



# Medication use by Australia's prisoners 2015: how is it different from the general community?

## Summary

It is known that prisoners generally have poor health and complex health needs that are reflected in the number and types of medications they take. Less is known about how this medication use compares with people in the general community. This bulletin uses data from the Australian Institute of Health and Welfare's National Prisoner Health Data Collection and the Australian Bureau of Statistic's National Health Survey to compare medications taken by prisoners with people in the general community. Contextual information from a focus group of prison health professionals is used to discuss some of the differences between prescribing in a prison and in the general community.

### Use higher for mental health, addictions and other chronic conditions

The types of medications where the difference between prisoners and the general community was the greatest were for those medications usually taken for mental health problems, addictions and chronic conditions. These are areas in which prisoners are known to have poorer health than the general community.

Compared with the general community, prisoners were 9 times as likely to be taking antipsychotics, more than twice as likely to be taking antidepressants or mood stabilisers, and 4 times as likely to be taking medications used in addictive disorders.

The proportion of people taking many types of medication for chronic conditions increases with age. Among prisoners, this increase started earlier and was steeper than for people in the general community. Medications for high blood pressure, high cholesterol, asthma and diabetes were taken by a higher proportion of prisoners than the general community by age 30–39 years. For anti-inflammatories these differences were found for those aged 40–49 and older.

### Reasons for differences in prescribing are complex

Certain aspects of the prison environment may influence prescribing practices. Prisoners have limited access to over-the-counter medications, and are usually not allowed to keep medications in their possession, so some medications that may be purchased without prescription in the community are likely to be prescribed in prison. The choice of prescribed medications may be influenced by security considerations, such as the daily prison schedule, and the 'direct administration' of medications whereby prisoners are provided with, and take, medications under supervision. As in the general community, some medications, such as antipsychotics and benzodiazepines, are considered to be 'tradeable', and the prescription, possession and taking of these medications are closely monitored.

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# 1 Introduction

Medications are an important element in the treatment of many physical and mental health conditions. Despite being relatively young, prisoners often have poorer health than the general adult community, and around half are prescribed medications of some kind (AIHW 2015). The principle of equivalence of care between the community and prison—that prisoners should receive health care equivalent to the community standard—is fundamental to the provision of prison health services (United Nations 2015). However, it has been questioned whether it is realistic for the principle of equivalence of care to apply to medications (Choudry & Evans 2014).

This bulletin explores the available data on medication use by prisoners and the general community—both in terms of how many are taking medications and what types of medication are taken. These data are drawn from the Australian Institute of Health and Welfare's (AIHW) National Prisoner Health Data Collection and the Australian Bureau of Statistics' (ABS) National Health Survey (see Box 1). Contextual information is then presented on the reasons for these differences and issues related to prescribing medications in an Australian prison setting, informed by consultation with prison-based medical practitioners, nurses and pharmacists.

This section presents background information on the characteristics of the prisoner population and of the prison environment that may potentially impact on prisoner medication use. It also presents information on previous studies into the differences in medication use between prisoners and the general community.

## 1.1 The prisoner population

The prisoner population is predominately male (92%, compared with 49% of the general adult population), and relatively young, with over two-thirds (68%) being aged under 40 years compared with approximately 38% of the general adult population (ABS 2014, 2015a). Aboriginal and Torres Strait Islander people are significantly over-represented in the prison system. Indigenous Australians represent approximately 2.4% of the general adult population, but on 30 June 2014, represented 27.4% of the prisoner population (ABS 2014).

The health problems experienced by this population are complex. Prisoners have higher levels of mental health issues, risky alcohol consumption, tobacco smoking, illicit drug use, chronic diseases, communicable diseases, disability and poorer self-assessed health than the general population (AIHW 2013, 2015). The health of prisoners is sufficiently poorer than in the general community such that prisoners are considered to be geriatric at the age of 50–55 (Williams et al. 2014). Prisoners also have a range of other issues that are related to their health, including poor literacy, intellectual disability, challenging behaviours and poor decision making (Hampton et al. 2015).

Before coming to prison, prison entrants often make less use of health services in the community than the general population (AIHW 2015), and prison may therefore present an opportunity to identify and treat health problems.

## 1.2 The prison environment

Prisoners receive a health assessment at reception to prison in the prison health clinic. These assessments are either conducted routinely by a nursing and/or medical practitioner and mental health professional as part of the reception process, or referrals are made to the prison medical practitioner or mental health services. Each state and territory provides prison pharmacy services.

The provision of health services in prison is not straightforward, with security considerations adding a layer of complexity (AIHW 2015). In an environment where the availability of alternative or complimentary therapies may be limited (Bartlett et al. 2014), the prescribing of medications is an important form of treatment.

The continuity of treatment, including medications, between the community and prison is often difficult (AIHW 2015). Delays in accessing community medical records for details of current prescriptions may lead to delays in administration of medications and changes to prescriptions.

Some of the issues in prisons increasing the likelihood of medication changes include:

- different funding arrangements for medications provided in prison
- restrictions to particular types of potentially addictive medications in prison
- potential logistical difficulties in achieving rapid transfer to hospital for medication-related emergencies
- possible trading of medications by prisoners (AIHW 2014a; Bartlett et al. 2014; Pilkinton & Pilkinton 2014).

In Australia, prisoners do not have access to the Pharmaceutical Benefits Scheme which provides subsidised medications for the general community, and so some medications may change on entry to prison to alternatives that are approved for use within the prison, such as individual rather than combination antihypertensives (Hampton et al. 2015).

