IN NEW SOUTH WALES

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Summary

This study investigated the access of NSW prisoners to disinfectants for syringe decontamination and the prevalence of injecting drug use, syringe sharing, tattooing and sexual activity in prison. Self completion surveys were administered to all prisoners in AIDS education courses from May to December 1993.

The sample compared closely to the prison population as recorded by the 1991 National Census of Prisoners¹. The mean age in the census population and the sample was 30 years (sd=8.4 yrs; n=180). Half of the prisoners in the census (49%) were in prison for the first time, compared to 43 percent of those in the study sample. Reports of the most serious offences were similar in the census and the study sample: robbery (12% in census vs 28% in sample); break and enter (17% vs 11%); assault (12% vs 15%); sex offences (8% vs 11%), drug dealing (8% vs 7%), drug possession (1% vs 1%) and homicide (8% vs 11%). The mean duration of prison sentence (5 years) was identical and the proportion serving more than ten years (14%) in the sample was similar to the census (19%). Therefore we believe that our sample was representative.

Over one third (38%, n=171) of respondents reported having easy access to either disinfecting tablets or liquid bleach in the four weeks before the survey, with disinfecting tablets (33%, n=144) being more accessible than liquid bleach (22%, n=172). In eight of the 12 prisons surveyed, less than half of the respondents reported that access to disinfectants was easy. Although it was difficult for some respondents to obtain disinfectants, over two thirds (71%, n=150) reported that they could obtain disinfectants when needed. Indeed, the second most common use of disinfectants was cleaning injecting equipment. Respondents were aware of a mean of 10 injectors but only aware of a mean of four syringes on their wing - a strong indication that inmates were sharing syringes. Two thirds of respondents reported a history of drug injecting (64%, n=177) and almost half (45%, n=170) of all respondents had injected in prison at some time. One quarter (26%, n=176) of respondents reported that they had injected in the prison where they were surveyed, one fifth (20%, n=176) reported sharing syringes and just under one fifth (19%, n=177) reported cleaning syringes with a disinfectant when sharing.

Although less than one third of respondents who had injected (30%, n=46) reported that disinfectants were easy to obtain, most (96%, n=24) of the respondents who shared syringes in prison had used disinfectants to clean injecting equipment. Nearly two thirds of respondents who shared syringes (62%, n=35) followed the cleaning method they had been instructed to use - the '2x2x2' procedure. One sixth (16%, n=176) of respondents reported sharing tattooing equipment in prison and two thirds (63%, n=27) of these cleaned the equipment with bleach. Only a few respondents (4%, n=178) reported having had anal sex in prison. **Overall 40 percent of respondents reported having engaged in one of three HIV risk behaviours in prison: one quarter reported injecting, one sixth reported sharing tattooing implements and one twelfth reported having engaged in oral or anal sex while in prison.**

Nearly half (48%, n=181) of the respondents reported that they had committed an offence in order to support their drug use and many respondents (69%, n=181) reported having a drug or alcohol problem prior to imprisonment. Some respondents reported having hepatitis B (9%, n=172), hepatitis C (16%) and HIV infection (3%, n=150). A mathematical model was developed and estimated that the potential for HIV to be transmitted within a prison environment is considerable.

The study found that three years after the distribution of disinfectants began, most (62%) inmates still found it difficult to gain easy access to them. Even if an acceptable and effective form of disinfectant was identified, operational problems may still compromise the effectiveness of a syringe cleaning program for prisoners in NSW. The study was unable to identify any single reason for the difficulty prisoners faced in accessing disinfectants as a range of reasons emerged. Some of these reasons appeared to be related to the change over from disinfecting tablets to the liquid bleach formula.

Although there were problems with the bleach availability program, it should be noted that the NSW Department of Corrective Services was the first in the world to allow the independent monitoring of a such a program for prisoners. Research to develop more effective syringe decontamination is urgently required and alternative methods of distributing disinfectant are needed. A new method of distributing bleach via dispensing machines was introduced in some prisons in early 1994.

Despite low levels of unprotected anal intercourse, condoms should be provided to inmates to reduce the potential of sexually transmissible diseases. Alternatives to custody may need to be considered for offenders with drug and alcohol problems. Serious consideration needs to be given to a pilot strict one-for-one syringe exchange program in a NSW prison evaluated against specific pre-determined objectives. However, the occupational and safety implications must be addressed before such a scheme is implemented.

Several problems were encountered during the course of the study. One problem was the inability to recruit a comparison group of prisoners. Therefore, analysis was confined to 181 prisoners enrolled in AIDS education courses. Another more serious problem was that the effectiveness of bleach as a decontaminant came under serious questioning during the course of the study.

This report was submitted to the New South Wales Department of Corrective Services, which was a condition of access to inmates, in April 1994. A new study, funded by the Commonwealth AIDS Research Grants Committee, examining the risk behaviours and distribution of bleach in prison in NSW commenced in March 1994.

