

WA DRUG ABUSE STRATEGY OFFICE

Statistical Bulletin Number 6, February 2000

DISTRIBUTION OF NEEDLES & SYRINGES IN WA, 1987-1997

Introduction

This Bulletin provides an analysis of the distribution of needles and syringes (N&S) in Western Australia (WA) to injecting drug users (IDUs) for the period 1987 to 1997. It is to be noted there are minor variations in some of data for 1994 and 1995 published in *Statistical Bulletin Number 3* (December 1996) as a result of data verification and ongoing maintenance of the N&S Database, managed by the Health Department of WA's Disease Control Service.

In the earlier phase of the State's needle and syringe exchange program (NSEP) there was an emphasis on improved access by IDUs to sterile injection equipment and the dissemination of blood borne virus (BBV) preventive educational materials in both metro and country areas. The approach involved a key role by the WA AIDS Council (WAAC) which operated a mobile NSEP. Subsequently a growing role was assumed by many of the State's community pharmacies as the major point of access for IDUs to obtain sterile N&S.

More recently a number of initiatives targeted at specific risk groups have been supported as part of the State NSEP program. These include:

- operation of a N&S vending machine at the Central Drug Unit (CDU) since mid 1994;
- establishment of a mobile NSEP under the auspices of the Perth Aboriginal Medical Service at different sites in the metropolitan area (commenced in July 1996) to complement the activities of the WAAC mobile NSEP; and
- operation of a fixed site NSEP in Northbridge operated by the WA Substances Users Association (commenced in November 1997). This program also provides peer education and outreach services to IDUs in the inner city area and surrounding suburbs and has established a close relationship with a treatment referral service.

A more detailed history of the relevant legislative framework which regulates the provision of HIV and other BBV health preventive resources to IDUs is contained in Statistical Bulletin Number 3 and in Chapter 8 of the Final Report of the Select Committee Into the Misuse of Drugs Act 1981.

1987 - 1997 Overview

A total of 10,112,951 new N&S were distributed in this State over the period 1987 to 1997 (Table 1, page 2). Overall, nearly two thirds of all N&S provided to IDUs over the 11 year period were through pharmacies, and 30% through NSEPs. The actual total number of N&S distributed by outlet were:

- pharmacies - 6,573,245 (65.0%);
- NSEPs - 3,015,855 (29.8%);
- hospitals - 225,430 (2.2%);
- community health centres - 19,905 (0.2%);
- vending machines - 258,170 (2.6%);
- nursing posts - 2,230 (<0.1%); and
- other outlets - 18,116 (<0.1%).

Annual trends

From 1987 to 1991 the number of N&S distributed increased and reached a total of 845,190 N&S in 1991. In the following year there was a decrease of 8%, when a total of 779,276 N&S were distributed in 1992. From 1992 to 1994 the number of N&S doubled and reached a total of 1,580,318 N&S in 1994. In 1995 and 1996 there was a decline in the number of 48,468 N&S (3%).

In 1997 a total of 1,862,313 N&S were distributed, an increase of 330,733 N&S (22%) over the previous year.

Type of outlet

Over the period a total of 258,170 N&S were sold through vending machines. A total of 4,305 N&S were sold as an initial trial at the WAAC's former premises in Brisbane Street in 1990 and 1991. In 1994 the establishment of a more closely supervised vending machine at the CDU site has enabled the provision of a reliable after hours point of access to sterile N&S in the Perth inner metropolitan area. In 1997 a total of 83,340 N&S were sold through the vending machine at the CDU in East Perth, less than 5% of all N&S sold in WA in that year.

Outside the metropolitan area the limited availability of outlets in a number of areas has meant that hospitals, community health centres and nursing posts have in some instances become alternative sources of supply of sterile injection equipment. Over the period the majority of these N&S were distributed through hospitals (225,430), with very few N&S distributed through community health centres (19,905) or nursing posts (2,230).

Quarterly trends

Over the period the greatest proportion of N&S have been sold as 'Fitpacks' through chemists. Each Fitpack contains five new 1 ml needles and syringes in a rigid plastic container. To encourage appropriate disposal and to minimise the risk of accidental needle stick injury this incorporates a compartment with built in locking mechanisms to retain each N&S after use.

From 1987 to 1991, the greatest number of N&S were provided to IDUs through the WAAC's NSEP (Table 2a). However, since the March quarter 1992 the greatest number of N&S have been sold through chemists (Table 2b; Figure 1, page 3).

