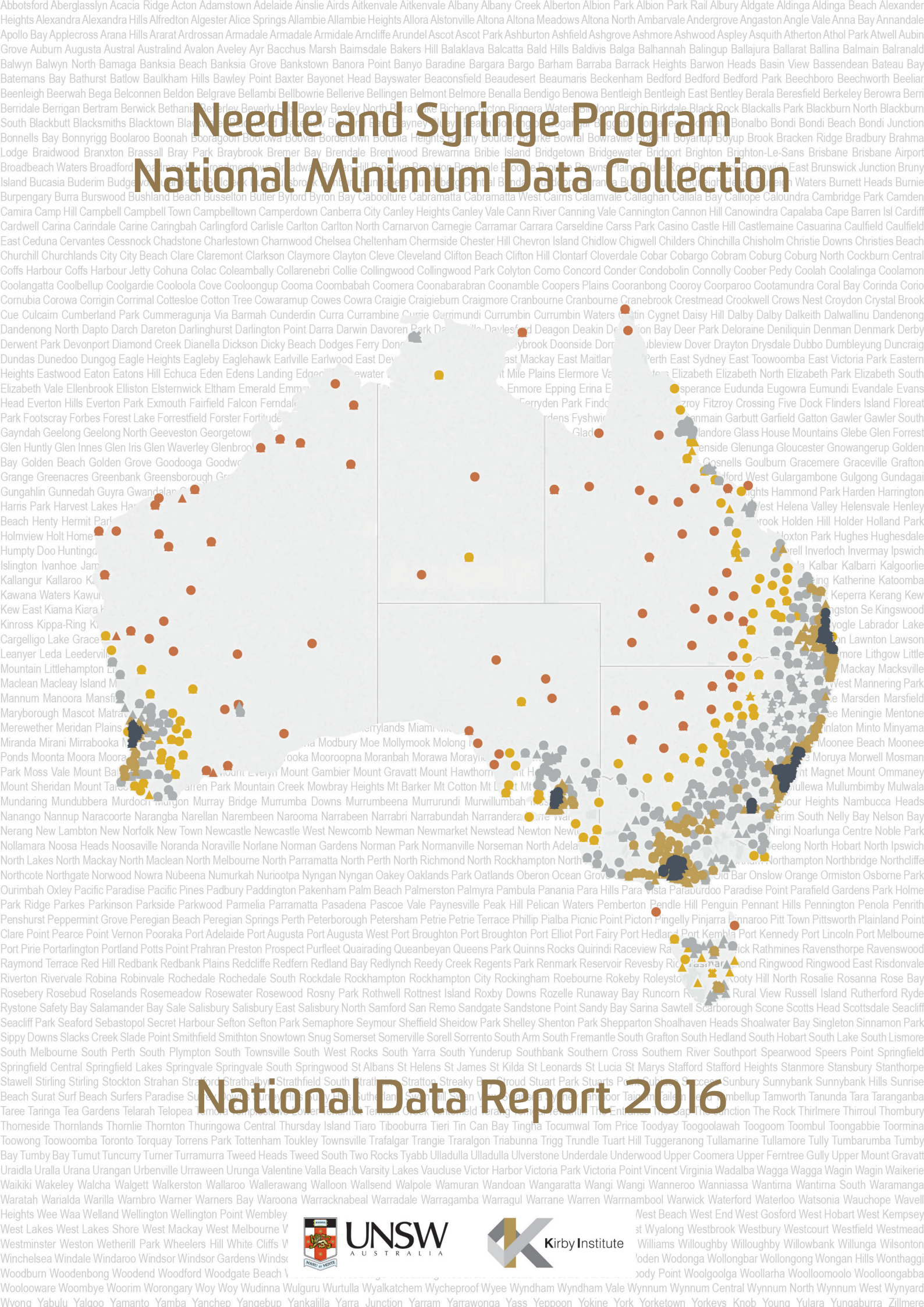


Needle and Syringe Program National Minimum Data Collection



National Data Report 2016



Needle Syringe Program National Minimum Data Collection

NATIONAL DATA REPORT 2016

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Acronyms

ABS	Australian Bureau of Statistics
ACT	Australian Capital Territory
AIHW	Australian Institute of Health and Welfare
AOD	Alcohol and Other Drugs
ASGS	Australian Statistical Geography Standard
BBV	Blood-borne Virus
GARPR	Global AIDS Response Progress Reporting
METeOR	Metadata Online Registry
NSMP	National surveillance and monitoring plan
NSP	Needle and syringe program
NSP NMDC	Needle and syringe program national minimum data collection
NSW	New South Wales
NT	Northern Territory
QLD	Queensland
OOS	Occasions of service
OST	Opioid substitution therapy
SA	South Australia
SDM	Syringe dispensing machine
PWID	People who inject drugs
TAS	Tasmania
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNSW	University of New South Wales
VIC	Victoria
WA	Western Australia

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Summary

Needle and syringe programs (NSPs) provide services to people who inject drugs (PWID*) and have operated in Australia since 1986. NSPs are a key component of current and previous National Strategies designed to reduce blood-borne viral (BBV) infections and their associated morbidity, mortality and personal and social impacts.

In 2015/16, there were 3,509 NSPs in Australia.

Australia's network of NSP services was comprised of 102 primary, 786 secondary and 2,321 pharmacy NSPs in 2015/16. These face to face services were supplemented by 300 syringe dispensing machines (SDMs).

The mix of NSP service delivery varied according to remoteness area, with outer regional and remote areas of Australia more reliant on service provision through secondary NSPs and SDMs than inner regional and major city areas. The majority of primary (n=63, 62%) and pharmacy (n=1,264, 54%) NSPs were located in major cities, while the majority of secondary NSPs (n=615, 78%) and SDMs (n=217, 72%) were located outside major cities in 2015/16.

There was a steady increase in the number of primary, secondary and pharmacy NSPs over the period 2000/01 to 2015/16, while the number of SDMs quintupled from 57 in 2001/02 to 300 in 2015/16. More than half (56%) of SDMs dispensed syringes at no cost to the consumer.

An estimated 755,000 occasions of service were provided at primary and secondary NSPs in 2015/16.

Based on 2,832 NSP occasions of service (OOS) recorded at primary and secondary NSPs that participated on the snapshot day in 2016, it is estimated that public sector NSPs provided 755,000 occasions of service in 2015/16.

Around one in two (45%) public sector NSP OOS involved provision of a health education intervention and one in ten OOS (9%) involved a referral to another health service or external agency.

Two thirds (66%) of NSP attendees at public sector NSP services on the snapshot day in 2016 were aged between 30 and 49 years of age. Young people (aged less than 25 years) comprised 7% of NSP attendees, while older people (aged 50 years or above) comprised 14% of NSP attendees. Three in four (73%) NSP attendees were male. Excluding OOS where Indigenous status was not reported, 14% of NSP attendees identified as Aboriginal and/or Torres Strait Islander.

Analgesics were the most commonly reported drugs injected in Australia in 2016.

Analgesics (heroin, other opioids and opioid substitution therapies) were the most commonly reported drugs injected on the snapshot day in 2016 (41%), followed by

stimulants and hallucinogens (predominantly methamphetamine, 37%) and anabolic agents and selected hormones (predominantly anabolic steroids, 8%).

Stimulants and hallucinogens were the most commonly reported drugs injected among young people (29%), while analgesics were the most commonly reported drugs injected among older people (53%).

In 2015/16, 49.4 million needles and syringes were distributed in Australia.

Over the past ten years, the number of needles and syringes distributed in Australia increased by 48%, with a 31% increase over the past 5 years.

Per capita needle and syringe distribution among the population aged 15-64 years also

increased over the past five years (from 2.7 syringes per annum in 2011/12 to 3.1 syringes per annum in 2015/16), following a period of stable per capita syringe distribution between 2000/01 and 2010/11 (range 2.3-2.5 syringes).

In 2015/16, an estimated 625 syringes were distributed per 'regular' PWID in Australia, the equivalent of 1.7 each per day. This is double the number of syringes per 'regular' PWID distributed in 2000/01, when less than one each per day was distributed (n=309). We estimate that syringe coverage reached 100% for the first time in 2011/12. However, in order to cover all injections with a sterile syringe, coverage of greater than 100% is required to allow for syringes utilised by non-regular PWID and syringes used for drawing up or failed injection attempts. Among regular PWID, syringe coverage was 115% in 2015/16.

** Note: The acronym PWID is used in this report to refer to both the plural and the singular – i.e. people who inject drugs and person who injects drugs.*

1. Introduction

Needle and syringe programs (NSPs) have been in operation in Australia since 1986 and are a key component of current and previous National Strategies for reducing blood borne viral (BBV) infections and sexually transmitted infections (STIs).^{1, 2} The aims of the National Strategies are to reduce the transmission of HIV, hepatitis B and hepatitis C, and STIs and to reduce the associated morbidity, mortality and personal and social impacts. Each National Strategy outlines a set of indicators for monitoring progress towards these aims, with reporting against these indicators through the National Surveillance and Monitoring Plan (NSMP) a key step in the implementation process.³ NSPs are also a key element of the harm reduction framework outlined in the National Drug Strategy.⁴

NSPs provide a range of services that aim to prevent the transmission of BBVs, including the provision of sterile injecting equipment, safer sex materials, information and education on reducing harms associated with injection drug use and referral to a range of health and welfare services. Injecting equipment provided by NSPs primarily includes sterile needles and syringes and containers for the safe disposal of used injecting equipment, and may also include other injecting equipment such as alcohol swabs and ampoules of sterile water.

In 2015, the Australian Government Department of Health engaged the Kirby Institute to develop a Needle and Syringe Program National Minimum Data Collection (NSP NMDC) to support the National BBV Strategies and to complement the annual Australian Needle and Syringe Program Survey (ANSPS) National Data Report.

All eight Australian States and Territories operate NSP services and collect a range of operational data, although there is varied levels of completeness and alignment across data elements. A consensus meeting of key stakeholders was held in Sydney in November 2015 to identify items for inclusion in the NSP NMDC and to investigate the potential for improving completeness and alignment over time. This inaugural NSP NMDC report provides a national summary of agreed data elements in relation to i) agency-level administrative data, ii) client-level OOS data and iii) needle and syringe distribution data.