Background

In 1988, almost one in five prisoners in New York City was HIV positiveⁱⁱ and AIDS was the leading cause of death among inmates in America.ⁱⁱⁱ Published reports of HIV transmission in correctional facilities^{iv,v,vi,vii,viii,ix,x} suggest that transmission occurs infrequently.^{xi} However, evidence which indicates that HIV can spread rapidly within the prison setting has started to emerge.^{xii,xiii,xiv,xv,xvi}

In Australia, injecting drug users (IDUs) are over-represented in prison populations.^{xvii,xviii} A review of studies into risk behaviours in prison found that approximately one third of IDUs had injected in prison and of these, three quarters had shared syringes with most using ineffective methods of decontamination.^{xix} In England in 1990, only one seventh (14%) of IDUs who had shared syringes in prison had used a disinfectant or boiled their syringes. Although the overall level of risk behaviours was lower for respondents when in prison compared to when in the community, inmates who injected were at more risk of HIV infection as they were more likely to share and to share with more people.^{xx} Gaughwin estimated that 42 percent of prisoners in South Australia engaged in risk behaviours at least once while incarcerated, with injecting drug use (36%) being more common than anal intercourse (12%).¹⁷ Given the extent of high risk behaviours associated with drug use while in prison it is of particular concern that one study found HIV positive IDUs were significantly more likely to inject in prison than IDUs who were HIV negative or unsure of their serostatus.^{xxi}

When IDUs have been given information and the opportunity to use decontaminants encouraging results have emerged. For example, from 1986 to 1990, IDUs in San Francisco increased the level of syringe cleaning with bleach from 31 to 75 percent, while HIV prevalence dropped from 14 to nine percent.^{xxii} These figures must be cautiously interpreted because prevalence studies provide less accurate information on current spread of infection than incidence studies. Despite this important reservation, encouraging results have been found elsewhere. In Australia, needle and syringe cleaning was associated with lower HIV seroprevalence among IDUs who shared injecting equipment.^{xxiii}

The efficacy of bleach as an HIV decontaminating agent has recently been seriously questioned.^{xxiv} For bleach to be an effective disinfectant, it must be full strength (5% sodium hypochlorite) and contaminated objects need to be exposed to bleach for a minimum of 30 seconds. The time for decontamination must be increased when more dilute concentrations of bleach are used - for example syringes need to be immersed in bleach for two hours to be disinfected when the dilution of bleach is 10 percent.^{xxv} Contoreggi^{xxvi} found that repeated rinsing of syringes with bleach and water was ineffective in removing blood from syringes and that bleach may increase clot formation, which could hinder blood removal and HIV inactivation. More disturbing evidence to emerge was that even when IDUs were explicitly instructed to clean injecting equipment for a specific time, most (80%, n=161) overestimated the time spent doing this.²⁴

The Australian National Council on AIDS (ANCA) revised the guidelines for syringe cleaning in light of the American data.^{xxvii} A study of IDUs, in the community in NSW, found that only one third (32%, n=60) of IDUs used the '2x2x2' cleaning method (see page 8) and most (80%) thought the new cleaning method endorsed by ANCA was too complicated and too long to follow. Also, one third (31%, n=43) of IDUs reported that they did not clean their syringes

because they were in prison.^{xxviii}

After drug injecting, tattooing and sexual activity are the second and third most common risk behaviours to occur in prison. In Norway, 46 percent of prison entrants were infected with hepatitis C and independently of injecting drug use, tattooing was found to be a significant factor.^{xxix} A high prevalence of sexually transmissible diseases has been found among some inmate populations.^{xxx} An American study highlighted the potential role correctional facilities can play in controlling sexually transmissible diseases among inmates.^{xxxi} HIV positive prisoners in NSW were significantly more likely to engage in sex than HIV negative prisoners.^{xxxii} Over 70 percent of a sample of male ex-prisoners (n=155) in NSW thought that condoms should be provided to prisoners.^{xxxiii}

Mathematical modelling can be a useful tool. By using data from surveys of IDUs it is possible to calculate the potential range of HIV transmission occurring in prison with mathematical models developed from theoretical frameworks. Epidemiological mathematical models consist of a series of equations which are formulated upon specific assumptions about the transmission dynamics of the virus. Transmission models can be used to evaluate the effect of all possible mixing matrices, that is who shares a syringe with who and who engages in unprotected sex with who. Models can also be used to assess the significance of various interventions.^{xxxiv} Mathematical models have been used to estimate that two percent of IDUs in English prisons who shared syringes would acquire HIV infection annually¹⁵ and that the probability of acquiring HIV per injection with a contaminated syringe was equal to 0.0067 (0.67%).^{xxxv}

HIV prevention measures are rarely implemented in prison settings, with condoms, bleach^{xxxvi} and methadone^{xxxvii} being available to inmates in only 14, 12 and five countries respectively. There are indications that inmates on methadone maintenance are less likely to inject and share than IDUs not on methadone treatment in prison.^{xxxviii} Only one country operates syringe exchange schemes for inmates.^{xxxix, xl}