A criterion of success of the State's NSEP is to facilitate existing IDUs' access to sterile injection equipment. From 1988

(the first full year of operation) to 1997 the mean number of N&S per day increased from 195 N&S in 1988 to 5,102 in 1997.

On a year by year basis the mean number of N&S distributed per day were: **195** (1988), **446** (1989), **1,402** (1990), **2,316** (1991), **2,129** (1992), **3,270** (1993), **4,330** (1994), **4,230** (1995), **4,185** (1996) and **5,102** (1997).

Table 1: Annual totals of needles and syringes by type of outlet, 1987 - 1997

Year	Type of outlet							Total
	Chemist	NSEP	Hospital	Community Health Centre	Vending Machine	Nursing Post	Other	
1987	23,990	6,000	-	-	-	-	-	29,990
1988	59,380	12,000	-	-	-	-	-	71,380
1989	120,260	42,648	-	-	-	-	-	162,908
1990	340,355	171,031	-	250	-	-	-	511,636
1991	394,820	444,225	2,560	1,000	2,385	200	-	845,190
1992	420,150	349,806	7,400	-	1,920	-	-	779,276
1993	817,025	372,234	3,570	750	-	30	500	1,194,109
1994	1,144,710	322,983	39,985	6,605	63,535	1,250	1,250	1,580,318
1995	1,070,550	369,671	36,960	3,000	61,030	500	2,270	1,543,981
1996	983,325	447,750	45,775	4,500	45,960	250	4,290	1,531,850
1997	1,198,680	477,507	89,180	3,800	83,340	-	9,806	1,862,313
1987-1997	6,573,245	3,015,855	225,430	19,905	258,170	2,230	18,116	10,112,951

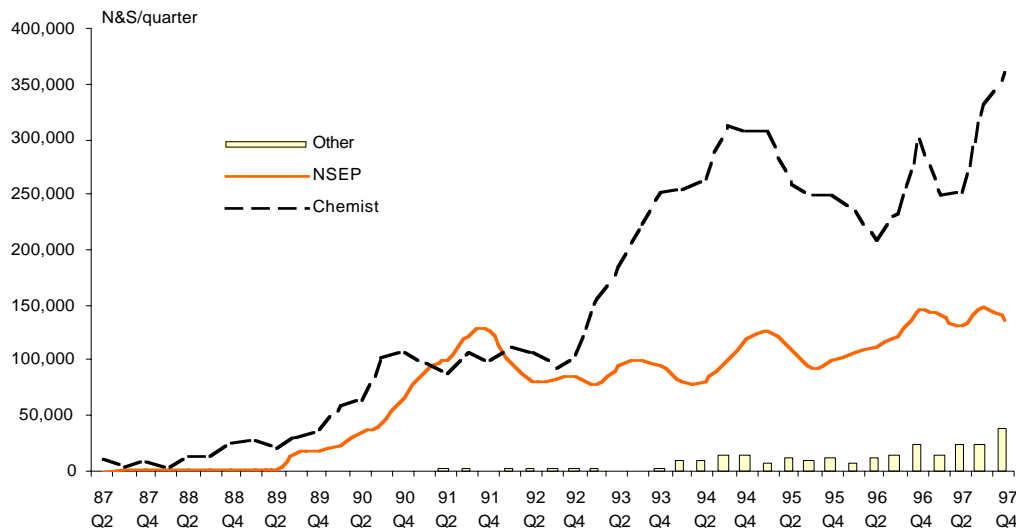
Table 2a: Quarterly totals of needles and syringes by type of outlet, 1987 - 1992

Year	Qtr	NSEP	Chemist	Other	Total
1987	2	-	11,670	-	11,670
	3	3,000	4,080	-	7,080
	4	3,000	8,240	-	11,240
1988	1	3,000	3,430	-	6,430
	2	3,000	14,220	-	17,220
	3	3,000	15,190	-	18,190
	4	3,000	26,540	-	29,540
1989	1	3,000	28,210	-	31,210
	2	3,000	21,370	-	24,370
	3	16,587	30,500	-	47,087
	4	20,061	40,180	-	60,241
1990	1	24,610	60,975	250	85,835
	2	36,117	64,930	-	101,047
	3	42,894	104,700	-	147,594
	4	67,410	109,750	-	177,160
1991	1	91,945	97,530	-	189,475
	2	101,970	88,210	1,400	191,580
	3	124,677	108,780	1,960	235,417
	4	128,018	100,300	400	228,718
1992	1	98,729	112,160	2,000	212,889
	2	81,720	108,000	1,750	191,470
	3	85,179	93,150	2,050	180,379
	4	86,098	106,840	1,600	194,538