Non-adherence to medications in prison, which may be either voluntary or coerced, is relatively common (Phillips 2014). In prison, there is a concentration of people with substance misuse issues, and reduced access to illicit drugs, so there is likely to be an increased misuse of prescribed medications, with prisoners seeking medication for hypnotic or euphoric rather than therapeutic effects (RCGP 2011). In a small sample of people who had recently received opioid substitution treatment (OST) in prison, one-third reported being pressured to give their prescribed OST medication to someone else, and 44% reported taking medications not prescribed for them while in prison (White et al. 2016).

People misusing medications may manipulate and attempt to deceive clinicians in order to be prescribed certain medications, including visiting multiple clinicians. Close communication among clinicians can prevent this and may be easier to achieve in prison than in the community (Hampton et al. 2015).

In some instances, the medication-related considerations are highly practical and specific to a secure context. For example, some medications contain alcohol which is prohibited in prison, capsules can be refilled and potentially reused, glass bottles can be used as weapons, liquid medications can be soaked into something and later traded, and some medications

may interfere with prison drug-testing results (Phillips 2014; Pilkinton & Pilkinton 2014). All these considerations can potentially impact on the availability of particular medications in the prison environment and how they are dispensed to prisoners.

In prisons, mental health medications in particular often have poor continuity from the community to prison (Gonzalez & Connell 2014). Continuity issues occur at the other end of the prison stay also, when prisoners are released back into the community. Prisoners are often not allowed control over their medications—the medications are kept securely at the prison clinic rather than in the possession of the prisoners. Benefits of prisoners keeping their own medications include greater independence, personal responsibility and control; but the need to balance these benefits with health and security risks is acknowledged by both prisoners and health professionals (Hassan et al. 2012). The largely passive role prisoners play in their health care while in prison discourages them from taking responsibility for their own health (Bowen et al. 2009). This makes it more difficult for prisoners to know what medications they are taking and why, which in turn increases the difficulties in adhering to their medications after release from prison (Carroll et al. 2014).

### **1.3 Previous studies into prisoner medication use**

There have been few studies looking at the differences in medications taken by prisoners and people in the general community, and fewer still that take into account the age and sex profile of prisoners. This is important because the community sample will include proportionally more elderly people and women than the prison sample, and the medications these groups take are likely to be different. One such study in England that did adjust for age and sex found that rates of prescribing for mental health-related (psychotropic) medications were 5.5 and 5.9 times higher in prison than in the community for men and women, respectively (Hassan et al. 2014).

## **2 Methods**

This section presents information on the methods and data sources used to compare data on medication use by prisoners and the general community, and the focus group consultation undertaken to assist with the interpretation of these results.

### **2.1 Data comparison**

This bulletin uses data from the National Health Survey (NHS) 2014–15 and the National Prisoner Health Data Collection (NPHDC) 2015 to compare medications taken by prisoners and the general community (see Box 1).

The comparison is restricted to the ages of the majority of the prisoner population, 20–59 years, and is broken down by both sex and age group. The NHS data are not available with a breakdown by Indigenous status and did not include a specific Indigenous component for medications data. For this reason, the comparison does not include a breakdown by Indigenous status. A discussion of differences in medications taken by Indigenous and non-Indigenous prisoners is included in Section 3 to assist in interpretation of these results.

### **Box 1: Data sources used in this bulletin**

#### **National Health Survey (NHS) 2014–15**

The NHS 2014–15 was conducted by the ABS in all states and territories and across urban, rural and remote areas of Australia from July 2014 to June 2015. It included around 19,000 people in nearly 15,000 private dwellings. Included in the survey was the question: please list all medications you have taken in the past 2 weeks (ABS 2015b).

#### **National Prisoner Health Data Collection (NPHDC) 2015**

The NPHDC was conducted by the AIHW in prisons across all states and territories in Australia over a 2-week period during March–May 2015. Data on all prescribed medications taken by prisoners on 1 day of that 2-week period were provided by all states and territories except New South Wales (AIHW 2015).

The main methodological difference between the two data collections is that the NHS included over-the-counter medications as well as prescribed medications, whereas the NPHDC included only prescribed medications. Prisoners are generally not able to keep any medications in their possession, but are instead dispensed medications by prison health staff (see Section 4.2). While some over-the-counter discretionary medications may be available to prisoners to purchase, such as vitamin and mineral supplements, the vast majority are prescribed. It is therefore considered that the data not in scope from the NPHDC are likely to be very small and would not affect the overall results of the comparison.

Antibiotics were not included in the data comparison because of difficulties in ensuring consistency between the two data sources due to differences in the way these medications were categorised in the data collections.

Statistically significant differences between the NPHDC and NHS data were determined using the margin of error (confidence interval) of the NHS data. Where there was no overlap between the NPHDC number and the NHS margin of error range, the numbers were confirmed as having a statistically significant difference.

## **2.2 Focus group consultations**

In February 2016, a focus group was conducted by the AIHW with 6 medical practitioners, nurses and pharmacists from prison health services across Australia (Victoria, South Australia, Western Australia, Australian Capital Territory and Northern Territory). The prison-based health practitioners involved in the focus group had a combined experience of over 40 years working in prisoner health.

Participants were provided with data from Tables 3.1–3.4, and the discussion started with the following 4 questions:

1. Are the differences in these tables what you expected?
2. The available data did not allow for an analysis by Indigenous status. If such a table were produced, what differences do you think it would show between prisoners and the general community?
3. What are some of the ways in which prescribing is different in prison and in the community and why?
4. Do you think the principle of equivalence of care applies to prescribing?

Themes discussed by the focus group included interpretation of the quantitative data, issues particular to prescribing in prisons, and equivalence of care.