Nationally collated data will also enable reporting against key indicators outlined in the NSMP that accompanies Australia's National HIV and National Hepatitis C Strategies and the Joint United Nations Programme on HIV/AIDS (UNAIDS) Global AIDS Response Progress Reporting (GARPR) framework. These indicators are stated as:

- Per capita number of needles and syringes distributed in the previous calendar year³
- Needles and syringes distributed per person injecting (GARPR 2015)⁵
- Needle and syringe programme sites⁵

It is anticipated that NSP NMDC reports will also be used for service monitoring and planning which will benefit the community of people who inject drugs (PWID) and provide public health benefits to the Australian population.

2. NSP Services

NSP outlet type

In Australia, NSP services are available through a range of outlet types.

Primary NSPs are dedicated to the provision of services to PWID. Primary NSPs dispense a wide range of sterile injecting equipment, offer needle syringe disposal services, provide information and education on a range of issues relating to injecting drug use and have the capacity to make referrals to other health and welfare services, including drug treatment, as required.

Secondary NSPs operate within existing health or community services that are not solely dedicated to the provision of services to PWID. Secondary NSPs may provide the same range of services as primary NSPs but typically have a limited capacity to deliver specialist services other than the dispensing of sterile injecting equipment and the provision of disposal facilities.

Pharmacy NSPs are community retail pharmacies that dispense needles and syringes to PWID. This includes free dispensing as part of a subsidised scheme, as well as supply of injecting equipment on a commercial basis. Community pharmacies that independently supply needles and syringes (where there is no association with a State/Territory NSP scheme) are not included in the NSP NMDC, as syringes may be provided only to people with medical conditions.

Syringe dispensing machines (SDMs) provide sterile injecting equipment via vending machines or dispensing chutes. SDMs dispense needles and syringes at no cost or for a small fee and typically operate in locations and at times when other NSP services are unavailable.

The NSP NMDC counted the number of NSPs as the total of primary + secondary + pharmacy + SDMs. If a primary or secondary NSP outlet also had SDM(s) these were counted as separate NSPs for the purpose of the NSP NMDC. For example a secondary outlet with two SDMs outside the building was counted as 1 x secondary and 2 x SDM.

In 2015/16, there were 3,509 NSPs operating nationally (Figure 2.1). Pharmacy NSPs were the most common outlet type nationally (n=2,321, 66%) and in all jurisdictions (Figure 2.2). Of the 1,188 public sector outlets operating nationally in 2015/16, 786 were secondary NSPs, 300 were SDMs and 102 were primary NSPs. Although there were significantly fewer primary outlets compared to secondary and pharmacy outlets, the comprehensive nature of services provided by primary NSPs offers opportunities for PWID to access health care and other services that are crucial to the prevention of blood-borne viruses and the reduction of drug-related harms to individuals and communities.

Figure 2.1 National NSP services (%) by outlet type in 2015/16

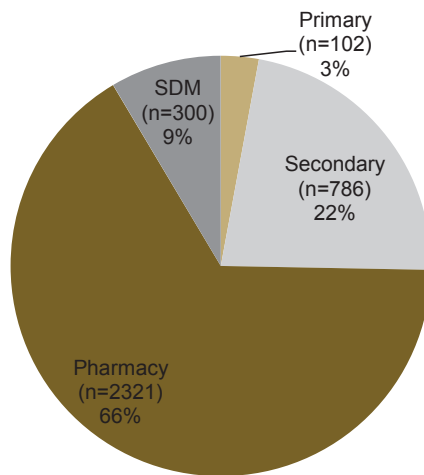
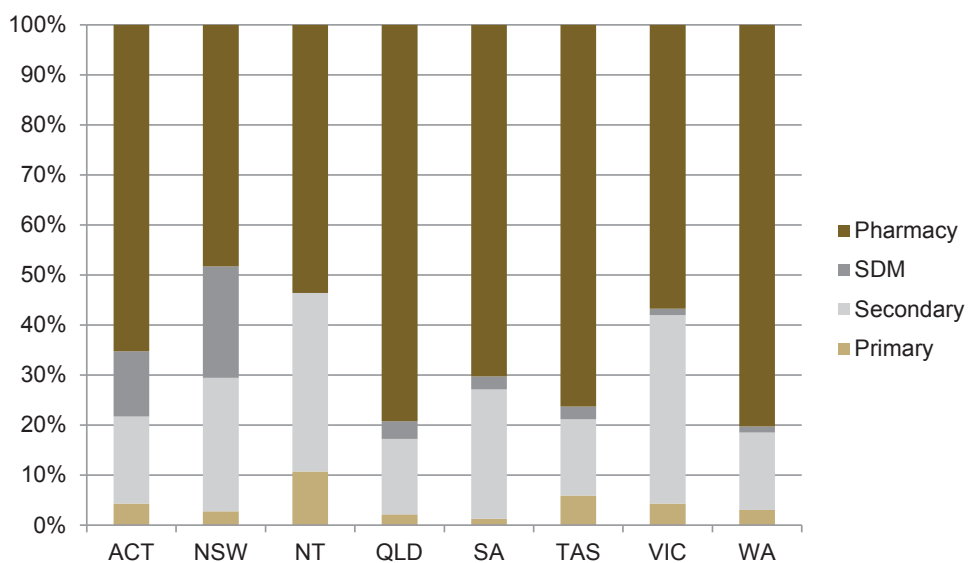


Figure 2.2 Jurisdictional NSP services (%) by outlet type in 2015/16



All jurisdictions operate primary and secondary NSPs. These NSPs predominantly operate as fixed site services, although 14 primary and 9 secondary NSPs operate outreach services without operating from a fixed site. Some primary NSPs (n=43) operate multiple modes of service delivery, including a combination of fixed site, mobile, outreach and/or SDM services. A total of 179 secondary outlets across Australia operate SDMs.

SDMs ensure after-hours access to sterile needles and syringes. Nationally, there were 300 SDMs operating in Australia in 2015/16; however the number of SDMs varied substantially between jurisdictions. One jurisdiction did not operate any SDMs in 2015/16 and among the remaining jurisdictions, the number of SDMs ranged from 3 to 239. SDMs predominantly dispense combined 1ml needles and syringes, although a small minority of SDMs dispense larger

volume syringes and detachable needles. Nationally, 56% of SDMs dispensed needles and syringes at no cost to the consumer in 2015/16. Among the remaining SDMs, the majority (98%) required a consumer payment of between \$2.00 and \$4.00.

There was a steady increase in the number of all types of NSP outlets over the period 2000/01 to 2015/16 (Table 2.1). This included a 40% increase in the number of primary NSPs (from 73 to 102), a 10% increase in the number of secondary NSPs (from 716 to 786) and a 23% increase in the number of pharmacy NSPs (from 1884 to 2321). Over the same period, the number of SDMs operating in Australia quintupled, from 57 in 2000/01 to 300 in 2015/16. This was predominantly due to an expanded number of SDMs within jurisdictions already operating SDMs, although two jurisdictions commenced operation of SDMs between 2007/08 and 2015/16.

Table 2.1 Number of NSP services nationally by type, 2000/01, 2007/08 and 2015/16

	2000/01	2007/08	2015/16
Primary NSP	73	85	102
Secondary NSP	716	745	786
SDM	57	118	300
Pharmacy	1884	1934	2321
Total	2730	2882	3509

Note: Data for 2000/01 and 2007/08 were obtained from 'Return on investment in needle and syringe programs in Australia'¹⁷ and 'Return on investment 2: Evaluating the cost-effectiveness of needle and syringe programs in Australia'¹⁶ respectively.

Geographic coverage

The Australian Bureau of Statistics (ABS) Australian Statistical Geography Standard (ASGS)⁶ provides a geographical standard for the publication of statistics by relative remoteness. The Australian Remoteness Areas categories are 0) Major Cities, 1) Inner Regional, 2) Outer Regional, 3) Remote, 4) Very Remote, 5) Migratory/Offshore/Shipping.

As shown in Figure 2.3, the mix of NSP outlet types varied according to geographic region by remoteness area. More than half (n=1,264, 54%) of Australia's 2,321 pharmacy NSPs were located in major cities with pharmacies comprising the majority (80%) of NSP outlets in this ASGS area. Pharmacy NSPs also comprised the majority of NSPs in inner regional (n=503, 69%) and outer regional

(n=428, 52%) areas, however significantly fewer pharmacy NSPs were located in remote (n=84, 41%) and very remote (n=42, 25%) areas of Australia. Conversely, the proportion of secondary outlets increased with remoteness area, with secondary outlets the most common NSP outlet type in remote (n=97, 47%) and very remote (n=104, 63%) areas. Similarly, the proportion of SDMs increased with remoteness area, with around three quarters (n=217, 72%) of Australia's 300 SDMs located outside major cities. Figures 2.4 and 2.5 provide visual representations of the geographic coverage of primary, secondary, pharmacy and SDM NSP outlets by remoteness areas in Australia in 2015/16.