Table 2b: Quarterly totals of needles and syringes by type of outlet, 1993 - 1997

Year	Qtr	NSEP	Chemist	Other	Total
1993	1	80,390	155,945	1,620	237,955
	2	95,212	183,705	630	279,547
	3	100,201	223,545	450	324,196
	4	96,431	253,830	2,150	352,411
1994	1	82,358	256,340	9,100	347,798
	2	82,144	264,760	9,400	356,304
	3	102,466	314,070	14,705	431,241
	4	119,550	309,540	15,885	444,975
1995	1	127,764	309,575	6,650	443,989
	2	110,203	261,860	13,290	385,353
	3	92,794	249,500	8,760	351,054
	4	99,940	249,615	14,030	363,585
1996	1	108,828	236,045	5,500	350,373
	2	113,817	210,500	9,840	334,157
	3	123,880	233,975	15,850	373,705
	4	147,185	302,805	23,625	473,615
1997	1	140,478	249,790	14,830	435,898
	2	132,526	254,875	24,655	412,056
	3	150,410	332,200	23,500	506,110
	4	137,433	361,815	39,801	571,579

Figure 1: Quarterly totals of needles and syringes by type of outlet, 1993 - 1997



Metro and country areas

While about three quarters of the State's population lives in the metropolitan area, about nine out of every 10 N&S bought by IDUs were in the Perth metropolitan area. Over the period 1987 to 1997 of the total of 10,112,951 N&S distributed in the State, 8,978,886 (88.8%) were in the metropolitan area and 1,134,065 (11.2%), were in country areas.

Apart from the second quarter of 1987 (which was part of a trial distribution to all chemists, when 16.1% of N&S distributed went to country areas), relatively few N&S were distributed in country areas until about 1994. The number of N&S provided per quarter to IDUs living outside the metropolitan area has gradually increased to about 15% of all N&S in the December quarter 1997 (Tables 3a & 3b, page 4; Figure 2, page 5).

Trends in major country areas

An examination of data was undertaken in relation to 12 country areas for which more than 2,000 N&S had been sold in 1997. Overall five postcode areas accounted for the majority of country sales of N&S in 1997 as follows (Table 4, page 4):

- 108,415 - Kalgoorlie-Boulder postcode area (6430-6432);
- 44,285 - Mandurah postcode area (6210);
- 31,840 - Bunbury postcode area (6230);
- 18,220 - Geraldton postcode area (6530); and
- 15,025 - Busselton-Margaret River postcode area (6280-6285).

A more detailed analysis of quarterly trends from 1993 to 1997 is contained in Table 5 (page 5). In each quarter over the five years the greatest number of N&S were sold in the Kalgoorlie-Boulder postcode area.

Trends in the number of N&S distributed for six postcode areas are provided in Figures 3 to 8 (pages 6 and 7). Increases in the number of N&S occurred in the Bunbury, Mandurah and

Busselton-Margaret River postcode areas where decreases occurred in both the Geraldton and Albany postcode areas.

From 1993 to 1997 the number of N&S:

- increased by more than three times in the Kalgoorlie-Boulder postcode area;
- nearly doubled in the Mandurah postcode area;
- increased nearly four and a half times in the Bunbury postcode area;
- decreased by nearly one fifth in the Geraldton postcode area;
- increased by nearly three and a half times in the Busselton-Margaret River postcode area; and
- decreased by just over one third in the Albany postcode area.

The *Poisons Amendment Act and Regulations* were proclaimed in May 1994 and this, for the first time, legalised the operation of NSEPs in WA. Approval from the Commissioner of Health is required for the establishment of a NSEP and applicants must meet requirements as to character and repute and comply with conditions as to location and hours of operation.

The amendment creates a defence for those operating NSEPs which have been approved by the Commissioner of Health. Approval for a NSEP is conditioned on it having the object of prevention of the spread of BBVs by supplying sterile N&S, facilitating the safe disposal of N&S or advising, counselling or disseminating information in relation to BBVs.

The introduction of this amendment led to the expansion of a number of outlets which provided sterile N&S. It is believed that this particularly contributed to increased access and availability of N&S in non metropolitan areas that occurred in mid 1994 (Table 3b, page 4).