The NSW prison system

The health needs of prisoners in New South Wales are the responsibility of the Corrections Health Service, which is independent of the Department of Corrective Services. There is a daily population of approximately 7,000 inmates in NSW,^{xli} with approximately 15,000 inmates entering and leaving each year. In 1989, a study in NSW prisons found that just under half (46%, n=158) of the respondents reported a history of injecting drug use prior to incarceration. One third (32%, n=158) reported injecting in prison at some time with 94 percent (n=50) of these sharing syringes. Less than one third (30%, n=47) of those who shared syringes reported boiling or cleaning syringes with a disinfectant. Seven percent of male respondents reported having sex in prison and rape was rarely (2%) reported.^{xlii} Over 400 needles and syringes were found in NSW prisons in 1990.^{xliii}

The NSW prison system is one of the more progressive ones in the world. In addition to a program of bleach availability for prisoners in NSW there were other initiatives operating in 1993. There was a comprehensive peer education course for inmates on AIDS, which was evaluated in 1993.^{xliv} The NSW correctional system was one of only five systems in the world to provide methadone maintenance to inmates. Although the prison methadone program has been extensively monitored, it has not been assessed as a HIV prevention measure.^{xlv} The

lifestyles unit was established for HIV positive inmates, which operated a three month program to help inmates cope with their HIV infection and to optimise their health. Compulsory HIV testing occurred on entry to and exit from prison at the time of this study. Between 1990 and 1993, HIV surveillance of 19,908 prison entrants in NSW detected 117 cases of infection (0.6%).⁴⁶ No data have been released from testing inmates on exit, but subsequent voluntary HIV testing in prison indicated that between two and four prisoners had acquired HIV infection in prison in NSW.^{xlvi} One case of HIV transmission occurring in an Australian prison has been confirmed.¹⁰ In 1994, the provision of condoms to prisoners in New South Wales was the subject of a Supreme Court case with 52 inmates taking action against the Department of Corrective Services.^{xlvii}

Disinfectants were first distributed to prisoners in NSW in January 1990 in the form of tablets (Milton Tablets™), generally used in the sterilisation of babies' bottles. In 1993 inmates were instructed to dissolve three Milton Tablets in a cup of water and to use a procedure known as the '2x2x2' method for syringe cleaning. This method recommends that a needle and syringe be flushed twice with water, twice with bleach and twice with water. Liquid bleach was introduced in NSW prisons in October 1992 with the intention of completely replacing disinfecting tablets because tablets were being used to contaminate urine specimens which interfered with urinalysis for drug detection. Liquid bleach should have a minimum concentration of one percent bleach when it reaches inmates.^{xlviii} The bleach distribution program had been operating for three years when this study commenced. Disinfectants were available from prison medical staff, prison officers and other inmates on request and at no charge.

Aims and methods

The aim of this study was to monitor the access of NSW prisoners to disinfectants for syringe decontamination and to investigate the prevalence of injecting drug use, syringe sharing, tattooing and sexual activity in prison.

Four correctional staff educators distributed envelopes containing self completion questionnaires (appendix 1) and pencils to all inmates who volunteered for AIDS education courses between May and December in 1993. A comparison group was to be recruited by surveying another education course, unrelated to AIDS, on the same days that AIDS courses were surveyed. Assurances of confidentiality were given to the inmates. Respondents were requested to not write their names on the questionnaires, to complete them in the presence of the educator and seal the questionnaires in envelopes which were addressed to the Research Centre. Envelopes were to be immediately handed back to the educators who returned them to the Research Centre unopened.

The questionnaire was developed in conjunction with the Department of Corrective Services and Professor Ed Kaplan and could be completed in under ten minutes. The questionnaire covered the following areas: respondents' background, access to disinfectants, estimations of other inmates' risk behaviours, self reported risk behaviours and their drug and alcohol problems. Several questions were included for the purpose of constructing a mathematical model of HIV transmission in NSW prisons.¹⁶

Problems encountered

This project received less than half the funding requested. An insufficient number of

questionnaires came from prisoners doing general educational courses (n=15) to make a separate analysis worthwhile. The main AIDS educator resigned in late 1993 disrupting the study. During the course of this study a meeting was held at the John Hopkins University, USA, to review research and current practices into the use of bleach to decontaminate injecting equipment. Serious doubts were raised at that meeting about the efficacy of bleach, although one study revealed that HIV was completely and consistently inactivated by undiluted household bleach at all tested exposures of 30 seconds or longer.²⁵ As a result of that meeting, the Australian National Council on AIDS (ANCA) revised their guidelines on syringe cleaning to be: flush the syringe twice with water, fill the syringe with full strength bleach (5.25% sodium chloride), agitate it for 30 seconds and flush twice with water.²⁷

Results

Recruitment and compliance

Between May and December 1993, 196 questionnaires were returned by educators in sealed envelopes to the National Drug and Alcohol Research Centre. The majority (92%, n=196) of questionnaires came from inmates participating in AIDS courses and few from inmates in general educational courses (8%, n=196). This was far short of the target of 400 questionnaires in both groups. Of all the questionnaires returned, six (3%) were blank and two (1%) were completed facetiously and were disregarded. Analysis was confined to 181 questionnaires completed by prisoners in AIDS courses. This represented three percent of prisoners in full time custody at the time (n=6,392). Of the 29 institutions in NSW, 12 were surveyed, which represented a 41 percent coverage.⁴¹

Demographic characteristics

All respondents were male and had a mean age of 30 years (sd=8.4; range: 18 to 63 years, n=180). Respondents had been imprisoned a mean of three times (range: 1 to 21 times, n=174) and approximately half (43%, n=174) were in prison for the first time. The mean length of sentence respondents were serving was five years (sd=5; range: 8 weeks to life, n=168) and they had been in the prison where they were surveyed for a mean of 56 weeks (sd=102; range: 1 week to 17 years, n=173). Respondents nominated 17 types of offences as the most serious one for their current imprisonment. Equal proportions of respondents reported homicide (11%, n=166) and break and enter (11%), while fewer reported drug possession (1%) or drug dealing (7%) as their most serious offence for their current imprisonment.