Figure 2.3 National NSPs (%) by outlet type and remoteness area in 2015/16

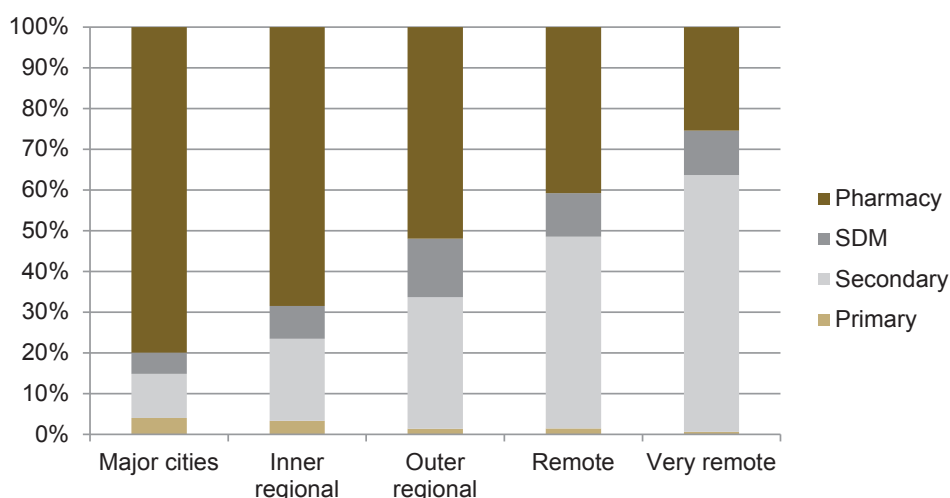
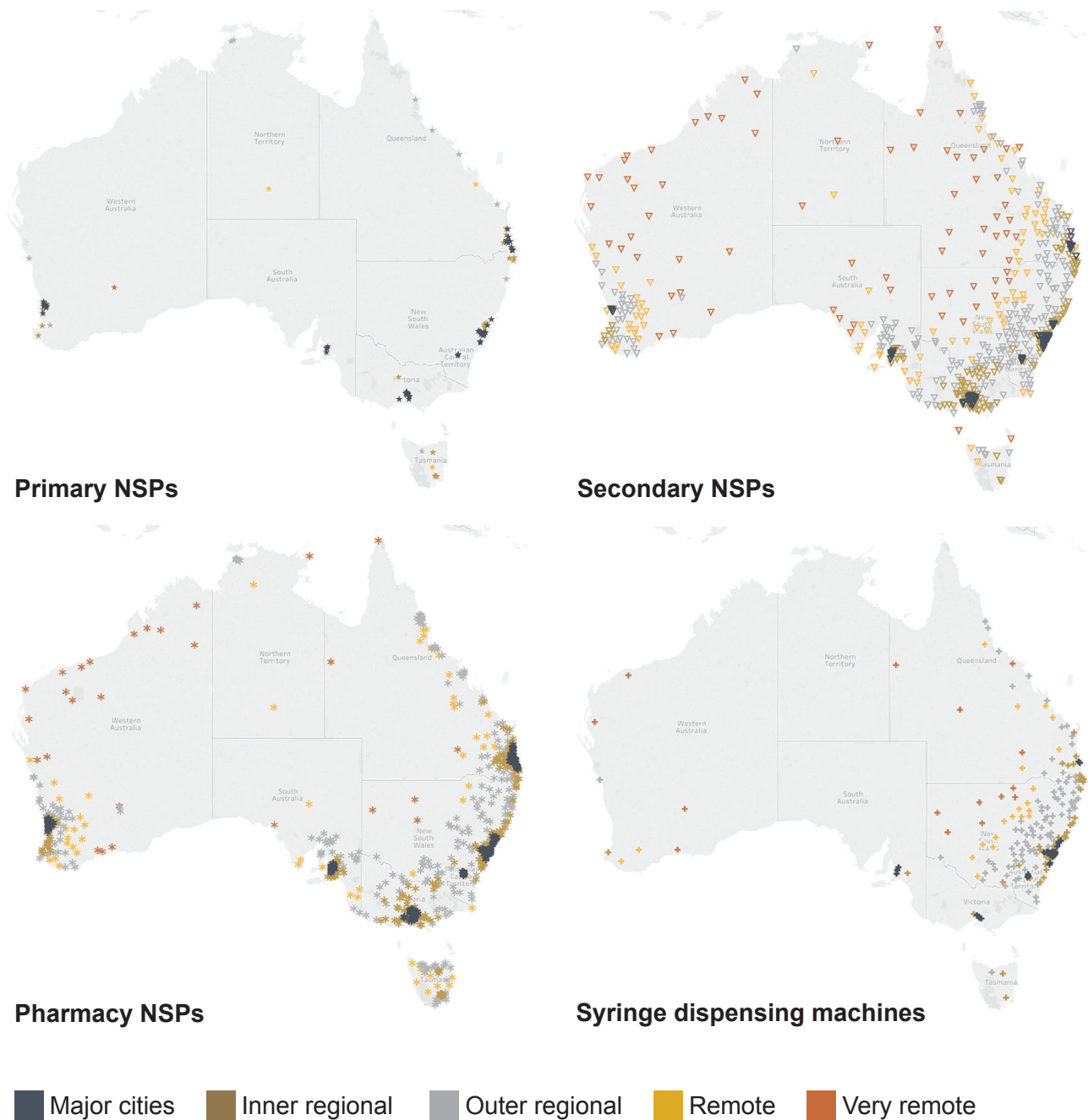
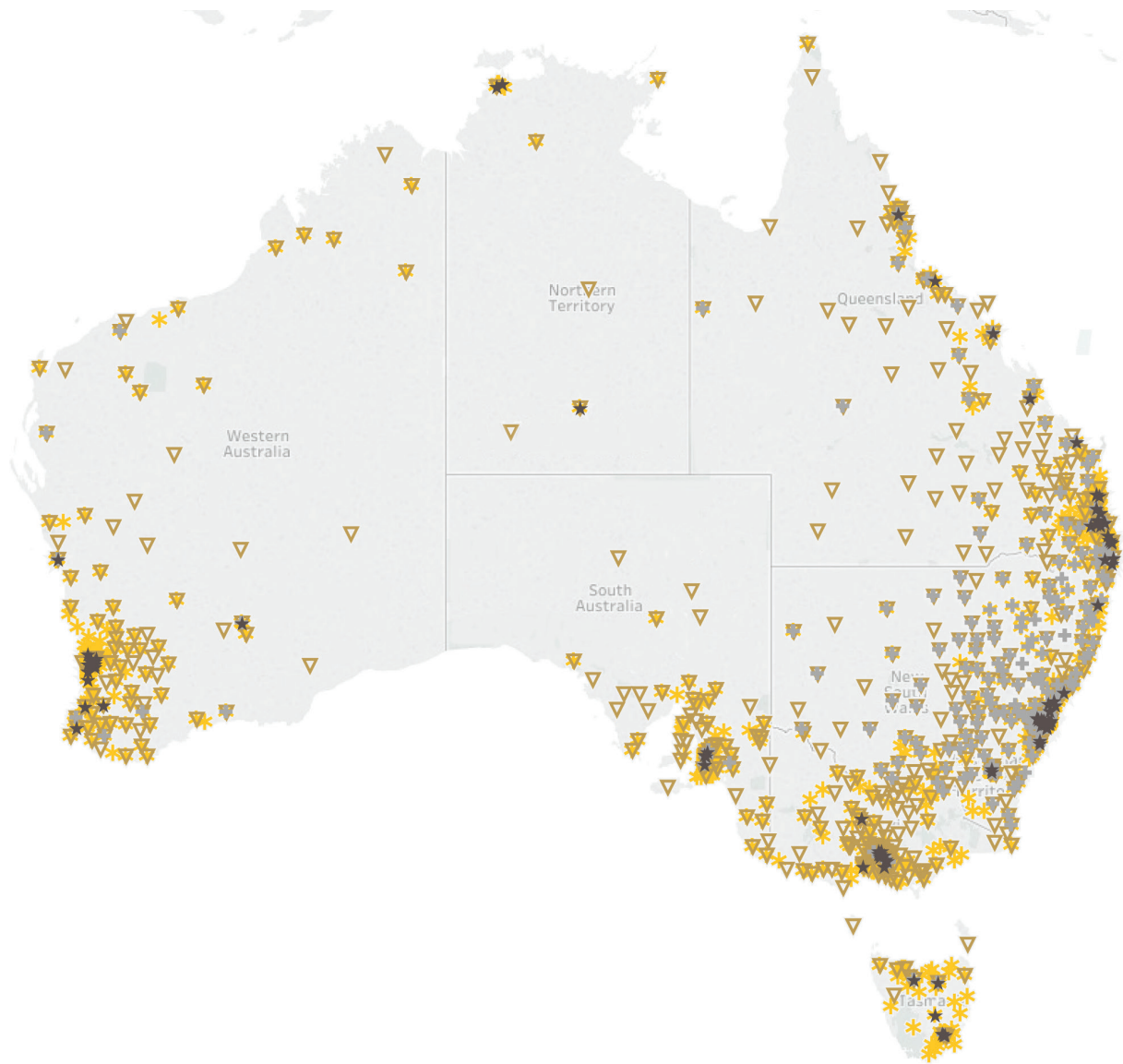


Figure 2.4 National maps of NSP services by outlet type and remoteness area in 2015/16



Note: some individual outlets are obscured by others in close proximity

Figure 2.5 National map of NSP services by outlet type in 2015/16



★ Primary NSPs ▽ Secondary NSPs * Pharmacy NSPs + Syringe dispensing machines

Note: some individual outlets are obscured by others in close proximity

3. NSP Attendees and Service Provision

NSP occasions of service

In Australia, data collected for each NSP client occasion of service (OOS) currently varies substantially. Some jurisdictions do not routinely collect client-level OOS data, jurisdictional data collection methods and definitions are not nationally aligned and data collection varies according to outlet type. For example, not all secondary outlets collect client-level OOS data and client-level data is not collected from SDMs or pharmacy NSPs.

Despite these limitations, the NSP NMDC consensus meeting recommended collection of client-level OOS data and agreed on four client-level OOS data elements (age, gender, Indigenous status and drug injected) and two service-level OOS data elements (health education interventions and referrals provided) for inclusion in the NSP NMDC. Jurisdictional client-level OOS data was collected on a

nominated snapshot day during the last week of February 2016, with the exception of one jurisdiction where February client-level OOS data were unavailable and data were subsequently collected on an additional snapshot day in June 2016. It should be noted that in 2016 client-level OOS data were not collected from every NSP outlet in all jurisdictions.

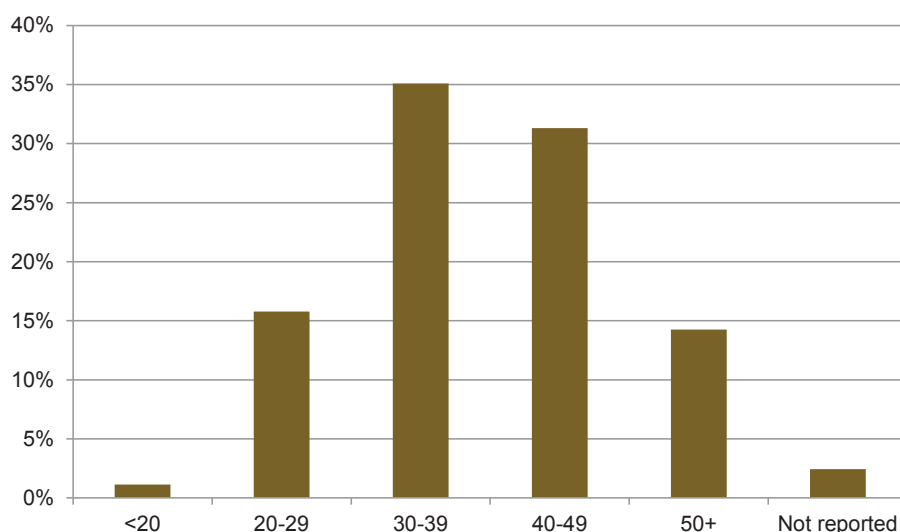
Nationally, there were 2,832 OOS recorded at participating public sector NSPs in Australia on the nominated snapshot day in 2016. After accounting for NSPs that provide services on weekends, an estimated 755,000 public sector NSP OOS were provided in 2015/16. It should be noted that data on client demographic characteristics and drug use was not provided for 207 public sector NSP OOS and these OOS were excluded from further analysis.