To account for variations in the size of population in each area, crude rates were calculated for the number of N&S distributed per 10,000 population in the year 1997. The denominator is the 1996 estimated ABS resident population for each postcode area.

The mean crude rates for the State, the metropolitan area and the country areas were as follows (Table 6, page 6):

- State rate was 10,550;
- country rate was 5,631; and
- metropolitan rate was 12,335.

The Kalgoorlie-Boulder and Mandurah areas were the only non metropolitan areas which had crude rates above the mean State crude rate. The Kalgoorlie-Boulder area crude rate was 37,392, which was 3.5 times higher than the mean State crude rate. The Mandurah crude rate was 10,876, just slightly above the mean State crude rate (Figure 9, page 7).

Table 3a: Quarterly totals of needles and syringes, metropolitan and country areas, 1987 - 1992

Year	Qtr	Metro	Country	Total state
1987	2	9,645	2,025	11,670
	3	7,030	50	7,080
	4	11,240	-	11,240
1988	1	6,430	-	6,430
	2	17,220	-	17,220
	3	18,190	-	18,190
	4	28,740	800	29,540
1989	1	30,460	750	31,210
	2	24,370	-	24,370
	3	45,837	1,250	47,087
	4	58,741	1,500	60,241
1990	1	83,585	2,250	85,835
	2	95,822	5,225	101,047
	3	136,594	11,000	147,594
	4	166,160	11,000	177,160
1991	1	177,695	11,780	189,475
	2	178,420	13,160	191,580
	3	217,427	17,990	235,417
	4	212,818	15,900	228,718
1992	1	193,639	19,250	212,889
	2	175,720	15,750	191,470
	3	163,424	16,955	180,379
	4	180,558	13,980	194,538

Table 3b: Quarterly totals of needles and syringes, metropolitan and country areas, 1993 - 1997

Year	Qtr	Metro	Country	Total state
1993	1	216,465	21,490	237,955
	2	253,867	25,680	279,547
	3	293,821	30,375	324,196
	4	316,606	35,805	352,411
1994	1	294,408	53,390	347,798
	2	307,864	48,440	356,304
	3	374,461	56,780	431,241
	4	386,980	57,995	444,975
1995	1	395,784	48,205	443,989
	2	337,873	47,480	385,353
	3	310,594	40,460	351,054
	4	314,875	48,710	363,585
1996	1	316,618	33,755	350,373
	2	294,067	40,090	334,157
	3	322,740	50,965	373,705
	4	405,040	68,575	473,615
1997	1	357,003	48,095	405,098
	2	349,256	62,800	412,056
	3	434,530	71,580	506,110
	4	456,769	82,280	539,049

Table 4 : Annual totals of needles and syringes by type of outlet, selected country areas, 1993 - 1997

Locality	Postcode	1993	1994	1995	1996	1997
Kalgoorlie-Boulder	6430-6432	32,375	77,590	59,310	64,710	108,415
Geraldton	6530	21,830	30,330	18,745	19,635	18,220
Mandurah	6210	22,215	29,800	32,675	34,095	44,285
Busseton-Margaret River	6280-6285	4,555	10,270	8,820	10,020	15,025
Bunbury	6230	7,085	25,610	18,855	21,450	31,840
Carnarvon	6701	3,700	5,500	2,940	6,080	7,020
Broome	6725	3,270	4,560	3,545	3,740	4,220
Esperance	6450	2,955	3,280	4,950	5,010	6,865
Albany	6330	4,625	7,085	3,900	3,120	2,930
Karratha	6714	1,680	3,140	3,510	4,130	2,110
Port Hedland-South Hedland	6721-6722	2,360	4,970	13,615	12,525	13,105
Newman	6753	845	1,350	1,250	1,340	2,885

Figure 2: Quarterly totals of needles and syringes, metropolitan and country areas, 1987 - 1997