Access to disinfectants

Over a third of respondents reported that they had easy access to either disinfecting tablets or liquid bleach (38%, n=171) in the four weeks before the survey. Disinfecting tablets (33%, n=144) were more easily obtained than liquid bleach (22%, n=172) (see table 1).

Table 1

Ease with which disinfectants could be obtained

	Milton tablets % (n=144)	Liquid bleach % (n=172)	Either % (n=171)
Not available	42	51	62
Difficult	26	15	
Easy	23	17	38
Very easy	10	5	

Reports of accessibility to disinfectants varied greatly across the 12 prisons. Approximately half of the respondents in four prisons (Prisons 1, 2, 3 and 4) reported easy access to liquid bleach in the four weeks before the survey. In the remaining eight prisons, few respondents reported this. Reports ranged from under one fifth of respondents in five prisons (Prisons 5, 6, 7, 8 and 9) to no respondents having easy access to liquid bleach in three prisons (Prisons 10, 11 and 12) (see figure 1).

Reports of easy access to disinfecting tablets also varied greatly across the prisons. In all 12 prisons, less than half of respondents reported having easy access to disinfecting tablets. In seven prisons (Prisons 1, 2, 3, 4, 7, 8 and 11) about two fifths of respondents reported easy access to tablets and in two prisons (Prisons 6 and 12) there were few reports of easy access. No respondents from three prisons (Prisons 5, 9 and 10) reported easy access to disinfecting tablets. Respondents from four prisons reported a reasonable level of access to both liquid bleach and disinfecting tablets (Prisons 1, 2, 3 and 4) (see figure 1).

Although it was difficult for some respondents to obtain disinfectants, over two thirds of the respondents (71%, n=150) reported that they could obtain disinfectants when needed. Disinfectants were most commonly used for cleaning cells (26%, n=150), followed by cleaning injecting equipment (20%), toilets (17%) and tattooing equipment (5%). Respondents were asked why they could not obtain disinfectants and a range of reasons emerged (see table 2).

Figure 1

**Contains Data for
Postscript Only.**

**Table 2
Reasons why respondents could not obtain disinfectants**

	Milton tablets % (n=98)	Liquid bleach % (n=94)
Not available	34	60
No need/didn't ask	35	21
Officer reluctance	13	13
Clinic reluctance	10	2
Limited supply	2	4
Avoid searches	6	0

Respondents were asked who they could obtain disinfectants from and a range of sources emerged. The two most common sources were medical staff and inmates (see table 3).

**Table 3
Source of disinfectants**

	Milton tablets % (n=157)	Liquid bleach % (n=154)
No one	35	53
Medical Staff	39	9
Inmate	26	18
Prison Officer	9	19

Other	4	8
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Estimates of the prevalence of injecting and the existence of syringes

Overall, approximately one third (35%, n=157) of respondents reported being aware of inmates on their wing who had injected in the four weeks prior to the survey (mean=10, range: 1 to 50). The estimated prevalence of injecting by other inmates varied across the prisons, with the highest estimated prevalence of injecting at Prison 7 where respondents, on average, estimated that nearly one fifth of inmates (18%, n=17) had injecting in the previous four weeks. Respondents from four prisons (Prisons 2, 3, 4 and 11) estimated that approximately ten percent of inmates had injected on their wing, with lower estimates of injecting coming from respondents at four prisons (Prisons 1, 8, 10 and 12). In three prisons (Prisons 5, 6 and 9) no respondents reported being aware of any inmates injecting on their wing in the month before the survey (see figure 2).

Overall, approximately one third of respondents were aware of syringes (36%, n=154; mean=4; range: 1 to 50 syringes) on their wing in the four weeks prior to the survey. While the level of respondents' awareness of syringes reflected their awareness of the level of injecting in each prison, there was a crucial difference. Respondents were aware of a mean of 10 injectors but only aware of a mean of four syringes - a strong indication that inmates were sharing syringes (see figure 2).

Prevalence of risk behaviours

Overall 40 percent of respondents reported having engaged in one of three HIV risk behaviours in prison. One quarter (26%) reported injecting, one sixth (16%) reported sharing tattooing implements and one twelfth (8%) reported engaging in oral or anal sex while in prison.

Drug injecting and syringe sharing

Nearly two thirds of the sample (64%, n=177) reported a history of drug injecting and almost half (45%, n=170) had injected in prison at some time. Among respondents with a history of drug injection, two thirds (68%, n=113) had injected in prison at some time. Overall one quarter (26%, n=176) of respondents reported that they had injected in the prison where they were surveyed (mean 6.3 injections, range: one to 30, n=35). Of these, 76 percent (mean 6.2 shared injections, range: one to 30, n=24) reported that they had shared syringes. Of those who shared, 96 percent (n=24) reported that they had used a disinfectant to clean the syringe.