## 3 Medication use among prisoners and the general population

### 3.1 Proportion of the populations using medications

Of 20–59 year olds, around 2 in 5 (41%) prisoners were taking prescribed medications, compared with 2 in 3 (66%) in the general population taking medications including over-the-counter vitamin and mineral supplements (Table 3.1). In both populations, there are similar patterns by age and gender. Two-thirds (67%) of female prisoners and 73% of women in the general population were taking medications, compared with 38% and 59% of men, respectively. Also, the use of medications increased with age in both prison and the general community. Among prisoners, medication use increased from 31% of those aged 20–29 to 55% of those aged 50–59. Similarly, in the general population, 59% of people aged 20–29 were taking medications, rising to 76% of those aged 50–59.

If those taking only vitamin and mineral supplements are excluded, the proportion of prisoners (40%) and people in the general community (44%) taking medications are more similar. This includes other types of medications not listed individually in these tables.

**Table 3.1: Prisoners and the general population aged 20–59 taking medications, by sex, age group and Indigenous status, 2015 and 2014–15**

	Prisoners		General population		
	Number	Total population (% of)	Estimated number ('000)	Total population (% of)	Margin of error (± %)
<b>Sex</b>					
Male	7,069	38	3,712	59 <sup>(a)</sup>	1.8
Female	1,161	67	4,590	73 <sup>(a)</sup>	1.5
<b>Age group</b>					
20–29	2,271	31	1,892	59 <sup>(a)</sup>	2.5
30–39	2,958	42	2,057	64 <sup>(a)</sup>	2.0
40–49	2,110	49	2,104	67 <sup>(a)</sup>	2.6
50–59	893	55	2,245	76 <sup>(a)</sup>	2.5
<b>Indigenous status</b>					
Indigenous	2,038	35	n.a.	n.a.	
Non-Indigenous	5,721	40	n.a.	n.a.	
<b>Total</b>	<b>8,232</b>	<b>41</b>	<b>8,299</b>	<b>66<sup>(a)</sup></b>	<b>1.2</b>
<b>Total (excl. vitamins &amp; suppl.)</b>	<b>8,154</b>	<b>40</b>	<b>5,564</b>	<b>44<sup>(a)</sup></b>	<b>1.1</b>

n.a. not available

(a) Statistically significant difference from respective prisoner population.

#### Notes

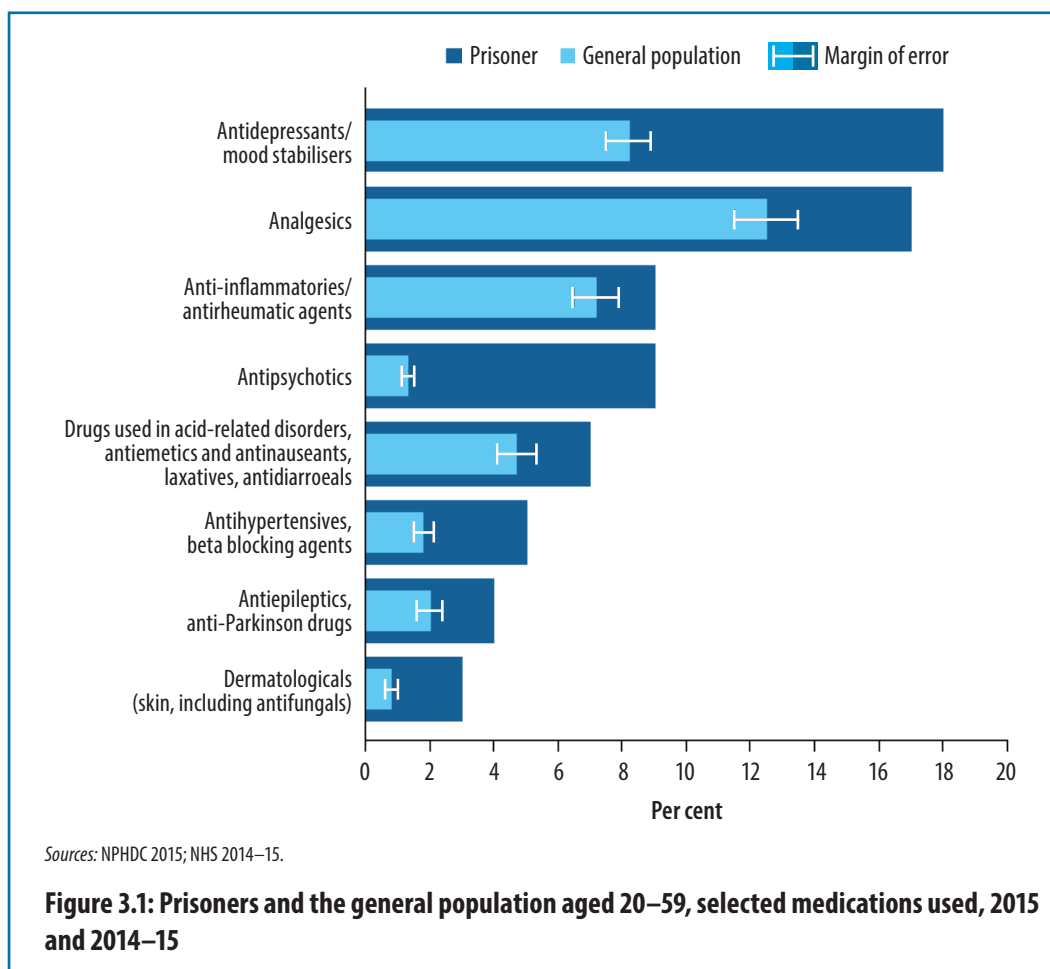
1. Prisoners exclude New South Wales, as medications data were not provided.
2. Prisoners data include prescribed medications only.
3. General population data include prescribed medications and over-the-counter medications.
4. General population data have been randomly adjusted to avoid the release of confidential data, so columns may not sum to totals.
5. Totals include unknowns.