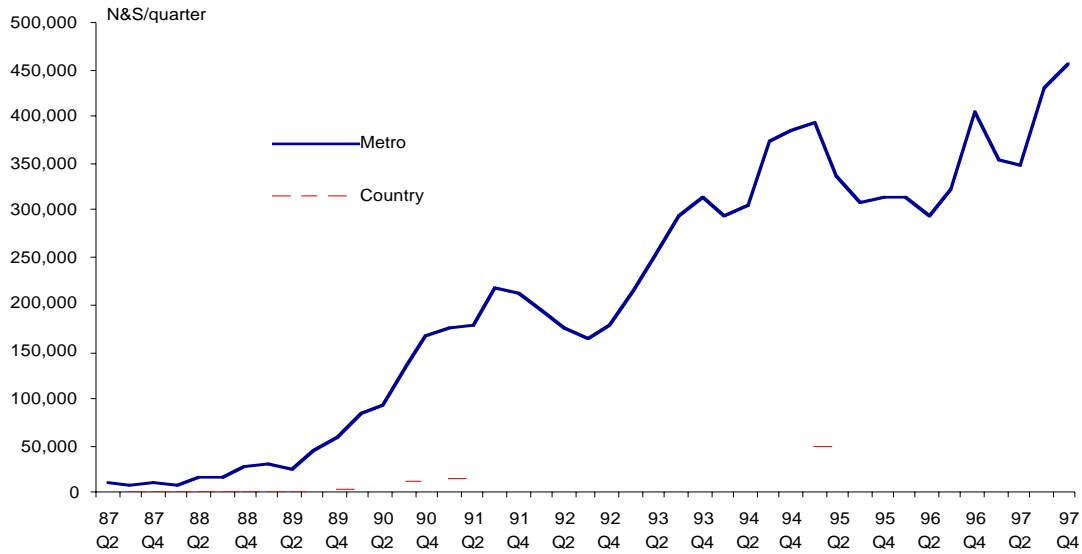


Table 5 : Annual totals of needles and syringes ranked by 6 non metro areas, 1993 - 1997

	Kalgoorlie-Boulder 6430-6432	Mandurah 6210	Bunbury 6230	Geraldton 6530	Busselton-Margaret River 6280-6285	Albany 6330
1993						
Qtr 1	7,100	4,225	1,200	4,265	660	840
Qtr 2	7,345	5,375	1,555	5,365	1,155	810
Qtr 3	7,885	5,370	1,530	5,900	1,375	1,555
Qtr 4	10,045	7,245	2,800	6,300	1,365	1,420
Total	32,375	22,215	7,085	21,830	4,555	4,625
1994						
Qtr 1	16,500	8,025	7,230	8,310	2,570	1,910
Qtr 2	18,790	6,915	6,695	5,815	2,420	1,390
Qtr 3	16,720	7,285	6,705	10,665	2,890	2,635
Qtr 4	25,580	7,575	4,980	5,540	2,390	1,150
Total	77,590	29,800	25,610	30,330	10,270	7,085
1995						
Qtr 1	15,810	8,320	5,875	5,110	1,890	1,450
Qtr 2	11,870	8,775	5,055	4,420	3,100	645
Qtr 3	13,485	7,570	3,425	4,430	1,790	780
Qtr 4	18,145	8,010	4,500	4,785	2,040	1,025
Total	59,310	32,675	18,855	18,745	8,820	3,900
1996						
Qtr 1	12,995	4,050	3,715	3,595	2,080	705
Qtr 2	11,880	6,950	4,440	5,110	2,335	455
Qtr 3	16,985	8,860	4,970	5,515	2,885	395
Qtr 4	22,850	14,235	8,325	5,415	2,720	1,565
Total	64,710	34,095	21,450	19,635	10,020	3,120
1997						
Qtr 1	18,970	6,685	5,480	4,290	3,200	670
Qtr 2	27,850	11,845	6,590	4,695	3,135	745
Qtr 3	28,925	12,400	8,745	5,225	4,655	450
Qtr 4	32,670	13,355	11,025	4,010	4,035	1,065
Total	108,415	44,285	31,840	18,220	15,025	2,930

Table 6 : Number and crude rates of N&S distribution in selected non metro areas, 1997

Area	Postcode	N&S	Population	Crude rate	Rate ratio (area:State)
Kalgoorlie-Boulder	6430-6432	108,415	28,994	37,392	3.5
Mandurah	6210	44,285	40,717	10,876	1.0
Geraldton	6530	18,220	30,061	6,061	0.6
Bunbury	6230	31,840	39,619	8,037	0.8
Busselton-Margaret River	6280-6285	15,025	19,804	7,587	0.7
Carnarvon	6701	7,020	8,786	7,990	0.8
Esperance	6450	6,865	11,809	5,813	0.6
Port Hedland-South Hedland	6721-6722	13,105	13,168	9,952	0.9
Broome	6725	4,220	13,455	3,136	0.3
Newman	6753	2,885	5,476	5,268	0.5
Albany	6330	2,930	26,167	1,120	0.1
Karratha	6714	2,110	10,333	2,042	0.2
Metro	-	1,597,558	1,295,092	12,335	1.2
Country	-	264,755	470,164	5,631	0.5
State	-	1,862,313	1,765,256	10,550	1.0