Age

The ABS defines 'age' as 'a person's age at last birthday'⁷. This data element is calculated from date of birth, however if date of birth is not provided, stated age is used. The ABS standard is that 'age' is reported in single years (AGEP); however age may also be reported in five (AGE5P) and ten (AGE10P) year age groups. All jurisdictions collected 'age' as a data element. Although five jurisdictions collected stated age in single years (AGEP), three collected age group and the minimum data available to report in the NSP NMDC is ten year age groups (AGE10P). It should also be noted that there was some misalignment with AGE10P and the age group categories collected in two jurisdictions and some recoding was necessary (see Appendix A: Methodological Notes).

Approximately one third (35%) of OOS at public sector NSPs on the 2016 snapshot day involved NSP attendees aged 30-39 years and a further third (31%) were aged 40-49 years (Figure 3.1). Fourteen percent of OOS involved NSP attendees who were aged 50 years or older and sixteen percent involved NSP attendees aged 20-29 years, with one percent aged less than 20 years. Young people (aged less than 25 years) comprised seven percent (n=190) of OOS at public sector NSPs nationally in 2016.

Figure 3.1 National OOS (%) by age group in 2016

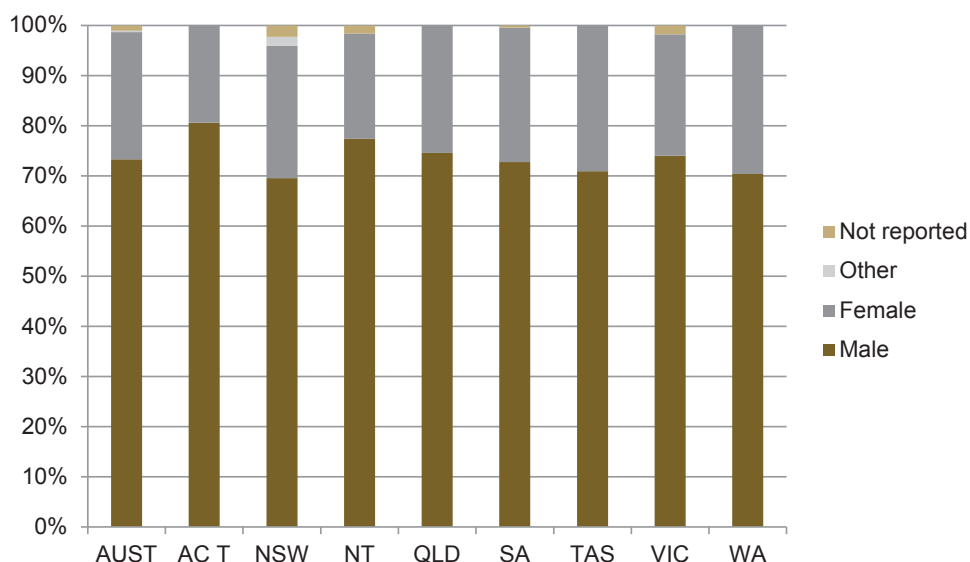


Gender

The ABS released a revised Standard for Sex and Gender Variables⁸ in February 2016. The 'Sex' classification system is based on biological characteristics at birth, whereas 'Gender' takes into consideration an individual's chosen identity within society and allows people to identify as gender diverse. Although jurisdictional data collections for this element are not universally aligned (see Appendix A: Methodological notes), the 2016 NSP NMDC reports 'Gender' according to the 2016 ABS standard where permissible values are: 1) Male, 2) Female and 3) Other.

On the snapshot day in 2016, almost three quarters (73%) of NSP OOS involved male NSP attendees nationally (Figure 3.2). Male NSP attendees comprised between 70% and 81% of NSP OOS in all jurisdictions. A minority (0.3%) of NSP OOS involved people who identified their gender as 'other'. Among the 190 young people (aged less than 25 years), the majority (72%) were young men.

Figure 3.2 National and jurisdictional OOS (%) by gender in 2016



Indigenous status

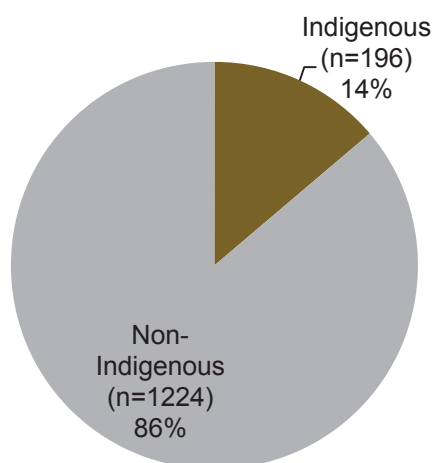
The Australian Institute of Health and Welfare (AIHW) Metadata Online Registry (METeOR) Health Standard (2015)⁹ for collection of Indigenous status is aligned with the ABS Standard for reporting on Indigenous Status¹⁰, which defines Indigenous status as “Whether a person identifies as being of Aboriginal or Torres Strait Islander origin”.

The permissible values are: 1) Aboriginal but not Torres Strait Islander origin, 2) Torres Strait Islander but not Aboriginal origin, 3) Both Aboriginal and Torres Strait Islander origin, 4) Neither Aboriginal nor Torres Strait Islander origin. Six of the eight jurisdictions currently collect client-level OOS data on Indigenous status, although data collection

is not aligned to the ABS standard in one of these jurisdictions. The minimum reporting in the 2016 NSP NMDC is Indigenous status as a binary response; ‘Yes, Aboriginal and/or Torres Strait Islander origin’ or ‘Neither Aboriginal nor Torres Strait Islander origin’.

Among the six jurisdictions where client-level OOS data on Indigenous status was collected and excluding OOS where Indigenous status was not reported, 14% (n=196) of NSP OOS on the snapshot day involved NSP attendees who identified as Aboriginal and/or Torres Strait Islander (Figure 3.3).

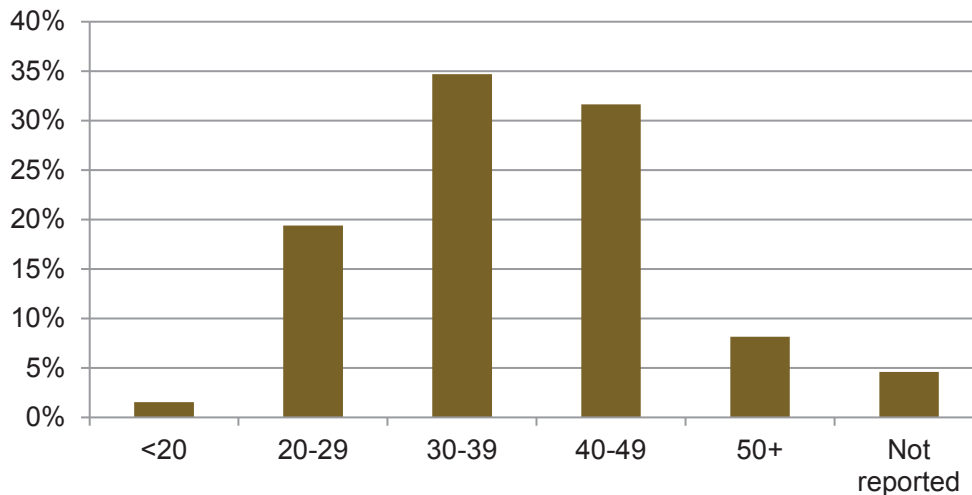
Figure 3.3 National OOS (%) by Indigenous status in 2016



Among the OOS involving NSP attendees who identified as Aboriginal and/or Torres Strait Islander, just over one third (n=68, 35%) were aged 30-39 years and just under one third

(n=62, 32%) were aged 40-49 years (Figure 3.4). Almost one in five (n=38, 19%) were aged 20-29 years, with 8% (n=16) aged 50 years or older and 2% (n=3) aged less than 20 years.

Figure 3.4 National Indigenous NSP attendees (%) by age group in 2016



Note: Two jurisdictions did not collect data on Indigenous status in 2016

Drugs injected

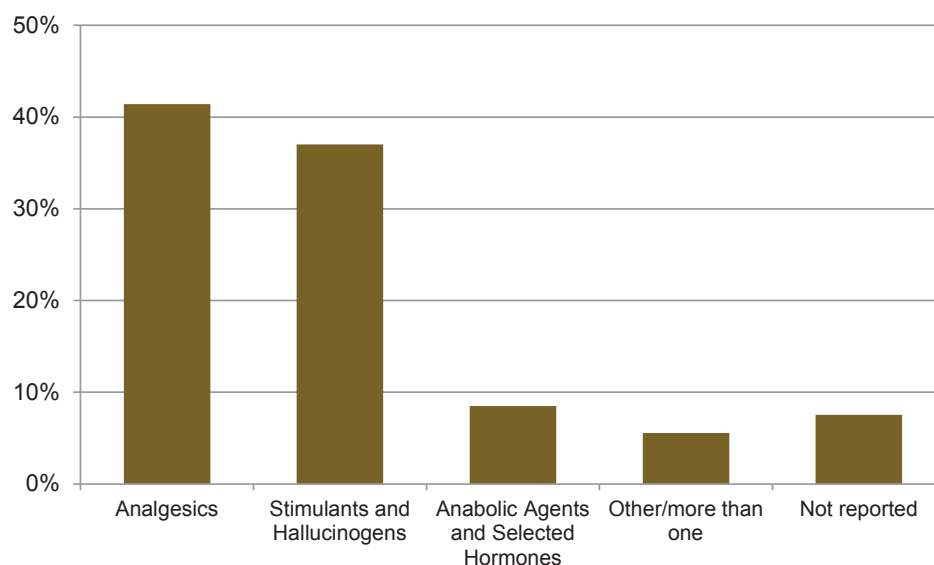
The ABS 1248.0 Australian Standard Classification of Drugs of Concern, Second Edition, 2011¹¹ lists 'Drugs of Concern' in categories of Broad groups, Narrow groups and Base level units. The 2016 NSP NMDC reports on 'drug injected' using combined data comprising 'Last drug injected' (4 jurisdictions) and 'Drug about to be injected' (3 jurisdictions). One jurisdiction does not currently collect client-level OOS data on the type of substance injected.