Self reports by respondents of injecting in the prison where they were surveyed varied greatly across the 12 prisons. In two prisons (Prisons 11 and 12) over half of the respondents reported that they had injected. In seven prisons, (Prisons 2, 3, 4, 6, 7, 8 and 9) at least one in five respondents reported injecting. In two prisons (Prisons 5 and 10) no respondents reported injecting in their current prison. Reported levels of syringe sharing equalled reports of injecting in nine of the 12 prisons. Only in three prisons (prison 6, 8 and 12) did some respondents report injecting without sharing (see figure 3).

Figure 2

Contains Data for Postscript Only.

Syringe cleaning

Virtually all respondents who had shared syringes had also cleaned them (96%, n=24). Respondents who had shared and cleaned syringes were asked how they had cleaned the last syringe they had shared in prison. By far the most common (51%, n=35) cleaning method used was the '2x2x2' procedure. An additional 11 percent reported flushing syringes more than twice at each step. Nearly two thirds (62%) had followed the cleaning instructions that were given (see table 4).

Table 4
How syringes were cleaned

	% (n=35)
2x2x2	51
Bleach	23
NxNxN	11
Water	6
No clean	6
Other	3

Figure 3

Contains Data for Postscript Only.

3

Tattooing

The shared use of tattooing equipment in prison was reported by one sixth (16%, n=176) of respondents. Approximately two thirds of these (63%, n=27) reported using a disinfectant to clean the tattoo needle.

Sexual activity

One sixth (15%, n=149) of respondents reported an awareness of inmates on their wing who were sexually active in prison and they were aware of a mean of six prisoners (range: one to 40) who were sexually active. Eight percent of respondents (n=178) reported that they had masturbated and had oral sex with another inmate while four percent reported having had anal sex in prison.

Drug and alcohol problems

Almost half of the respondents (48%, n=181) reported that they had committed their offences to support their drug or alcohol use and over two thirds (69%, n=181) reported having a drug or alcohol problem before entering prison. Almost two thirds (64%, n=180) reported still having a drug or alcohol problem when surveyed and most were receiving help (see table 5).

Table 5
Drug and alcohol problems and help received

	% (n=180)
No problem	36
No help	18
Counselling	32
Methadone	10
Self help	22

(some respondents received more than one type of help)

Of the respondents who had a drug or alcohol problem (61%, n=174), most (91%) wanted some sort of help. Of these wanting help, two thirds (67%, n=106) wanted counselling, half (50%) wanted to attend a self help group and seven percent wanted methadone treatment.

HIV and other infections

Virtually all prisoners had been tested for HIV infection (93%, n=177). Of those who had been tested and knew their result, three percent (n=150) reported being HIV positive. Over one quarter (28%, n=172) of respondents reported having had a sexually transmissible disease, in the previous year, with a smaller proportion reporting hepatitis B (9%) and hepatitis C infection (16%) in the same period (see table 6).

Table 6
Self reports of infections in the last year

	% (n=172)
Hepatitis C	16
Hepatitis B	9
Genital warts	2
Gonorrhoea	2
Herpes	2
Syphilis	0
Other	5
	% (n=150)
HIV positive	3

Comments from respondents

There were several open ended questions in the survey (appendix 1) which allowed inmates to expand or explain their answers. In addition, space was provided for comments at the end of the survey. These quotes illustrate a range of explanations provided by inmates who were unable or unwilling to obtain disinfectants. Samples of comments were:

'When having sex I used a surgeon's glove'
31 year old prisoner

'Was told they stopped issue' (of liquid bleach)
29 year old prisoner

'Departmental policy not to issue Milton tablets'
43 year old prisoner

'Officers in the wing always say they are waiting for the stores (of bleach) to come but they never seem to arrive'
33 year old prisoner

'I don't know who to see to purchase them' (Milton tablets)
33 year prisoner

'I would not go up to a prison officer for Milton tablets'
35 year old prisoner

'The government needs to look in to the gaol systems about safe HIV activities to issue condoms and clean needles soon'
33 year old prisoner

'Needle exchange programs if not, why ? - condoms, as we're all adults, are necessary to help stop spread of HIV'
29 year old prisoner

'If you ask the clinic (for Milton tablets) your name is put down, you're targeted as a drug user and the screws are on your back, giving target urine samples and numerous cell searches'
27 year old prisoner

'Gaol will not give us them (Milton tablets) Help us'
32 year old prisoner

'Get serious - this is Corrective Services we're talking about (in response to 'Why couldn't you get Milton tablets ?') we get nothing, keep pressuring the bastards to prevent the spread of AIDS in prison'
38 year old prisoner

It appeared that the change in policy from providing Milton tablets to providing liquid bleach may have been misinterpreted by some staff to mean that disinfectants should no longer be provided. Several inmates reported that their names were recorded when requesting bleach and that their cells were subsequently searched.