Figure 3: Quarterly totals of needles and syringes, 1993 - 1997, Kalgoorlie - Boulder postcode area

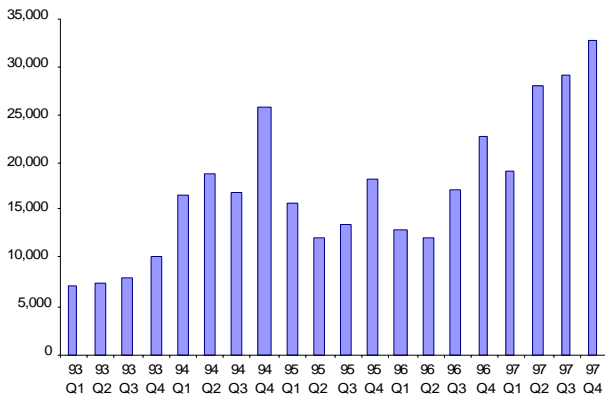


Figure 4: Quarterly totals of needles and syringes, 1993 - 1997, Mandurah postcode area

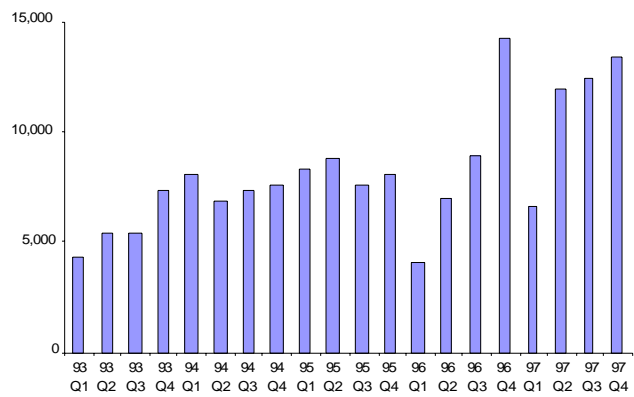


Figure 5: Quarterly totals of needles and syringes, 1993 - 1997, Bunbury postcode area

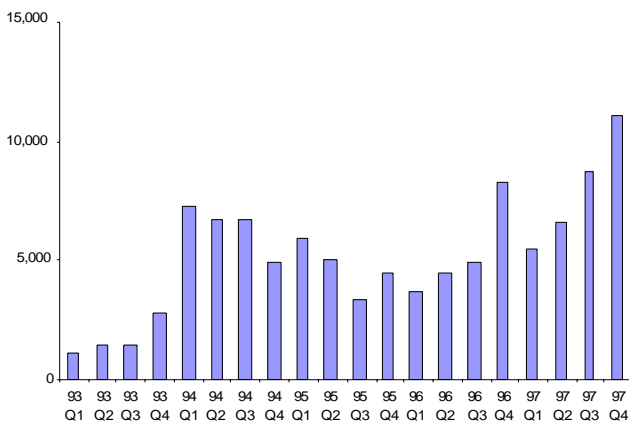


Figure 6: Quarterly totals of needles and syringes, 1993 - 1997, Geraldton postcode area

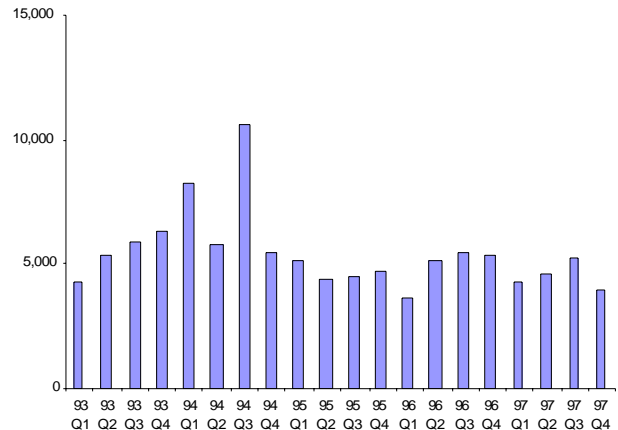


Figure 7: Quarterly totals of needles and syringes, 1993 - 1997, Busselton-Margaret River postcode area