Sources: NPHDC 2015; NHS 2014–15.

### 3.2 Types of medication taken

While overall a higher proportion of those in the general community were taking medications than those in prison, this result is dominated by one medication type only, which reverses the trend for the majority of medications. Most medication types were taken by a larger proportion of prisoners than that for people in the general community, or at similar levels (Table 3.2). The clear exception to this was vitamin and mineral supplements, taken by two-fifths (40%) of 20–59 year olds in the general community, compared with 4% of prisoners in the same age group. Previous research has shown that a large and increasing proportion of the general population in Australia and elsewhere use complementary and alternative medicine, including vitamin and mineral supplements (Bowe et al. 2015).

The medications most likely to be taken by prisoners were antidepressants/mood stabilisers (taken by 18% of prisoners aged 20–59) followed by analgesics (17%), anti-inflammatories/antirheumatic agents (9%) and antipsychotics (9%). Antidepressants/mood stabilisers (8%), analgesics (13%) and anti-inflammatories/antirheumatic agents (7%) were also among the most common medications in the general community. In contrast with prisoners, antipsychotics (1%) were one of the least common (Figure 3.1).





**Table 3.2: Prisoners and the general population aged 20–59, medications used, 2015 and 2014–15**

Medication category	Prisoners		General population		
	Number	Total population (% of)	Estimated number ('000)	Total population (% of)	Margin of error (± %)
Antidepressants/mood stabilisers	3,680	18	1,029	8 <sup>(a)</sup>	0.7
Analgesics	3,385	17	1,574	13 <sup>(a)</sup>	1.0
Anti-inflammatories/antirheumatic agents	1,806	9	902	7 <sup>(a)</sup>	0.7
Antipsychotics	1,763	9	168	1 <sup>(a)</sup>	0.2
Drugs used in acid-related disorders, antiemetics and antinauseants, laxatives, antidiarrhoeals	1,392	7	594	5 <sup>(a)</sup>	0.6
Antihypertensives, beta blocking agents	1,087	5	224	2 <sup>(a)</sup>	0.3
Cholesterol-lowering drugs (lipid-modifying agents)	902	4	562	5	0.5
Vitamin and mineral supplements	819	4	5,006	40 <sup>(a)</sup>	1.2
Asthma relievers, preventers, symptom controllers (drugs for obstructed airway)	800	4	388	3 <sup>(a)</sup>	0.5
Drugs used in addictive disorders	726	4	43	<1 <sup>(a)</sup>	0.1
Antiepileptics, anti-Parkinson drugs	721	4	246	2 <sup>(a)</sup>	0.4
Drugs used in diabetes	570	3	307	2	0.4
Dermatologicals (skin, including antifungals)	562	3	107	1 <sup>(a)</sup>	0.2
Antihistamines	415	2	352	3 <sup>(a)</sup>	0.4
Anti-anxiety drugs (anxiolytics)	333	2	172	1	0.3
Hypnotics and sedatives	115	1	92	1	0.3
Thyroid therapy	87	<1	310	3 <sup>(a)</sup>	0.4
Diuretics	79	<1	87	1	0.2
Antithrombotics	69	<1	244	2 <sup>(a)</sup>	0.3
<b>Total</b>	<b>8,232</b>	<b>41</b>	<b>8,299</b>	<b>66<sup>(a)</sup></b>	<b>1.2</b>

(a) Statistically significant difference from respective prisoner proportion.

*Notes*

1. Prisoners exclude New South Wales, as medications data were not provided.
2. Prisoners data include prescribed medications only.
3. General population data include prescribed medications and over-the-counter medications.
4. General population data have been randomly adjusted to avoid the release of confidential data, so columns may not sum to totals.
5. Drugs used in addictive disorders category for prisoners include drugs used in opioid dependence and drugs used in nicotine dependence; for general community it also includes drugs used in alcohol dependence.
6. A person may take more than one medication type, and not all medication types are listed, so columns may not sum to totals.

Sources: NPHDC 2015; NHS 2014–15.

Among prisoners, most medication types were taken by a higher proportion of women than men (Table 3.3). In the general community, there were fewer medication types where this difference was apparent. Female prisoners were about one-and-a-half times as likely as male prisoners to be taking antidepressants/mood stabilisers (29% of females and 17% of males), analgesics (26% and 16%, respectively) and antipsychotics (13% and 8%, respectively).

Five per cent of female prisoners were taking medications for anxiety, compared with 1% of male prisoners. Among the general community, antidepressants/mood stabilisers were taken more often by women (10%) than men (6%) as were medications for thyroid therapy (4% and 1%, respectively).

Vitamin and mineral supplements were taken by a higher proportion of women than men among both prisoners (14% and 3%, respectively) and the general population (47% and 32%, respectively).