Comparison of sample to a national prison census

Given that respondents had volunteered for an AIDS course it was possible that there may have been a sampling bias. Therefore, the sample was compared to the NSW prison population as recorded in the 1991 National Prison Census¹ (see table 7).

**Table 7
Comparison of sample to NSW prison population**

	Sample % (n=181)	Population % (n=7,103)
First time in prison	43	49
Sentence > 10 yrs	14	19
Most serious offences		
robbery	28	12
break and enter	11	17
assault	15	12
drug deal	7	8
homicide	11	8
sex offence	11	8
Mean age (yrs)	30	30
Mean length of sentence (yr)	5	5

The sample closely reflected the prison population. However there may still have been a sampling bias in that prisoners who volunteered for AIDS courses may have differed from prisoners who did not. It is important to note that a higher level of HIV infection was found among the sample than has been found from screening inmates on entry. This suggested that HIV positive prisoners were over-represented in the sample. However this is not surprising as HIV positive inmates would be drawn to an AIDS Education Course. It was unfortunate that a comparison group of prisoners could not be recruited.

A mathematical model of HIV transmission in NSW prisons.¹⁶

Information necessary for the construction of a mathematical model was collected in the survey.

The model can be used to estimate the number of HIV infections in NSW prisons that may result from the shared use of injecting equipment. Information collected in the current study and from another study, 'Monitoring HIV risk behaviours and infection among ex-prisoners'³², was as follows: the mean time IDUs spent in prison was 54 weeks; there were 30 IDUs for each needle in prison. The lower (and higher) average number of shared injections for each IDU per week was 0.13 (and 0.41) injections and 70 percent of IDUs cleaned syringes with bleach when sharing.

Other data used in the model: The mean inmate population was 7,000. Bleach had an effectiveness of 10 percent in the decontamination of syringes. The HIV prevalence in IDUs on entry to prison was five percent and the initial HIV prevalence for IDUs in prison was 0.8 percent. The initial prevalence of HIV in needles was 10 percent and the probability of HIV infection resulting from sharing an infectious needle was 0.67 percent³⁵. The model was generated for HIV transmission simulated under the 'Needles That Kill' model,^{xlix} modified for prison. With the lower (and higher) frequency of shared injections of 0.13 (and 0.41), HIV prevalence in IDUs was estimated to rise from 0.8 to 6.7 percent (and from 0.8% to 12.2%). It was estimated that the minimum number of inmates infected in 1993 was 11 in NSW prisons. This should be regarded as a preliminary estimate.

Conclusions and recommendations

In 1992, Australia was one of only 12 countries which operated a program of bleach availability for prisoners.³⁶ The NSW Department of Corrective Services was the first in the world to allow the independent monitoring of the program of bleach availability for prisoners. This study was designed before the limitations of bleach as a disinfectant were fully known. However, the study found that after three years of providing disinfectants to prisoners, serious gaps existed in eight of the 12 prisons that were surveyed in 1993. Australian National Council on AIDS stated that 'efforts should be increased to ensure that bleach and information on methods to sterilise injecting equipment is widely available in prisons'.¹ **It should be noted that alternative methods of distributing bleach to inmates have begun, including dispensing machines.**

Recently, evidence has emerged on the high concentration of bleach needed and the long cleaning time required to decontaminate injecting equipment from HIV.²⁴ These standards are rarely, if ever, met in prison or the community. Inmates were instructed to clean syringes with a procedure known as '2x2x2' in 1993. **It should be noted that syringe cleaning instructions for inmates have been updated and are now consistent with those issued by the Australian National Council on AIDS.**

However, more disturbing evidence to emerge from US studies was that even when IDUs were explicitly instructed to clean injecting equipment for a specific time, most (80%, n=161) overestimated the time spent decontaminating equipment.²⁴ A study of IDUs, in the community in NSW, found that only one third (32%, n=60) of IDUs used the '2x2x2' cleaning method and most (80%) thought the new cleaning method approved by ANCA was too complicated and too long to follow. Also, the second most common reason given by one third (31%, n=43) of IDUs for not cleaning syringes was because they were in prison.²⁸ **Research is needed to ascertain whether other blood borne viruses such as hepatitis B and C can be effectively and rapidly decontaminated from injecting equipment using liquid disinfectant. The Commonwealth Department of Health has begun working on this issue.**

The level of reported risk behaviour in prison was high: 40 percent of respondents reported engaging in one of three forms of risk behaviour in prison. Over one quarter of respondents reported injecting in prison and virtually all of these reported sharing syringes. Other research has found similar levels of injecting in NSW prisons.^{32,42} With a mean population of 7,000 inmates in NSW, this is equivalent to 1,750 inmates injecting in prison during an average month. Given there are only about 500 places in the prison methadone program in 1993, less than one third of incarcerated injectors were able to receive this form of drug treatment. Drug injecting in prison may be reduced by expanding the methadone program and by increasing the dose of methadone given to inmates. **It is recommended that the Corrections Health Service expand the prison methadone maintenance program to enable all inmates with a recent history of heroin injection to receive treatment. In addition, it is recommended that the impact of the methadone program on the spread of other blood borne viruses such as hepatitis B and C, as well as HIV, be evaluated as a matter of urgency. It should be noted that discussions on this matter have commenced with the Corrections Health Service, which has been interested in evaluating the prison methadone program for some time.**