Figure 3.5 illustrates the breakdown of drugs injected by NSP attendees according to ABS Drugs of Concern Broad Groups. Analgesics

were the most common class of drugs injected nationally (n=687, 41%), followed by Stimulants and Hallucinogens (n=614, 37%) and Anabolic Agents and Selected Hormones (n=141, 9%). Ninety two (6%) OOS involved people who reported injecting more than one drug subtype.

Data on ABS Drugs of Concern at Base level units for the Broad Groups 'Analgesics', 'Stimulants and Hallucinogens' and 'Anabolic Agents and Selected Hormones' were either not collected or not well defined in most jurisdictions and were unable to be reported nationally.

Figure 3.5 National OOS drug injected (%) by ABS Drugs of Concern Broad Groups in 2016



Note: One jurisdiction did not collect data on drug injected in 2016

Young people

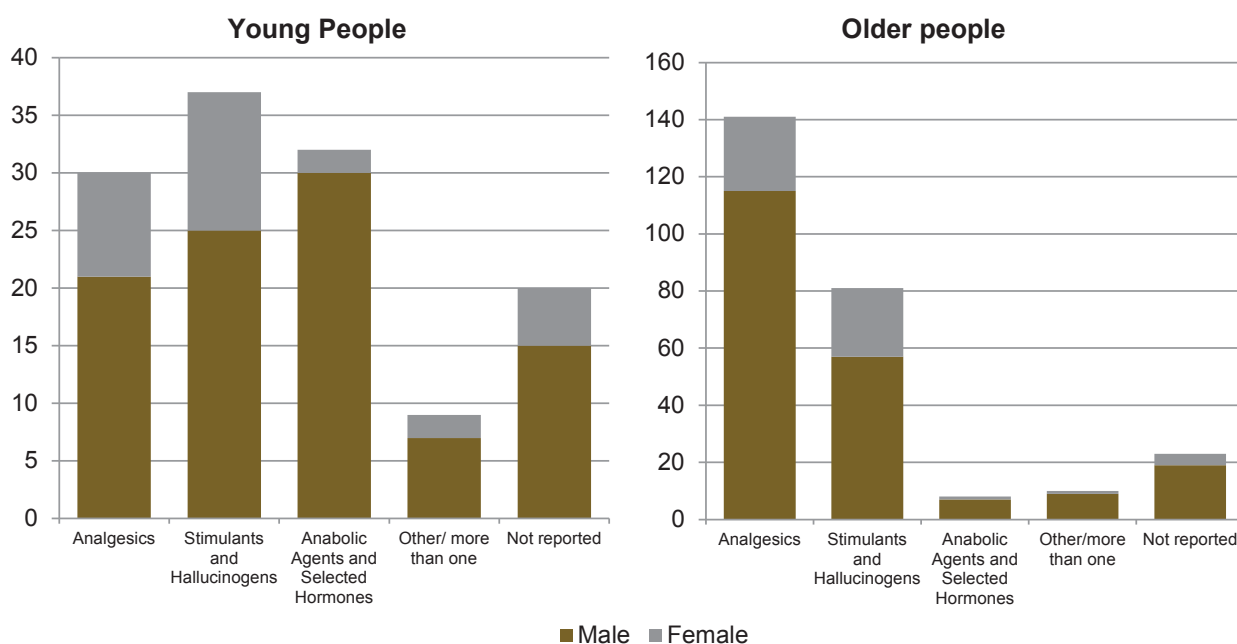
Among young people (aged less than 25 years) attending NSPs on the snapshot day and excluding the jurisdiction that did not collect data on drugs injected, 29% of OOS involving young people reported injecting Stimulants and Hallucinogens, 25% reported injecting Anabolic Agents and Selected Hormones and 23% reported injecting Analgesics. A minority of OOS involved young people (7%) who reported injecting other drugs or more than one drug and 16% did not report drug(s) injected.

As previously stated, the majority of OOS involving young people in 2016 (72%) involved young men, with men comprising 70% of young people who injected Analgesics, 66% of young people who injected Stimulants and Hallucinogens and 94% of young people who injected Anabolic Agents and Selected Hormones (Figure 3.6).

Older people

Among OOS involving older people (aged 50 years or more) and excluding the jurisdiction that did not collect data on drugs injected, the majority (54%) of older people reported injecting Analgesics, 31% reported injecting Stimulants and Hallucinogens and 3% reported injecting Anabolic Agents and Selected Hormones. Around one in ten (9%) older people did not report the drug injected and 4% reported injecting more than one drug. Men comprised the majority of OOS that involved older people in all ABS Drugs of Concern Broad groups (Figure 3.6).

Figure 3.6 National OOS among young people (aged <25 years) and older people (aged ≥50 years) by gender and drug injected in 2016



Health education interventions provided to NSP attendees

Primary NSP services provide a range of health education interventions to a wide range of external agencies and to the general community (for example information sessions on sharps disposal). These interventions were not included as agreed minimum data elements at the NSP NMDC stakeholder consensus meeting in 2015 and are beyond the scope of this report.

Primary and secondary NSP services provide a range of health education interventions to PWID who attend their services. The NSP NMDC consensus meeting agreed that the collection of information on the type of health education and other interventions provided to PWID was of value. However, there is currently considerable inconsistency in the sub-type of health education interventions provided and no national standard that defines the range of variables within this data element.

The minimum possible reporting for this data element is the provision of a NSP health education intervention as a binary response: 'Yes, health education intervention provided' or 'No, health education intervention not provided'. The NSP NMDC will investigate the development of a national standard for this data element for future data collection and reporting.

Almost one in two (45%) NSP OOS included the provision of a health education intervention. Based on available data, the majority (69%) of health education interventions provided at NSP services related to safer injection practices, including prevention of BBV transmission and vein care.

Referrals

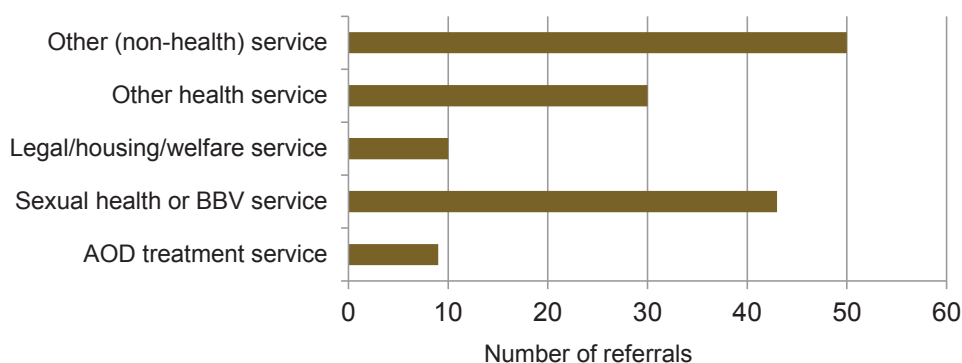
Primary and secondary NSP services also provide attendees with referrals to a range of health, welfare, legal and other agencies. The AIHW Data Dictionary 2007¹² 'Referral destination from needle and syringe program' has the following categories: 1) Other NSP outlet, 2) Medical practitioner, 3) Hospital, 4) Mental health care service, 5) Sexual health service, 6) Hepatitis clinic, 7) HIV/AIDS clinic, 8) Legal service, 9) Accommodation service, 10) Alcohol and other drug treatment service, 11) Other service.

All jurisdictions collect this data element. Data collections are closely aligned with the AIHW NSP Data Dictionary, however three jurisdictions do not collect data at the level of detail specified by the AIHW Data Dictionary (for example referrals to hepatitis and HIV/AIDS clinics are combined and collected as referrals to BBV services). Based on the

data available from five jurisdictions in 2016, the minimum possible referral destinations that the NSP NMDC can report are referrals to 1) Sexual health or BBV services (referral for sexual health, HIV or HCV testing, care or treatment), 2) Legal, housing or welfare services 3) Alcohol and other drug treatment services, 4) Other health services (medical practitioner, hospital, mental health care service) and 5) Other (non-health) services.

On the snapshot day in 2016, around one in ten (9%) NSP OOS involved a referral. Almost one third (n=43, 30%) of referrals were made to sexual health or BBV services, 21% (n=30) to other health services, 7% (n=10) to legal, housing or welfare services and 6% (n=9) to alcohol and other drug (AOD) treatment services. One third (n=50, 35%) of referrals were made to other non-health services (Figure 3.7).