**Table 3.3: Prisoners and the general population aged 20–59, medications used, by sex, 2015 and 2014–15 (%)**

Medication category	Prisoners		General population			
	Male	Female	Male	Margin of error (± %)	Female	Margin of error (± %)
Antidepressants/mood stabilisers	17	29	6 <sup>(a)</sup>	0.9	10 <sup>(a)</sup>	0.9
Analgesics	16	26	12 <sup>(a)</sup>	1.2	14 <sup>(a)</sup>	1.4
Anti-inflammatories/antirheumatic agents	9	12	7 <sup>(a)</sup>	1.1	8 <sup>(a)</sup>	0.9
Antipsychotics	8	13	1 <sup>(a)</sup>	0.4	1 <sup>(a)</sup>	0.4
Drugs used in acid-related disorders, antiemetics and antinauseants, laxatives, antidiarrhoeals	7	10	4 <sup>(a)</sup>	0.8	5 <sup>(a)</sup>	0.7
Antihypertensives, beta blocking agents	5	6	2 <sup>(a)</sup>	0.4	2 <sup>(a)</sup>	0.5
Cholesterol-lowering drugs (lipid-modifying agents)	4	5	5	0.8	4 <sup>(a)</sup>	0.6
Vitamin and mineral supplements	3	14	32 <sup>(a)</sup>	1.7	47 <sup>(a)</sup>	1.5
Asthma relievers, preventers, symptom controllers (drugs for obstructed airway)	4	7	3	0.9	3 <sup>(a)</sup>	0.5
Drugs used in addictive disorders	3	7	<1 <sup>(a)</sup>	0.2	<1 <sup>(a)</sup>	0.2
Antiepileptics, anti-Parkinson drugs	4	4	2 <sup>(a)</sup>	0.5	2 <sup>(a)</sup>	0.5
Drugs used in diabetes	3	4	3	0.5	2 <sup>(a)</sup>	0.5
Dermatologicals (skin, including antifungals)	3	4	1 <sup>(a)</sup>	0.3	1 <sup>(a)</sup>	0.3
Antihistamines	2	6	3	0.6	3 <sup>(a)</sup>	0.6
Anti-anxiety drugs (anxiolytics)	1	5	1	0.4	2 <sup>(a)</sup>	0.4
Hypnotics and sedatives	1	1	1	0.2	1	0.4
Thyroid therapy	<1	2	1 <sup>(a)</sup>	0.4	4 <sup>(a)</sup>	0.6
Diuretics	<1	1	<1	0.2	1	0.4
Antithrombotics	<1	1	2 <sup>(a)</sup>	0.5	2 <sup>(a)</sup>	0.4
<b>Total</b>	<b>38</b>	<b>67</b>	<b>59</b>	<b>1.8</b>	<b>73</b>	<b>1.5</b>

(a) Statistically significant difference from the respective prisoner proportion.

*Notes*

1. Prisoners exclude New South Wales, as medications data were not provided.
2. Prisoners data include prescribed medications only.
3. General population data include prescribed medications and over-the-counter medications.
4. General population data have been randomly adjusted to avoid the release of confidential data, so columns may not sum to totals.
5. Drugs used in addictive disorders category for prisoners include drugs used in opioid dependence and drugs used in nicotine dependence; for general community also includes drugs used in alcohol dependence.
6. A person may have taken more than one medication type, so columns may not sum to totals.

Sources: NPHDC 2015; NHS 2014–15.

For most medication types, both population groups showed an increase in use with age (Table 3.4). However, among prisoners, this increase was both steeper and earlier than among the general population for several medication types. This earlier uptake of medications such as antihypertensives (for high blood pressure), cholesterol-lowering drugs, and drugs used in diabetes and asthma may indicate that among prisoners there is an earlier onset of health conditions usually associated with ageing compared with the general population.

**Table 3.4: Prisoners and the general population aged 20–59, medications used, by age group (years), 2015 and 2014–15 (%)**

Medication category	Prisoners				General population			
	20–29	30–39	40–49	50–59	20–29	30–39	40–49	50–59
Antidepressants/mood stabilisers	15	19	21	21	5 <sup>(a)</sup>	7 <sup>(a)</sup>	10 <sup>(a)</sup>	11 <sup>(a)</sup>
Analgesics	12	18	21	23	10	11 <sup>(a)</sup>	14 <sup>(a)</sup>	16 <sup>(a)</sup>
Anti-inflammatories/antirheumatic agents	6	8	12	19	6	7	7 <sup>(a)</sup>	8 <sup>(a)</sup>
Antipsychotics	8	10	9	8	1 <sup>(a)</sup>	1 <sup>(a)</sup>	2 <sup>(a)</sup>	1 <sup>(a)</sup>
Drugs used in acid-related disorders, antiemetics and antinauseants, laxatives, antidiarrhoeals	3	6	10	17	2 <sup>(a)</sup>	3 <sup>(a)</sup>	5 <sup>(a)</sup>	10 <sup>(a)</sup>
Antihypertensives, beta blocking agents	1	4	9	20	<1	1 <sup>(a)</sup>	1 <sup>(a)</sup>	5 <sup>(a)</sup>
Cholesterol-lowering drugs (lipid-modifying agents)	1	3	8	18	<1	1 <sup>(a)</sup>	4 <sup>(a)</sup>	14 <sup>(a)</sup>
Vitamin and mineral supplements	2	4	6	8	37 <sup>(a)</sup>	40 <sup>(a)</sup>	39 <sup>(a)</sup>	44 <sup>(a)</sup>
Asthma relievers, preventers, symptom controllers (drugs for obstructed airway)	3	4	5	6	3	3 <sup>(a)</sup>	3 <sup>(a)</sup>	4 <sup>(a)</sup>
Drugs used in addictive disorders	3	5	4	3	<1 <sup>(a)</sup>	1 <sup>(a)</sup>	1 <sup>(a)</sup>	<1 <sup>(a)</sup>
Antiepileptics, anti-Parkinson drugs	2	4	5	5	1 <sup>(a)</sup>	1 <sup>(a)</sup>	3 <sup>(a)</sup>	3 <sup>(a)</sup>
Drugs used in diabetes	1	2	6	9	1	1 <sup>(a)</sup>	3 <sup>(a)</sup>	6 <sup>(a)</sup>
Dermatologicals (skin, including antifungals)	2	3	3	4	1 <sup>(a)</sup>	1 <sup>(a)</sup>	1 <sup>(a)</sup>	1 <sup>(a)</sup>
Antihistamines	2	2	2	3	2	3	3	3
Anti-anxiety drugs (anxiolytics)	1	2	2	2	1	1 <sup>(a)</sup>	2	2
Hypnotics and sedatives	<1	1	1	<1	1	1	1	1
Thyroid therapy	<1	<1	1	1	1 <sup>(a)</sup>	1 <sup>(a)</sup>	2 <sup>(a)</sup>	5 <sup>(a)</sup>
Diuretics	<1	<1	1	2	<1	<1	1	2
Antithrombotics	<1	<1	1	1	<1	1 <sup>(a)</sup>	2 <sup>(a)</sup>	5 <sup>(a)</sup>
<b>Total</b>	<b>31</b>	<b>42</b>	<b>49</b>	<b>55</b>	<b>59</b>	<b>64</b>	<b>67</b>	<b>76</b>

(a) Statistically significant difference from the respective prisoner proportion.