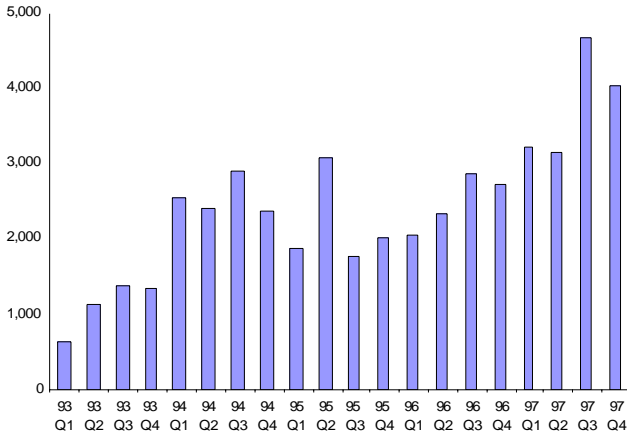


Figure 8: Quarterly totals of needles and syringes, 1993 - 1997, Albany postcode area

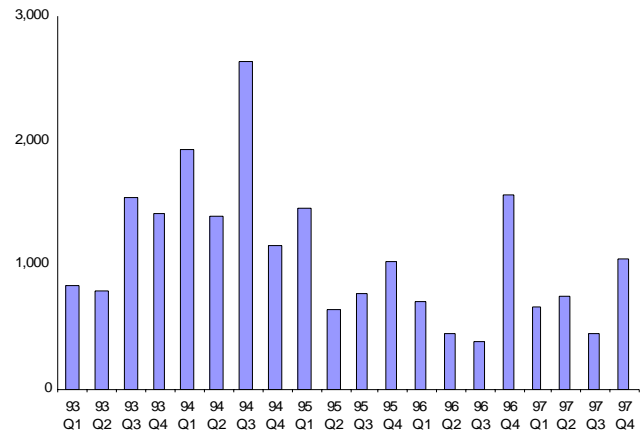
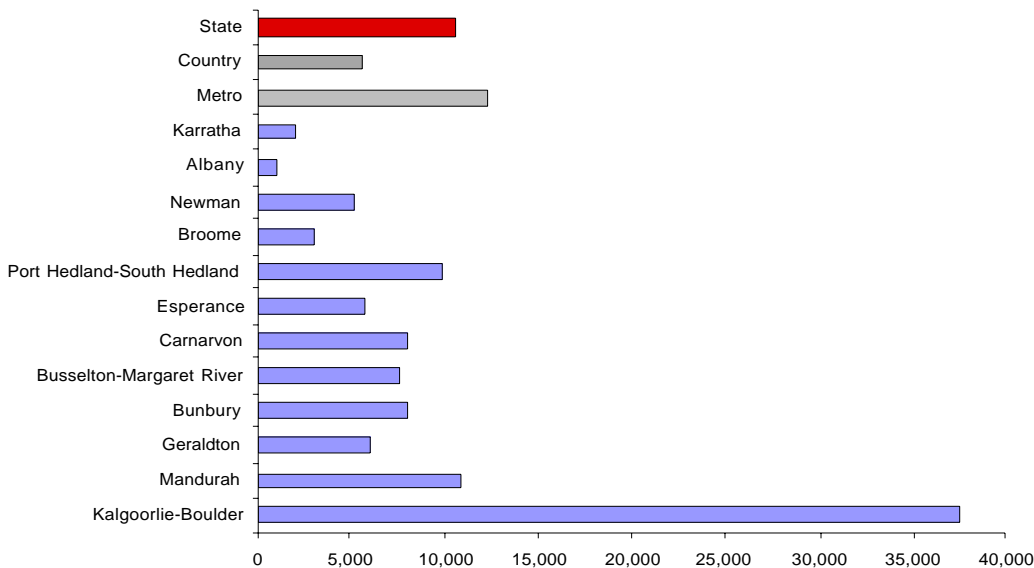


Figure 9: Crude rates of N&S distribution in selected non metro areas, 1997



Rationale for NSEPs

There are a number of public health reasons for the establishment of NSEPs. These are outlined below.

Prevention of BBVs

The initial impetus for the development of NSEPs was part of a set of comprehensive public health measures implemented in the mid to late 1980s to reduce the risks of the transmission of HIV due to high risk practices by IDUs, including preventive activities and expanded treatment programs such as methadone treatment. More recently the growing awareness of the serious public health consequences from Hepatitis B (HBV) and Hepatitis C (HCV) infection has stimulated the development of a broader role by NSEPs to reduce the spread of all BBVs amongst IDUs as well as into the general population.