Figure 3.7 Number of referrals from NSPs nationally by referral destination in 2016



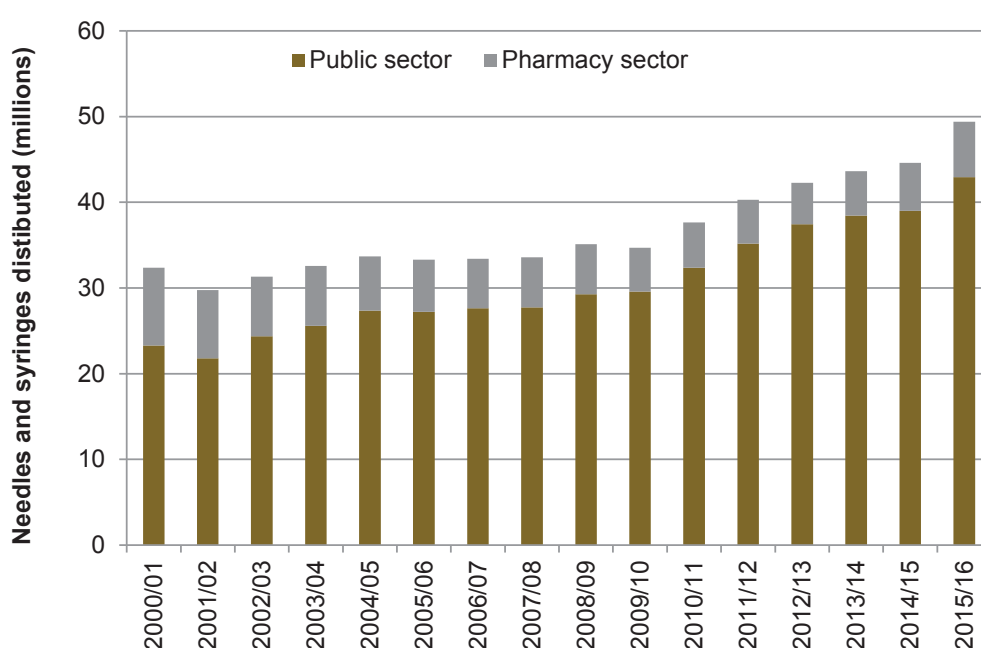
Note: Breakdown of referrals by subtype is not available for three jurisdictions

4. Needle and Syringe Distribution

The NSP NMDC used the AIHW¹² data definition for 'Injecting Equipment Distributed' which defines a) combined needle and syringe, b) syringe without needle, c) needle without syringe and d) other¹³. It should be noted that the NSMP requires a count of the total number of 'needles and syringes' distributed, in other words a count of 'units of injecting equipment' comprising both a needle and a syringe. GARPR requires a count of the total number of syringes distributed (excluding needles distributed without syringes). The NSP NMDC has therefore calculated the total number of needles and syringes distributed (units of injecting equipment) using the formula a) combined needle and syringe + b) syringe without needle.

Nationally, 49.4 million needles and syringes were distributed in Australia in the financial year 2015/16 (Figure 4.1). This represents an increase of 23% over the five year period 2011/12 to 2015/16 and an increase of 48% over the ten year period from 2006/07 to 2015/16. The majority of needles and syringes were distributed through public sector NSPs in all years (range 72% to 87%). The proportion of needles and syringes dispensed through the pharmacy NSP sector was stable at 11% to 13% nationally in all of the past five years (2011/12 to 2015/16). This was considerably lower than in previous years with the pharmacy sector accounting for 28% of national needle and syringe distribution in 2000/01 and 17% in 2006/07.

Figure 4.1 National needle and syringe distribution by public and pharmacy sector NSP, 2000/01-2015/16

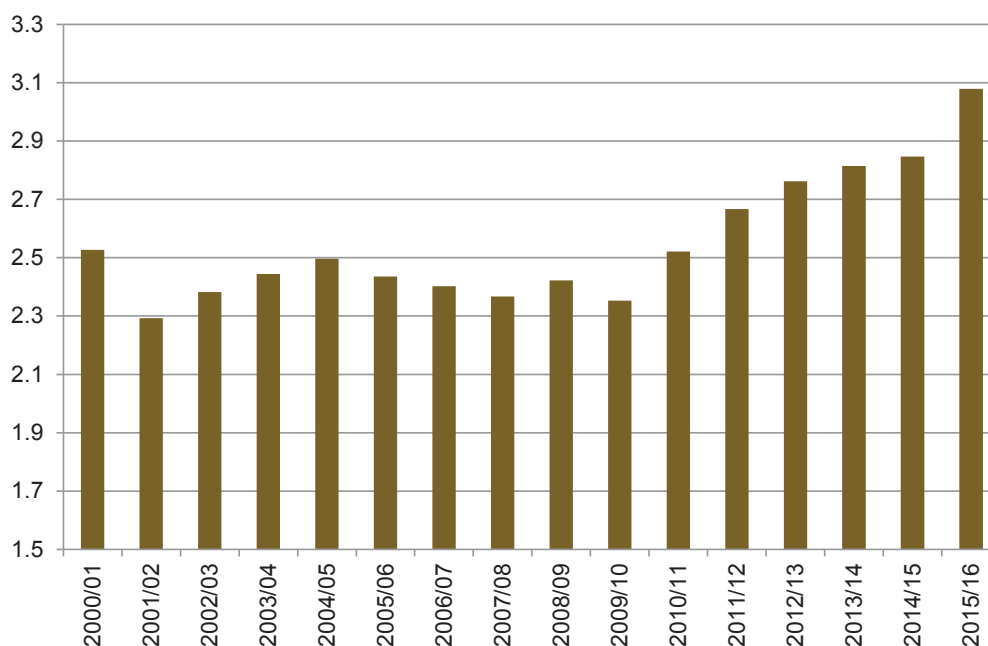


Per capita needle and syringe distribution

Per capita needle and syringe distribution is calculated by dividing the number of needles and syringes distributed by the Australian population aged 15-64 years. The denominator excludes children (aged less than 14 years) and older people (65 years and older) as injection drug use is less prevalent in these age groups. Calendar year ABS population data was converted to financial year by calculating the

mean of the population estimate in consecutive calendar years. In 2015/16, the per capita rate of needles and syringes distributed nationally was 3.1, with a 15% increase observed over the five year period from 2011/12 to 2015/16 (Figure 4.2 and Table 4.1). Over the period 2000/01 to 2010/11 the per capita rate of needles and syringes distributed was stable (range 2.3 to 2.5).

Figure 4.2 National per capita needle and syringe distribution, 2000/01-2015/16



Note: Denominator is population aged 15-64 years

Table 4.1 National syringe distribution and per capita syringes distributed, 2000/01-2015/16

Year	Needle and syringe distribution (millions)			Per capita needles/syringes
	Public	Pharmacy	Total	
2000/01	23.3	9.1	32.4	2.5
2001/02	21.8	8.0	29.8	2.3
2002/03	24.4	6.9	31.3	2.4
2003/04	25.6	7.0	32.6	2.4
2004/05	27.4	6.3	33.7	2.5
2005/06	27.2	6.1	33.3	2.4
2006/07	27.6	5.8	33.4	2.4
2007/08	27.8	5.8	33.6	2.4
2008/09	29.3	5.8	35.1	2.4
2009/10	29.6	5.1	34.7	2.4
2010/11	32.4	5.3	37.6	2.5
2011/12	35.2	5.1	40.3	2.7
2012/13	37.4	4.8	42.3	2.8
2013/14	38.5	5.2	43.6	2.8
2014/15	39.0	5.6	44.6	2.8
2015/16	42.9	6.5	49.4	3.1

Note: Denominator for per capita syringes is population aged 15-64 years

Syringe distribution per PWID

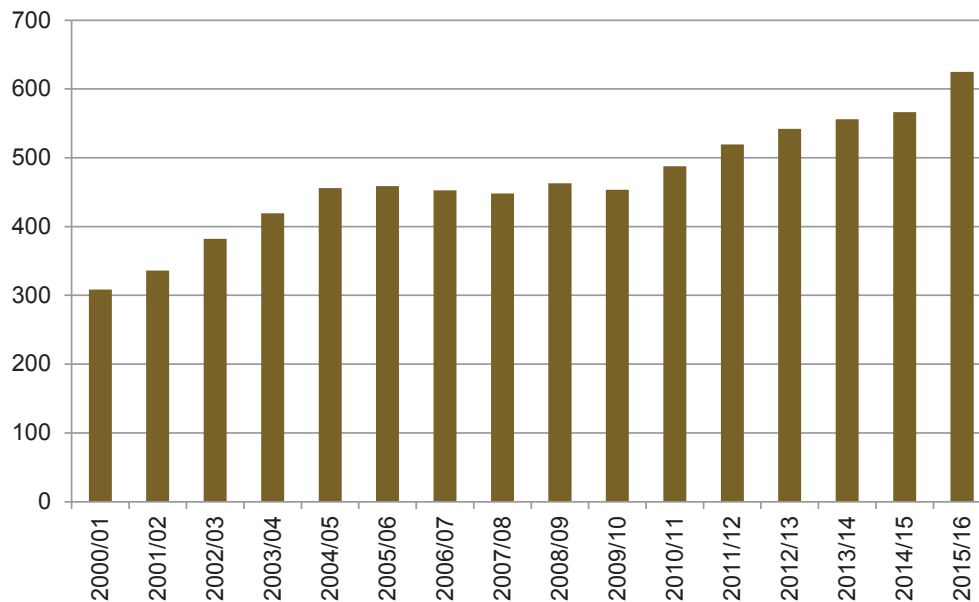
The UNAIDS GARPR framework⁵ includes 'Needles and syringes distributed per person injecting' as one of the key indicators for reporting on the Global AIDS Response. UNAIDS defines 'low' syringe coverage as <100 syringes per PWID per annum, 'medium' coverage as 100-200 syringes per PWID per annum and 'high' coverage as >200 syringes per PWID per annum¹³.

Annual estimates of the Australian PWID population size over the period 1970 to 2005 were published in 2007¹⁴. PWID were defined as people who had injected in the previous 12 months and included 'regular' PWID (defined as people who had injected for at least 12 months, an average of 10 times per month, with injecting in most months) and 'occasional' PWID (defined as people who injected at least once in the last 12 months, but not frequently enough to be considered a regular PWID).

The NSP NMDC used the methodology developed by Razali et al¹⁴ and a range of updated data sources to estimate trends in the size of the 'regular' PWID population in Australian from 2006 to 2016. Data sources used to determine the relative change in the population of 'regular' PWID since 2005 included prevalence of lifetime and recent injection, illicit drug arrests (amphetamine-type stimulants, heroin and other opioids and cocaine), heroin and steroid seizures, accidental deaths due to opioids and opioid-related hospital admissions and

separations. Further details are included in the Methodological Notes (Appendix A). Calendar year PWID population estimates were converted to financial year estimates by calculating the mean of the estimate in consecutive calendar years. It was estimated that the Australian population of 'regular' PWID declined by 25% over the period 2000/01 (n=104,976) to 2015/16 (n=79,055). However, the population of 'regular' PWID increased by 10% over the past decade, from a low of 72,558 in 2005/06 to 79,055 in 2015/16 (Table 4.2).