*Notes*

1. Prisoners exclude New South Wales, as medications data were not provided.
2. Prisoners data include prescribed medications only.
3. General population data include prescribed medications and over-the-counter medications.
4. General population data have been randomly adjusted to avoid the release of confidential data, so columns may not sum to totals.
5. Drugs used in addictive disorders category for prisoners include drugs used in opioid dependence and drugs used in nicotine dependence; for general community also includes drugs used in alcohol dependence.

Sources: NPHDC 2015; NHS 2014–15.

Within the prisoner population, the medication types taken more often by Indigenous than non-Indigenous prisoners were antihypertensives and beta blocking agents, cholesterol-lowering drugs and drugs used in diabetes (AIHW 2015). While it is not clear from the available data the extent to which these differences may also be reflected in the general community, they are consistent with the general health status of Indigenous and non-Indigenous people (AIHW 2014b).

## **4 Why medication use in prisoners differs from use in the general community**

The factors that potentially make medication use in prisoners different to medication use in the general community fall into two broad categories: issues relating to the health status of prisoners; and issues relating to the prison environment and the prison system.

This section provides information on the characteristics of the prisoner population and of the prison environment that may potentially impact on prisoner medication use. It also includes information on the differences identified for specific medications. Focus group consultations with prison-based medical practitioners, nurses and pharmacists are summarised here.

### **4.1 Reasons relating to the prisoner population**

The demographic and health profiles of prisoners are significantly different to those of the general community. Prisoners are predominately young, adult males, from lower socioeconomic groups, with an over-representation of Indigenous people. Health issues usually associated with children, women and the elderly are therefore seen less often in prisons than in the general community.

However, the poorer health of the prisoner population and engagement in risky health behaviours means that prisoners have significant health needs. Some medication types were expected to be taken by a higher proportion of prisoners, considering the health profile of this population. These included medications used in addictive disorders and antidepressants/mood stabilisers.

Mental health conditions, alcohol and drug addictions, chronic pain, and histories of trauma combine with chronic conditions, such as diabetes, asthma and cardiovascular disease, to form complex comorbidities to be treated. Prescribing for these comorbid conditions is complicated, with interactions between medications limiting options.

### **4.2 Reasons relating to the prison environment**

There are a number of features of the prison environment that make prescribing there different to in the community, including the availability of health services and treatments, and security considerations.

#### **Availability of health services**

The proximity of prisoners to health services is important. Every prison will have at least a nurse, and usually a minimum of weekly visits by a medical practitioner. This contrasts with the extremes found in the general community—from remote areas with lower access

to regular medical services, to large, urban areas where people may regularly visit multiple medical services. Prisoners have close proximity to health services, but are unable to choose to visit multiple medical practitioners at the same time, potentially meaning less overservicing in prisons than may occur in the general community.

Prisoners, however, do not have access to pharmacies in the same way as those in the general community. Over-the-counter medications, such as paracetamol, are usually controlled in the prisons, and require contact with the prison health clinic. This means that dealing with health issues and requests for which someone in the general community would visit a pharmacy, take up significant amounts of time for prison health staff.

### **Availability of medications**

In theory, all medications available to people in the general community should also be available to prisoners. However, in practice, it may not always be the case. Security considerations and the daily routines of the prison mean that some medication regimens are effectively not available. Some low security prisoners, in some prisons, may be able to keep up to a week's supply of medication in their cells. However, this will not include any medications considered 'tradeable' (such as benzodiazepines).

Medication 'rounds', whereby prisoners are handed out their medications and are supervised while taking them, may happen as few as 2 times each day. This has several implications. Firstly, it means that 3- and 4-times daily medication regimes are often impractical. Secondly, it makes the time various medications are taken more difficult to control. A medication that should be taken at 10 pm may be distributed and observed by a health professional to be taken at 4 pm. This effectively means that medications must be taken according to a compromise between the medication schedule and the prison schedule. These restrictions may limit the choice of medications of the prescriber where they know it will be impractical for a medication to be taken at particular times.

Some pharmaceuticals, such as skin creams and vitamin and mineral supplements, may be available for prisoners to purchase, by being on the 'buy-up list' (a list of items available for purchase through the prison canteen). In the general community, if the local shop or pharmacy does not stock what you want, or is currently out of stock, you may be able to visit another outlet. Prisoners do not have this choice—if the prison canteen does not have any, there is no other canteen to try.

### **Availability of non-pharmaceutical treatments**

Imprisonment places restrictions on prisoners' freedom and movements, not only to and from the prison, but within the prison itself. In the general community, there may be many options available to people to look after their mental and physical health. These include more formal options such as counselling and alternative therapies, right through to informal options such as spending time with family and friends. In prison, there are fewer options available, which can lead to the medicalisation of health issues, particularly for those who spend longer periods in prison.

Contrasting with this though, prisoners report improvements to their health while in prison, and increased access to health services (AIHW 2015). While there are fewer options available in prison than in the community, many of the services available in the community may not have been accessed by this population.