There is a growing evidence which has identified a number of other important functions provided by NSEPs, in addition to the impact they have had on reducing the sharing of N&S. It has been found that NSEPs have a major impact on the length of time that used syringes circulate in the drug using population by reducing circulation time from an average of 23 days to less than 3 days. This indicates NSEPs significantly reduce the risk of transmission of HIV and other BBVs by removing used injection equipment from circulation within a very short time.¹

Over the period 1983 to 1997 there was a total of 1,077 HIV/AIDS notifications in this State. Of these 59 (5.5%) involved cases where injecting drug use was the sole risk factor, with a further 66 cases (6.1%) which had multiple risk factors, including injecting drug use.

HCV was only made a notifiable disease in this State in 1993. In 1997, based on the 80% of cases for whom there is data, it was found that nearly eight out of 10 notifications involved injecting drug use as the relevant risk factor.

Research indicates that there is a growing public health risk posed from HCV amongst IDUs, as the risk of infection substantially increases the longer drugs are injected. For instance, it was noted in a recent report that "An extensive 1994 study showed that more than 80 per cent of those who have injected for over eight years are infected, and about 15 per cent of those injecting for less than two years are infected."²

Needle sharing

A study of the frequency of use of sterile N&S by nearly 600 active IDUs in seven US metropolitan cities found a median of three injections for the most recently used syringe and that one in five IDUs had used that syringe only once.³

An interview survey of 8,400 IDUs at 18 different sites in the United States reported high rates of re-use of used injection equipment, with one third of the respondents using injection equipment they knew had been previously used, with a mean frequency of transfer of syringes of 7.6 times in the past 30 days.⁴

A West Australian survey in 1995 of just over 500 IDUs who purchased Fitpacks found in the past month that about six out of 10 respondents had neither passed on nor received a previously used syringe. It was found "that those respondents who shared needles in the past month, were almost twice as likely as those who did not to be under 26 years of age, were almost twice as likely to have injected at least daily over the past month, and were almost six times as likely to have shared other equipment such as swabs, spoons, water, etc."⁵

While relatively low rates of sharing of used N&S were found in this study, it identified high rates of sharing of other injecting equipment, such as spoons, filters, water and tourniquet. In the preceding month nearly 60% of respondents reported they shared these items and just under a quarter had shared these items more than 10 times.

The Youth AIDS and Drugs (YAD) study conducted interviews in Perth in the early 1990s with 105 people aged less than 21 years. Of the 79 young people who had ever injected drugs, 38 (48%) had shared needles with others, 16 (42%) of whom had done so within the past month.⁶

There were 196 West Australian IDUs in the Australian National AIDS and Injecting Drug Use Study (ANAIUS), which was conducted in 1989. The mean age of respondents was 28 years. The study found that less than 10% had never shared a N&S and that one quarter had not shared for years. However, one third had shared recently (ie within last weeks or days).⁷

A national survey of a sample of 872 IDUs in the latter half of 1994 found that 12% of respondents reported sharing of a

needle in the past month. It was noted that sharing most often involved a regular sexual partner and there were lower rates of sharing with younger respondents.⁸

Number of IDUs

There is interest whether it is possible to estimate the number of IDUs in a community by application of multipliers to the number of N&S sold. For instance, clients of NSEPs could be regularly surveyed about sharing and re-use of N&S to provide data that could be used to estimate the number of active IDUs.

For example regular surveys conducted by the Northern Territory AIDS Council of the clientele of the NSEP in Darwin provide details of a number of BBV related issues, including methods of disposal of used N&S, the use of new N&S and the transfer of non sterile injection equipment. A study in July 1998 of 238 distinct clients who attended the Darwin NSEP found that

"(a) majority of respondents (79.8%) reported having using a new needle and syringe for every injection in the past month. ... A majority of respondents (96.9%) reported never having used a syringe after someone else (and) a majority of respondents (94.6%) reported never having used a syringe before someone else."⁹ Similar results were found in a survey of 242 distinct clients in October and November 1998.¹⁰

The implementation of a similar surveys of purchasers of Fitpacks from chemists and the vending machine and clientele of NSEPs should be considered. Survey information would provide baseline data on changes in risk behaviour and also assist in identifying and enumerating specific risk groups.

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