A serious outbreak of HIV infection and hepatitis B in a Glasgow prison resulting from the shared use of injecting equipment has recently been reported.¹⁴ This may have implications for NSW as Glasgow and Sydney both have a similarly low level of HIV infection among IDU populations. In another study, six ex-prisoners claimed, with strong supportive evidence, to have acquired HIV infection while in Australian prisons. One of these cases has been confirmed and the remainder are under investigation.¹⁰ The potential for HIV and other infections to be transmitted in prisons is considerable. The mathematical model in this study supports this and suggested that at least 11 inmates in NSW would contract HIV infection from syringe sharing per year. Because of the increasing evidence suggesting an important public role of correctional facilities in the spread of HIV, **it is recommended that results from HIV testing of NSW inmates be published by the Corrections Health Service on a regular basis.**

In this study, sexually transmissible diseases were commonly reported. Also hepatitis C was more commonly reported than hepatitis B, which was more commonly reported than HIV infection - yet inmates are compulsorily tested only for HIV on entry to prison. Because of the high cost, low diagnostic yield of HIV infections and possible negative consequences of HIV testing **it is recommended that compulsory HIV testing be replaced with voluntary testing for sexually transmissible diseases and hepatitis B and C on entry. All inmates who do not have evidence of previous exposure to hepatitis B should be offered a hepatitis B vaccination. It is understood that state legislation would need to be amended in order to discontinue the compulsory testing of inmates.**

This study had a number of limitations. First, the survey required respondents to be literate. However, it was evident from some completed questionnaires, that many prisoners with poor writing skills had taken part in the study. Second, as respondents had volunteered to take part in an AIDS course, and agreed to take part in the survey, they may have been more compliant, more motivated or more risk averse than prisoners not surveyed. If so, the proportion of respondents who reported injecting and sharing syringes in prison would be an underestimate. Third, it is possible that inmates had volunteered to do an AIDS course because they did not have easy access to disinfectants. Recruitment of prisoners at general education courses may

have clarified this issue. The inability in this study to obtain a comparison group was disappointing but highlights some of the difficulties in conducting research in prison settings. The sample closely reflected the prison population although it was not a randomly drawn one. Although this research was a pilot study, it did identify gaps in the distribution of disinfectants. **It should be noted that a new study, on bleach availability and risk behaviour, commenced in March 1994.**

Drug injection was more commonly reported than tattooing or sexual activity, but there were reports of inmates having anal sex and using makeshift condoms - condoms were not available to prisoners in NSW in 1993. If four percent of the male prison population were engaging in anal intercourse this would be equivalent to 250 prisoners at risk of infection. **It is recommended that prisoners be given confidential access to condoms. The provision of condoms to prisoners was the subject of a Supreme Court case in NSW in 1994.**

Almost half of the respondents claimed that they committed an offence, for which they were imprisoned, to support their drug use and even more reported having a major and current drug or alcohol problem. This raises the question whether imprisonment is the most appropriate response for dealing with these people. **It is recommended that where possible offenders be diverted from the criminal justice system to drug rehabilitation or be given community service orders and that major initiatives be established to ensure that such diversion is facilitated as part of the harm minimisation policy of the Department of Human Services and Health.^{li} This initiative would require the co-operation of several Commonwealth and State Governmental Departments.**

Other prevention measures need to be explored given the shortcomings of the syringe disinfecting program highlighted in this report. One such measure which requires consideration is piloting a strict one-for-one syringe exchange program in prison. Switzerland was the first country in the world to provide sterile injecting equipment to inmates.³⁹

The findings of this study indicate major deficiencies in the existing measures to prevent the spread of HIV in prison. **It is therefore recommended that the World Health Organization's guideline 'in countries where sterile injecting equipment is available in the community, consideration should also be given to providing these materials during detention'^{liii} be adopted. The occupational health and safety implications of this recommendation must be addressed before this is acted upon.**

Don't write your name on these sheets.

Please write in a **NUMBER** or **CIRCLE A LETTER** next to the most appropriate answer. If you don't know an answer or don't want to give one then leave it blank.

This information will be confidential. You can write comments if you wish.

181 interviewed

1. How old are you ? _____ years

*x=30yrs n=180
SD=8.4 R:18-63 yrs*

2. What is the postcode of the city, suburb or town you lived in before entering prison ?

*n=166
103 different codes,
7% interstate*

3. How many times have you been in an adult prison ?

*x=2.9 n=174
once = 43%
R:1-21 times*

4. How long is your sentence ?

*x=5yrs n=168 SD=5yrs
R:8wks to life*

5. What was your most serious offence for this imprisonment ?

n=166 (17 types)

*Homicide = 11% Robbery = 28% Assault = 15% Break & Enter = 11%
Sex Offence = 11% Drug deal = 7% Drug possession = 1%*