It was noted that there are variations in the availability of some medications (such as methadone) and non-pharmaceutical treatments (such as psychologists) among the states and territories (for details, see AIHW 2014a, 2015).

### Adherence

It is known that some medications have a high value among prisoners as 'tradeable' (such as antipsychotics). There is a risk that medications prescribed for one prisoner may be sold or traded then consumed by a different prisoner, and this is a serious consideration for health professionals and custodial staff alike. Focus group participants noted that the organisation of the individual prisons has an effect on adherence, with some arrangements contributing to issues such as trading, whereas others may mitigate them. It was also noted, though, that trading both commercially and informally (for example, among family members) also occurs in the general community as well as in prison.

Prisons are characterised by the predominance of direct administration of medications. This means prisoners are supervised while taking their medications rather than being able to hold them in their cells. This is in direct contrast with the general community, where people usually have their medications in their possession, and have more control over taking them. Supervision in prison enables health staff to identify instances of non-compliance in a way that is not possible in the community, and allows health staff to follow up with prisoners to promote adherence with the prescribed medication regimen. In the community, there are two more steps required for compliance with medications prescribed by a medical officer. Firstly, the prescription needs to be filled, and then the medication needs to be taken. In the community, where there is no routine supervision of these processes, it is unclear how often compliance occurs.

### Transfers between prisons

Particularly in the larger jurisdictions, transfers of prisoners between prisons are common and can impact on medication use. There are several reasons why prisoners may transfer between prisons. Some prisons may have specialist services or programs available, such as sex offender treatment programs. Prisoners may transfer if their security classification changes, as not all prisons cater for all security classifications. Overcrowding in prisons may lead to increases in transfers, and prisoners may be transferred between prisons for court appearances.

These transfers can lead to changes in the prescriptions for prisoners, and prisons may have different prescribing practices. Where there are different health service providers contracted to different prisons, and where jurisdictions have a combination of both public and private prisons, the approaches to prescribing may vary.

## 4.3 The use of specific medications

### Vitamin and mineral supplements

A notable difference between medication use in prisons and in the community was in the use of vitamin and mineral supplements. This difference can potentially be attributed to ready availability. In the community, these medications can be purchased over the counter at supermarkets and pharmacies, whereas in prisons they are only available to



most prisoners by prescription, with discretionary purchases being rare. The prescribing of vitamins and minerals could therefore be more closely linked with assessed medical need in prison, rather in the community, where they can be taken without any intervention from a health professional.

### **Antithrombotic medications**

Antithrombotic medications were another medication category taken by a higher proportion of people in the general community than people in prison. This category includes some over-the-counter medications such as aspirin, so there may be similar issues to those raised with vitamins. Given the higher proportion of comorbidities of prisoners, these types of medications (for example warfarin) may be incompatible with other medications the prisoners are taking, such as antipsychotics. Antithrombotic medication may also be given as secondary prevention in the community, and focus group participants noted that prison clinics may have less time for preventative health because they spend their time responding to acute presenting health complaints.

### **Analgesics**

Focus group participants noted that analgesics or painkillers are a medication type which may potentially be over-administered in prison due to the organisation of health services within prisons. For example, prisoners could ask for painkillers late in the day. While medical officers in prison may be cautious in prescribing painkillers because of security implications, there may be 'as needed' analgesics prescribed. Late in the day or after hours, it may be easier to provide the painkillers than try to address other, more significant health issues, or find an alternative solution to the presenting health complaint.

## **4.4 Principle of equivalence of care**

Equivalence of care refers to the idea that prisoners are entitled to receive the same level of health care as would be available in the general community. The focus group participants agreed that the principle of equivalence of care should apply, but that this does not necessarily mean that community prescribing is always the standard to which to aspire: 'Yes, in principle, but the community is not necessarily best practice' (focus group participant).

The high level of vitamin and mineral supplement use in the community was used as an example of potential overservicing in the community and medications being taken perhaps without medical need. The ability of patients in the community to obtain multiple prescriptions for medications such as benzodiazepines was also cited as an example of where prescribing in the community is not necessarily the 'gold standard': 'Equivalence of quality and ethical care is the aim. Sometimes the community gets it wrong' (focus group participant).

Focus group participants' feedback did not disagree with the principle of equivalence of care, but highlighted that community health care, as for prison health care, includes a spectrum of quality and practice.

## 5 Discussion/conclusion

Comparison of medications taken by prisoners and those in the general community is complex. Overall, prisoners differed significantly from the general community in the types of medications used. This is consistent with the health profile of both populations, with prisoners having poorer health than the general community. Medications for mental health issues and analgesics are among those showing the largest differences between the two populations.

The opposite result is found for predominately over-the-counter medications such as vitamin and mineral supplements, to which prisoners have more restricted access. In most instances, prisoners only take these medications when they are prescribed by a medical practitioner to meet a medical need, whereas in the community, these medications are widely available without medical practitioner intervention.

There are some limitations to the data presented in this bulletin, which point to areas for future work. Firstly, the lack of an Indigenous comparison group for the community data is a gap in the available data. With the over-representation of Indigenous people in the prisoner population, this is worthy of future analysis. Focus group participants noted that there is often a large difference in the Indigenous community between medications that are prescribed and medications that are actually taken, and that this may be especially the case for prisoners. There is currently little or no available data on the issue of differences in compliance with medications between prisoners and the general community.

Secondly, the small size of the focus group means that the results from the qualitative data may not be generalisable across the prison health sector.

Finally, one of the medication types left out of this analysis was antibiotics. It is difficult to ensure consistency in the definition of antibiotics, because they are a group of medications crossing a number of different medication categories. Focus group participants suggested that this may be another area in which prescriptions in prison are actually lower than in the general community, due to potential overprescribing in the general community. Further analysis of the data would be required to confirm this suggestion.