We calculated the mean number of syringes per 'regular' PWID by dividing the number of syringes distributed by the estimated size of the 'regular' PWID population in each financial year. As shown in Figure 4.3, syringe coverage has doubled since 2000/01. We estimate that 'regular' PWID received more than one syringe each per day in 2015/16 compared to 2000/01 when less than one syringe per PWID per day was distributed.

Figure 4.3 National syringe coverage per 'regular' PWID, 2000/01-2015/16**Table 4.2 National syringe distribution per 'regular' PWID, 2000/01-2015/16**

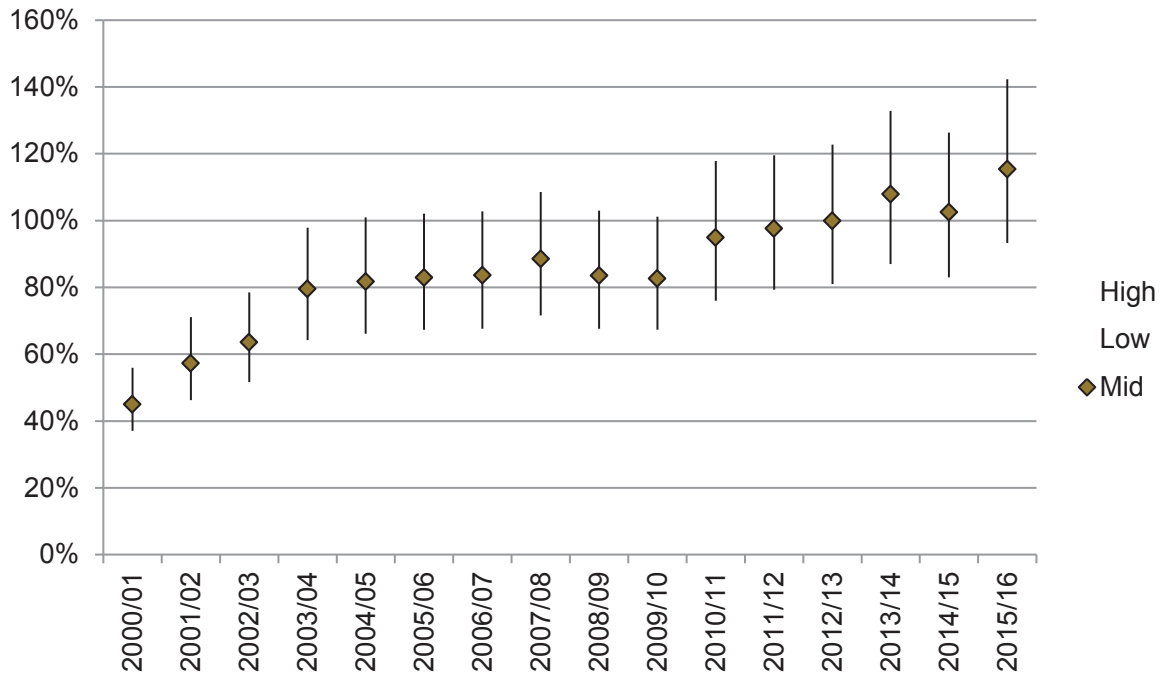
Year	Number of 'regular' PWID	Syringes distributed (millions)	Syringes per 'regular' PWID
2000/01	104,976	32.4	309
2001/02	88,647	29.8	336
2002/03	81,882	31.3	382
2003/04	77,788	32.6	419
2004/05	73,898	33.7	456
2005/06	72,558	33.3	459
2006/07	73,802	33.4	453
2007/08	74,980	33.6	448
2008/09	75,848	35.1	463
2009/10	76,537	34.7	453
2010/11	77,109	37.6	488
2011/12	77,598	40.3	519
2012/13	78,025	42.3	542
2013/14	78,404	43.6	556
2014/15	78,745	44.6	566
2015/16	79,055	49.4	625

It should be noted that while calculating the mean number of syringes per PWID in this manner is a useful tool to monitor trends over time, it does not take into account frequency of injection at the individual level. In order to assess the extent to which demand for sterile syringes was met, additional analyses that took frequency of injection into account were conducted. We used results from the Australian NSP Survey¹⁵ and assumptions from the *Return on Investment 2: Evaluating the cost-effectiveness of needle and syringe programs in Australia report*¹⁶ to estimate the number of sterile syringes that would be required to cover all injections among 'regular' PWID where one sterile syringe was used per injection.

We used data on frequency of injection from the Australian NSP Survey¹⁵ to estimate the number of syringes required by 'regular' PWID to cover all injections. The following assumptions were used: people who injected >3 times per day required a mean of 5 syringes per day (range 4-6 syringes), people who injected 2-3 times per day required a mean of 2.5 syringes per day (range 2-3 syringes), people who injected once per day required one syringe per day, people who injected more than weekly but not daily required a mean of 3.5 syringes per week (range 2-6 syringes per week) and people who injected monthly but not weekly required a mean of 0.5 syringes per week (range 0.3-0.9 syringes per week).

We used these assumptions to calculate the proportion of injections covered by a sterile syringe. Figure 4.4 shows the mid-point and lower/upper syringe coverage estimate over the period 2000/01 to 2015/16. Syringe coverage increased over time, with the mid-point estimate reaching 100% for the first time in 2012/13. It should be noted that syringe coverage of greater than 100% is required to allow for syringes utilised by non-regular PWID and syringes that are not used for an injection (for example drawing up needles/syringes or failed injection attempts). Among 'regular' PWID, syringe coverage was 115% in 2015/16.

Figure 4.4 Mid-point, upper and lower estimates of the proportion of injections covered by a sterile syringe among ‘regular’ PWID, 2000/01-2015/16



5. Future Directions

This is the inaugural National Data Report for the NSP NMDC project. This report investigated temporal trends in the number and type of NSP services (Section 2) and needle and syringe distribution (Section 4). The NSP NMDC will publish annual reports over the next five years. The project will be in a position to report temporal trends in NSP attendees and service provision (Section 3) in future years. The project will also liaise with the Australian Government Department of Health to report on NSMP and GARPR indicators, including converting data from financial to calendar years as required.

As discussed in Appendix A (Methodological Notes), there were some issues with alignment and completion of some data elements, most notably in relation to client-level OOS data elements (Section 3, NSP attendees and service provision). The NSP NMDC project and key stakeholders were aware of these issues when NSP NMDC data elements were agreed in 2015, with a view to investigating opportunities to improve alignment and completion over time. With this in mind, a NSP NMDC Data Dictionary will be developed in early 2017 to guide future work. The NSP NMDC Data Dictionary will incorporate existing ABS and AIHW data definitions where these exist, although new definitions will be required

for some data elements and these will be developed in consultation with the NSP NMDC Reference Group. It should also be noted that some jurisdictions have already made revisions to existing NSP data collection mechanisms to ensure closer national alignment to the NSP NMDC.

The NSP NMDC will also consider obtaining more detailed agency-level administrative data, for example the extent to which ancillary injecting equipment is provided through NSP services. In future reports, the NSP NMDC will also conduct additional analyses to assess the validity of client-level OOS data (demographic characteristics and drug use) collected on the snapshot day by comparing these results to the Australian NSP Survey and annual data collections in jurisdictions where data are electronically available.

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Appendix A: Methodological Notes

Data collection

The following data were provided by each state and territory Health Department:

1. Agency-level administrative data, including outlet type and location of all NSPs operating at 30 June 2016. Postcode was used to determine ASGS area.
2. Demographic and drug use data for NSP attendees at public sector (primary and secondary) NSPs.
3. Quarterly needle and syringe distribution data by public and pharmacy sector.

Ethical approval for the NSP NMDC was obtained from the UNSW Australia Human Research Ethics Committee-A. Formal written permission to access jurisdictional data was sought and obtained from state and territory Health Departments.

Data analysis

Data were coded and cleaned using Microsoft Excel, version 14.0.7173.5000, Microsoft Office Professional Plus 2010 (Microsoft Corporation, Redmond WA) and Stata/IC version 14.2 (StataCorp LP, College Station TX). Data analysis was conducted using Stata/IC version 14.2 (StataCorp LP, College Station TX).

Notes and limitations

The data presented in the inaugural NSP NMDC are subject to limitations. Not all jurisdictions collected all data elements and

not all data elements were nationally aligned in 2016. Client-level demographic and drug use data were collected at public sector outlets on a snapshot day in the last week of February in 2016, with the exception of one jurisdiction that does not routinely collect client level data. In this jurisdiction, NSP client-level data were collected in June 2016. This issue will be rectified in 2017.

Some jurisdictions use additional categories to describe the type of NSP service (for example 'Enhanced Primary' and 'Enhanced Secondary'). In consultation with the relevant jurisdictions and in line with recommendations from the project Reference Group, these NSPs were recoded to the most appropriate 'primary' or 'secondary' definition. The number of NSPs was counted as the total of primary + secondary + pharmacy + SDMs. If a primary or secondary NSP outlet also had SDM(s) these were counted as separate NSPs for the purpose of the NSP NMDC. Historical data on the number of NSPs was obtained from NSP Return on Investment reports^{16,17}. Australian postcode, the numeric descriptor for a postal delivery area, aligned with the locality, suburb or address and NSP postcode was used to determine geographic location according to ASGS Remoteness Area.

Age group categories were not aligned with ABS AGE10P in two jurisdictions. One jurisdiction collected age 18-24 years (n=1) and this was recoded to the 20-29 year age

group. Two jurisdictions collected age group categories that were misaligned to AGE10P for age group categories 30-39 and/or 40-49 year age groups. We used single year age data from the five jurisdictions where these data were available to proportionally allocate NSP attendees to the appropriate AGE10P category. The NSP NMDC defines young people as those aged less than 25 years. One jurisdiction collected data on young people in an age group defined as 20-29 years (n=16) and one jurisdiction collected data on young people in an age group defined as less than 26 years (n=62). These NSP attendees were classified as young people (aged <25 years) in the NSP NMDC and this may have resulted in a slight over-estimate of the proportion of young people in 2016.