6. Were any of the offences for which you are in prison committed to support a habit ?

Yes.....1 No.....2 *n=181
Yes 48%*

7. Did you have a drug or alcohol problem before prison ?

Yes.....1 No.....2 *n=181
Yes 69%*

8. What help do you get for your alcohol or drug problem now ?

A. Don't have a problem **36%** B. No help **18%** *n=180*

C. Counselling **32%** D. Methadone **10%** E. Self help group **22%**

9. What help would you like for your drug or alcohol problem while in prison ? *n=174*
- A. Don't have a problem 39% B. Don't want help 6%
- C. Counselling 41% D. Methadone 4% E. Self help group 30%
10. Have you had any of the following illnesses in the last year ? *n=172*
- A. Hepatitis B 9% B. Hepatitis C 16% C. Chlamydia 1%
- D. Genital Warts 2% E. Gonorrhoea 2% F. Herpes 2%
- G. Syphilis 0% H. Other 5% J. None 72% ANY 28%
11. How easy was it to get Milton tablets in the last 4 weeks on your wing/unit ? *n=144*
- A. Not available 42% B. Difficult 26% C. Easy 23% D. Very easy 10%
12. **'IF NOT AVAILABLE OR DIFFICULT'** Why couldn't you get milton tablets ? *n=98*
- Not Avail=34% No need/ask=35% Officer reluctance 13% Clinic reluctance 10% limited supply 2% Avoid searches 6%*
13. Who could you get Milton tablets from in the last 4 weeks ? *n=157*
- A. No one 35% B. Medical Staff 39% C. Prison Officer 9%
- D. Inmate 26% E. Other 4%
14. How easy was it to get liquid bleach in the last 4 weeks on your wing/unit ? *n=172*
- A. Not available 51% B. Difficult 15% C. Easy 17% D. Very easy 5%
15. **'IF NOT AVAILABLE OR DIFFICULT'** Why couldn't you get liquid bleach ? *n=94*
- Not Avail=60% No need/ask=21% Officer reluctance 13% Clinic reluctance 2% limited*

16. Who could you get liquid bleach from in the last 4 weeks ?

RESULTS
n=154

- A. No one 53% B. Medical Staff 9% C. Prison Officer 19%
D. Inmate 18% E. Other 8%

17. What did you use milton tablets or liquid bleach for in the last 4 weeks ?

n=150

- A. Couldn't get it 29% B. Clean toilets 17% C. Clean tattoo needle 5%
D. Clean cell 26% E. Clean syringes 20% F. Other 19%

18. How many inmates are on your wing/unit ?

x=69; n=169;
SD=63 R: 2-550

19. How many inmates do you know had sex with another inmate on your wing or unit in the last 4 weeks ?

n=149
aware 15%
x=5.5(n=22)
R:1-40

20. How many inmates do you know injected drugs in the last 4 weeks on your wing/unit ?

n=157
aware 35%
x=10(n=46)
R:1-50

21. How many syringes do you know were on your wing or unit in the last 4 weeks ?

n=154
aware 36%
x=4(n=50)
R:1-50

22. Have you ever injected drugs in your life ?

n=177
Yes=64%

Yes.....1 No.....2

23. Have you ever injected drugs in prison ?

n=170
Yes=45%
[of injectors 68% n=113]

Yes.....1 No.....2

24. How long have you been in this prison ? *n=173*
x=56wks, SD=102
R:1wk-17yrs
25. How many times have you injected drugs while in this prison ? *n=176*
26% injected
x=6.3 injections(n=35)
SD=6.6 R:1-30
26. How many times have you injected with a syringe that was used by someone else in this prison ? **RESULTS**
n=176; shared = 20%
x=6.2 shared injections(n=24)
SD=6.8 R:1-30
27. How many times have you injected with a syringe that was used by someone else but the syringe was cleaned before you used it in this prison ? *n=177; cleaned 19%*
x=5.3(n=23)
SD=10 R:1-50
28. IF CLEANED, how did you clean the last syringe you shared in this prison ? (describe in detail) *n=35*
- 2x2x2 = 51% bleach = 23% NxNxN = 11% (N>2)*
water = 6% no clean = 6% other = 3%
29. Which drugs have you injected in this prison ? *n=43*
- A. Heroin **81%** B. Speed **40%** C. Cocaine **9%**
D. Tablets **9%** E. Other **16%** *This question was added later*
30. Have you used the same tattooing needle as someone else in this prison ? *n=176*
Yes=16%
- Yes.....1 No.....2
31. How did you clean the tattoo needle ? *n=27*
- bleach = 63%; no clean = 19%; water = 11%; flame = 4%; other = 4%*
32. Have you had a HIV test ? Yes.....1 No.....2 *n=177*
Yes=93%
33. What was the last result ? A. Negative **82%** B. Positive **2%** *n=177*
- C. Don't know **11%** *[If result known 3% HIV+ (n=150)]*
34. What kinds of sexual activity have you had in this prison ? *n=178*
- A. None **32%** B. Masturbation **66%** C. Masturbation with another **8%**

D. Oral sex 8% E. Anal sex 4% F. Other 3%

THANK YOU ANY COMMENTS? *no* = 78%

n=162

Thanks for course/survey = 7%

want needle exchange/condoms = 6%

no injection because on methadone = 5%

want feedback 1%

complaint conditions = 1%

used condom substitution = 1% *wisecrack* = 2%

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