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## Glossary of medication categories

**analgesics:** Painkillers.

**anti-anxiety drugs (anxiolytics):** Drugs used to reduce or relieve anxiety.

**antidepressants/mood stabilisers:** Drugs used to relieve depression and stabilise mood.

**antihistamines:** Drugs used to reduce or relieve the symptoms of allergy.

**antihypertensives, beta blocking agents:** Drugs used to treat high blood pressure, angina and to control heart rhythm.

**anti-inflammatory/antirheumatic agents:** Drugs used to treat inflammation and rheumatoid arthritis.

**antipsychotics:** Drugs used to treat psychosis, to minimise symptoms of psychosis such as delusions, hallucinations or thought disturbances.

**antithrombotics:** Drugs used to reduce the formation of blood clots.

**dermatologicals (skin, including antifungals):** Medications to treat skin conditions.

**diuretics:** Drugs used to increase the amount of water and salt excreted through urine; may be used to treat heart failure, high blood pressure, and liver and some kidney diseases.

**drugs used in acid-related disorders, antiemetics and antinauseants, laxatives, antidiarrhoeals:** Drugs used to treat stomach and digestive conditions such as nausea and vomiting.

**hypnotics and sedatives:** Drugs used to treat sleep disorders.

## References

ABS (Australian Bureau of Statistics) 2014. Prisoners in Australia 2014. ABS cat. no. 4517.0. Canberra: ABS.

ABS 2015a. Population by age and sex, regions of Australia, 2014. ABS cat. no. 3235.0. Canberra: ABS.

ABS 2015b. National Health Survey 2014–15. ABS cat. no. 4364.055.001. Canberra: ABS.

AIHW (Australian Institute of Health and Welfare) 2013. The health of Australia's prisoners 2012. Cat. no. PHE 170. Canberra: AIHW.

AIHW 2014a. Prisoner health services in Australia 2012. AIHW bulletin no. 123. Cat. no. AUS 183. Canberra: AIHW.

AIHW 2014b. Australia's health 2014. Australia's health series no. 14. Cat. no. AUS 178. Canberra: AIHW.

AIHW 2015. The health of Australia's prisoners 2015. Cat. no. PHE 207. Canberra: AIHW.

Bartlett A, Dholakia N, England R, Hales H, van Horn E, McGeorge T et al. 2014. Prison prescribing practice: practitioners' perspectives on why prison is different. *International Journal of Clinical Practice* 68:413–7.

Bowe S, Adams J, Lui C-W & Sibbritt D 2015 A longitudinal analysis of self-prescribed complementary and alternative medicine use by a nationally representative sample of 19,783 Australian women, 2006–2010. *Complementary Therapies in Medicine* 23:699–704.

Bowen RA, Rogers A & Shaw J 2009. Medication management and practices in prison for people with mental health problems: a qualitative study. *International Journal of Mental Health Systems* 3:24. doi:10.1186/1752-4458-3-24.

Carroll M, Kinner SA & Heffernan EB 2014. Medication use and knowledge in a sample of Indigenous and non-Indigenous prisoners. *Australian and New Zealand Journal of Public Health* 38(2):142–6.

Choudry K & Evans N 2014. Beyond equivalence of care in prison pharmacy. *International Journal of Pharmacy Practice* 22(5):363–5.

Gonzalez JMR & Connell NM 2014. Mental health of prisoners: identifying barriers to mental health treatment and medication continuity. *American Journal of Public Health* 104(2):2328–33.

Hampton S, Blomgren D, Roberts J, Mackinnon T & Nicholls G 2015. Prescribing for people in custody. *Australian Prescriber* 38(5):160–3.

Hassan L, Senior J, Frisher M, Edge D & Shaw J 2014. A comparison of psychotropic medication prescribing patterns in East of England prisons and the general population. *Journal of Psychopharmacology* 28(4):357–62.

Hassan L, Weston J, Senior J & Shaw J 2012. Prisoners holding their own medications during imprisonment in England and Wales: a survey and qualitative exploration of staff and prisoners' views. *Criminal Behaviour and Mental Health* 22:29–40.

Phillips A 2014. Prescribing in prison: complexities and considerations. *Nursing Standard* 28(21):46–50.

Pilkinton PD & Pilkinton JC 2014. Prescribing in prison: minimizing psychotropic drug diversion in correctional practice. *Journal of Correctional Health Care* 20(2):95–104.

RCGP (Royal College of General Practitioners) 2011. Safer prescribing in prisons: guidelines for clinicians. Nottinghamshire: Nottinghamshire Healthcare.

United Nations 2015. United Nations standard minimum rules on the treatment of prisoners (the Mandela Rules): note by the Secretariat. General Assembly, 17th session, Third Committee, Agenda item 106, Crime prevention and criminal justice, A/C.3/70/L.3. Vienna: United Nations. Viewed 15 March 2016, <[http://www.un.org/ga/search/view\\_doc.asp?symbol=A/C.3/70/L.3](http://www.un.org/ga/search/view_doc.asp?symbol=A/C.3/70/L.3)>.

White N, Ali R, Larance B, Zador D, Mattick R & Degenhardt, L 2016. The extramedical use and diversion of opioid substitution medications and other medications in prison settings in Australia following the introduction of buprenorphine-naloxone film. *Drug and Alcohol Review* 35:76–82. doi:10.1111/dar.12317.

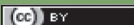
Williams BA, Ahalt C & Greifinger RB 2014. The older prisoner and complex chronic medical care. In: Enggist S, Møller L, Galea G & Udesen C (eds). *Prisons and health*. Copenhagen: World Health Organization (WHO) Regional Office for Europe, 165–170.

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