As previously stated, not all jurisdictions collected all data elements. Two jurisdictions did not collect data on the Indigenous status of NSP attendees and these jurisdictions were excluded from analysis. One jurisdiction collected Indigenous status as a binary 'yes' or 'no', while the remaining five jurisdictions collected data as per the ABS definition. One jurisdiction did not collect data on drugs injected and this jurisdiction was excluded from analysis. Data on ABS Drugs of Concern at Base level units for the Broad Groups 'Stimulants and Hallucinogens' and 'Anabolic Agents and Selected Hormones' were not collected in most jurisdictions and were unable to be reported nationally.

The capacity for some secondary NSP outlets to provide health education interventions and referrals is limited and some secondary outlets do not collect this information. One jurisdiction provided collated quarterly data and one jurisdiction provided collated weekly data for health education interventions and referrals and the mean number of daily health education interventions and referrals was calculated for reporting in the NSP NMDC.

One jurisdiction does not currently record syringes distributed through the pharmacy sector, although missing data had minimal impact (<0.2%) on the total distribution nationally and did not affect temporal trends. One jurisdiction was unable to provide the number of syringes distributed without needles. In this jurisdiction, total syringe distribution was generated using a count of combined needles and syringes plus needles without syringes. This inconsistency may have inflated the number of syringes distributed in this jurisdiction (NSPs tend to distribute more needles without syringes than syringes without needles). Notwithstanding, the overall impact on national syringe distribution would have been minimal (<1%) as combined needles and syringes comprise the vast majority of syringes distributed in Australia and this inconsistency had no impact on temporal trends in syringe distribution.

PWID estimates

PWID population size estimates to 2005 were calculated by Razali et al (2007). The NSP NMDC project used the following data sources to determine relative changes in the Australian population of 'regular' PWID between 2004/05 and 2015/16.

1. Lifetime and recent (last 12 months) injection of illicit drugs (Table A.1)
2. Illicit drug arrests for amphetamine-type stimulants, heroin and other opioids and cocaine (Table A.2)
3. Heroin and steroid seizures (Table A.3)

4. Accidental deaths due to opioids (Table A.4)
5. Opioid-related hospital admissions/separations per million persons aged 15-54 years (Table A.5).

Given each of these five indicators is an incomplete measure of probable trends in injection drug use, a best estimate was generated using a combined mean of all indicators. This was used to calculate the relative change in injection drug use since 2005 and to estimate the Australian population of 'regular' PWID over the period 2006 to 2016. Log function was used to obtain a smooth fit of the data (Figure A.1).

Table A.1 National lifetime and recent (past 12 months) injection of illicit drugs (%) among people aged 14 years or older, 2001-2013

	2001	2004	2007	2010	2013
Lifetime inject	1.8	1.9	1.9	1.76	1.5
Recent inject	0.6	0.4	0.5	0.43	0.3

Source: National Drug Strategy Household Survey 2013.

Table A.2 National number of illicit drug arrests (2005/06-2013/14)

	2005/ 2006	2006/ 2007	2007/ 2008	2008/ 2009	2009/ 2010	2010/ 2011	2011/ 2012	2012/ 2013	2013/ 2014
Amphetamine-type stimulants					13,982	12,897	16,828	22,189	26,269
Heroin and other opioids	2,234	2,146	2,287	2,706	2,767	2,551	2,714	2,463	2,771
Cocaine					1,244	839	995	1,282	1,466

Source: 2013-14 Illicit Drug Data Report, Australian Crime Commission.

Table A.3 National number of illicit drug seizures (2005/06-2014/15)

	2005/ 2006	2006/ 2007	2007/ 2008	2008/ 2009	2009/ 2010	2010/ 2011	2011/ 2012	2012/ 2013	2013/ 2014	2014/ 2015
Steroid seizures	59	91	104	115	134	206	209	332	356	529
Heroin seizures	1,297	1,478	1,414	1,693	1,585	1,707	1,755	1,588	1,592	1,914

Sources: 2013-14 Illicit Drug Data Report, Australian Crime Commission and 2014-15 Illicit Drug Data Report, Australian Crime Commission.

Note: Includes only those seizures for which a drug weight was recorded.

Table A.4 National number of accidental deaths due to opioids among those aged 15-54 years (2005-2011)

	2005	2006	2007	2008	2009	2010	2011
Accidental deaths due to opioids	374	381	360	500	563	613	617

Source: Roxburgh, A. and Burns, L. (2015). Accidental drug-induced deaths due to opioids in Australia, 2011. Sydney: National Drug and Alcohol Research Centre.

Table A.5 Number of principal opioid-related hospital admissions/separations per million persons aged 15-54 years (2005/06-2012/13)

	2005/ 2006	2006/ 2007	2007/ 2008	2008/ 2009	2009/ 2010	2010/ 2011	2011/ 2012	2012/ 2013
Admissions	445	441	445	467				
Separations	439	433	439	466	453	423	429	453

Sources: Australian Drug Trends 2012. Findings from the Illicit Drug Reporting System (IDRS); Roxburgh, A. and Burns, L. (2013). Drug-related hospital stays in Australia, 1993-2013. Sydney: National Drug and Alcohol Research Centre.

Figure A.1 Relative changes in PWID indicators 2005-2015

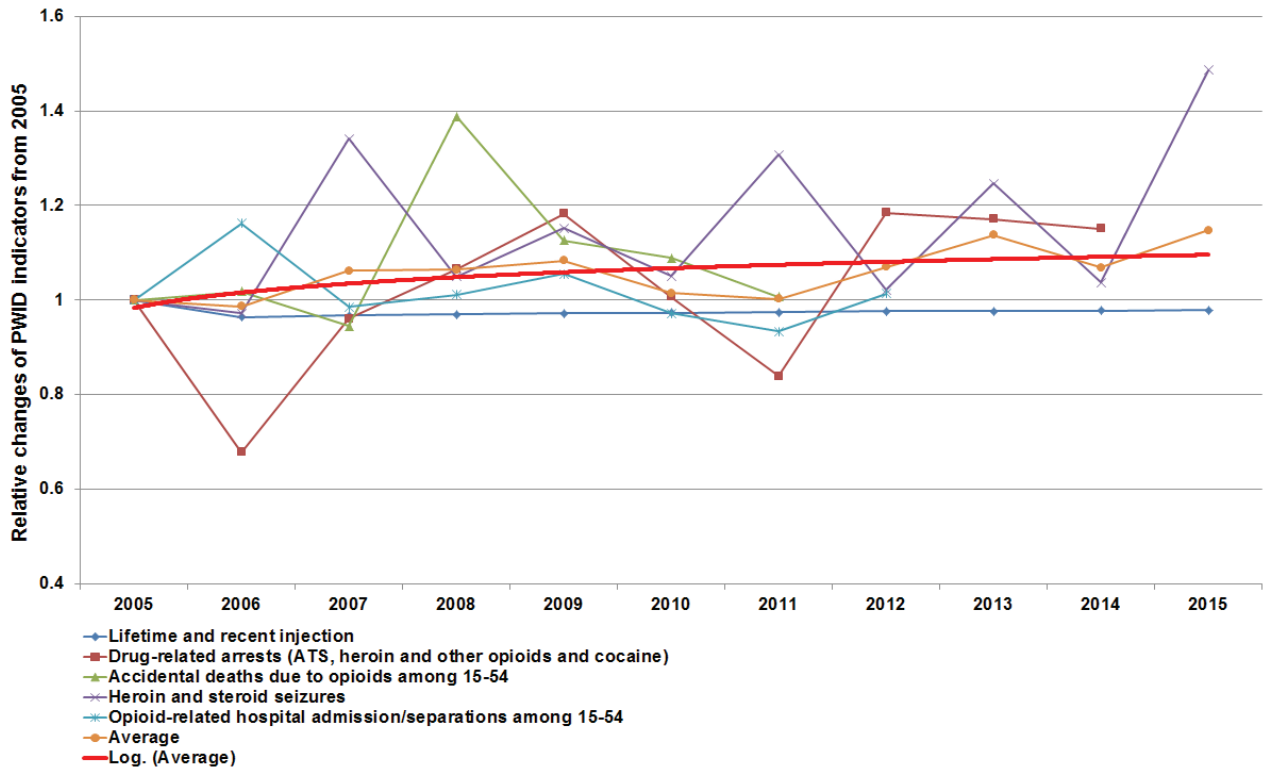
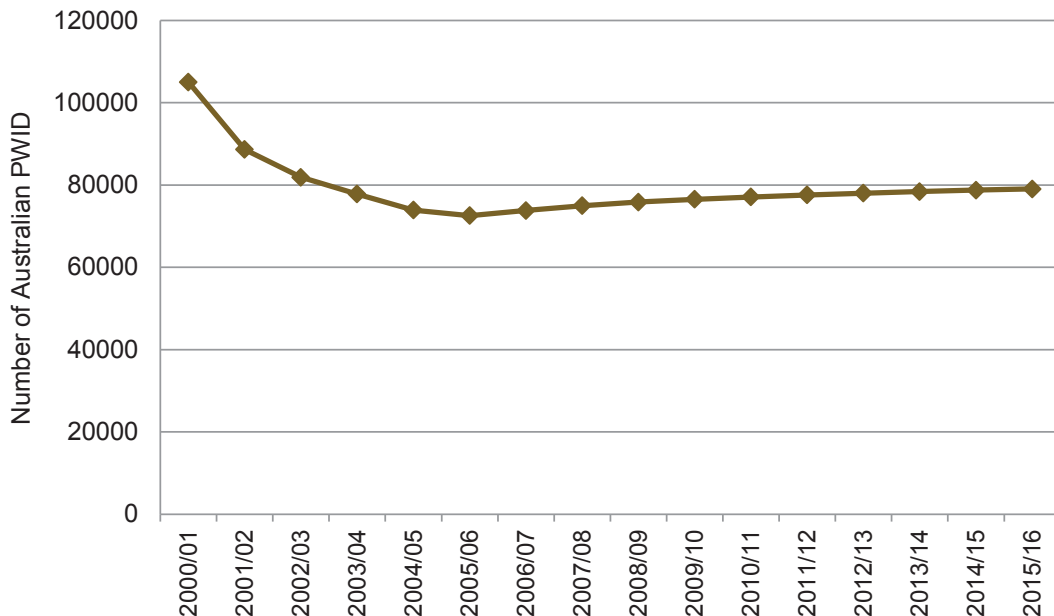


Figure A.2 Trends in estimated number of 'regular' PWID in Australia 2000/01-2015/16





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