



Australian Government

Australian Institute of  
Health and Welfare

# Non-medical use of pharmaceuticals

Trends, harms, and treatment

2006–07 to 2015–16





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This publication is part of the Australian Institute of Health and Welfare's drug treatment series. A complete list of the Institute's publications is available from the Institute's website <[www.aihw.gov.au](http://www.aihw.gov.au)>.

ISBN 978-1-76054-266-5 (PDF)

ISBN 978-1-76054-267-2 (Print)

ISSN 2205-5088 (PDF)

ISSN 1447-6746 (Print)

**Suggested citation**

Australian Institute of Health and Welfare 2017. Non-medical use of pharmaceuticals: trends, harms and treatment, 2006-07 to 2015-16. Drug treatment series no.30. Cat. no. HSE 195. Canberra: AIHW.

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Published by the Australian Institute of Health and Welfare.

Please note that there is the potential for minor revisions of data in this report.

Please check the online version at <[www.aihw.gov.au](http://www.aihw.gov.au)> for any amendments.

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# Acknowledgments

The authors of this report were Mr Josh Sweeney and Ms Marissa Veld from the Tobacco, Alcohol and Other Drugs Unit of the Australian Institute of Health and Welfare.

Ms Cathy Claydon and Ms Kristina Da Silva assisted with data analysis, and Ms Moira Hewitt, Mr Matthew James, and Ms Shann Hulme provided essential advice and guidance. The contributions, comments, and advice of the Alcohol and Other Drug Treatment Services National Minimum Data Set Working Group, and of Professor Ann Roche for peer review of the report are gratefully acknowledged.

The Australian Government Department of Health provided funding for this report.

Thanks are extended to the data managers and staff in the following departments:

- Australian Government Department of Health
- New South Wales Ministry of Health
- Victorian Department of Health and Human Services
- Queensland Department of Health
- Western Australian Mental Health Commission
- South Australian Department of Health
- Tasmanian Department of Health and Human Services
- Australian Capital Territory Health Directorate
- Northern Territory Department of Health.

# Abbreviations

|            |   |
|------------|---|
| ABS        | Australian Bureau of Statistics   |
| AIHW       | Australian Institute of Health and Welfare  |
| AODTS NMDS | Alcohol and Other Drug Treatment Services National Minimum Data Set   |
| HIV        | human immunodeficiency virus  |
| ICD-10-AM  | International Statistical Classification of Diseases and Related Health Problems, 10th revision, Australian modification, 9th edition |
| NDS        | National Drug Strategy  |
| NDSHS      | National Drug Strategy Household Survey   |
| PBS        | Pharmaceutical Benefits Scheme  |
| USA        | United States of America  |
| TGA        | Therapeutic Goods Administration  |
| WHO        | World Health Organization   |

# Summary

In Australia, many pharmaceutical drugs are readily available to prevent, treat, and cure disease. But statistics show that certain pharmaceutical drugs are commonly used for non-medical purposes, which causes considerable physical, mental, and social harms.

In this report, non-medical use is the consumption of a prescription or over-the-counter pharmaceutical drug for non-therapeutic purposes, or other than directed by a registered health-care professional.

## ◆ In Australia, the non-medical use of pharmaceuticals is common

Results from the 2016 National Drug Strategy Household Survey (NDSHS) showed that about 1 million Australians (4.8%) aged 14 years or older misused a pharmaceutical drug (excluding non-opioid over-the-counter medicines) in the previous 12 months. In 2013, recent non-medical use of pharmaceuticals was 4.7%, having increased steadily from 3.7% in 2007.

The non-medical use of pharmaceuticals in 2016 was higher than all other illicit drugs, except cannabis (10.4%). Pharmaceuticals most commonly used for non-medical purposes were opioid analgesics and benzodiazepines. Recent non-medical use occurred more often than for most other illicit drugs, with 28% of people who misused them doing so daily or weekly.

## ◆ Prescriptions for opioid analgesics continue to rise

The rate of dispensed prescriptions for opioid analgesics has been climbing—from 36,900 dispensed prescriptions per 100,000 population in 2010–11 to 45,600 in 2014–15. This amounted to a 24% rise, which was largely driven by a 60% rise in the rate of prescriptions for oxycodone (and oxycodone/naloxone)—from 9,800 per 100,000 population in 2010–11 to 15,500 in 2014–15.

## ◆ Chronic pain and mental illness is higher among people who used pharmaceuticals for non-medical purposes

In 2016, people aged 18 and over who recently used pharmaceuticals for non-medical purposes were more likely than those who did not to experience mental illness (29% compared with 15.2%), chronic pain (15.9% compared with 10.3%), and high or very high levels of psychological distress (24.1% compared with 10.9%).

## ◆ The presence of pharmaceuticals continues to rise for drug-induced deaths

Over the past decade, drug-induced deaths were more likely to be due to prescription drugs than illicit drugs. In 2016, there were 663 drug-induced deaths where benzodiazepines were present, and 550 where ‘other opioids’ (prescription painkillers such as oxycodone, morphine, and codeine) were present. Between 2006 and 2016, the number of deaths where either other opioids or benzodiazepines were present rose by 127% and 168%, respectively.

## ◆ Treatment episodes rose for some opioids

Overall, where the principal drug of concern was a pharmaceutical, the proportion of closed treatment episodes for all opioid analgesics combined rose from 56% in 2006–07 to 73% in 2015–16.

Within the group of opioid analgesics, the proportion of closed treatment episodes rose for oxycodone (from 2.6% to 9.8%), codeine (from 5.9% to 14.1%), buprenorphine (from 4.6% to 8.6%), and other opioids (from 1.3% to 6.8%) over that time. Conversely, the proportion of closed treatment episodes for benzodiazepines steadily declined, from 27% to 16.8%.

# 1 Introduction

Pharmaceutical drugs are readily available in Australia to prevent, treat, and cure disease. But it is the harms associated with non-medical use (and in some cases, harms that result from medical use) and dependence from use that are of concern to the broader community.

Pharmaceutical medicines are often essential to manage various medical conditions, including cancer or acute pain from injury or surgery. The non-medical use of pharmaceuticals by themselves (or in conjunction with illicit drugs) is associated with various physical, mental, and social harms (Nicholas et al. 2011).

In 2016, the 2 main classes of pharmaceuticals used for non-medical purposes included opioid analgesics (such as oxycodone, morphine, and codeine) and tranquillisers/sleeping pills or benzodiazepines (such as alprazolam and diazepam) (AIHW 2017b) (see Box 1.1 for definitions of pharmaceuticals in this report).

Australian data suggest that substantial and rising numbers of opioid analgesics and benzodiazepines are being prescribed. Further, the non-medical use of pharmaceuticals among the general population is common, with 2016 National Drug Strategy Household Survey (NDSHS) data showing that about 2.5 million Australians aged 14 and over reported using pharmaceuticals for non-medical use in their lifetime, and almost 1 million doing so in the previous 12 months (excluding non-opioid medicines available over the counter) (AIHW 2017b).

The non-medical use of pharmaceuticals was at higher levels than all other illicit drugs except for cannabis. Some of these people were also likely to use other illicit drugs—about 2 in 5 (39%) of those who used a pharmaceutical for non-medical purposes reported using at least 1 illicit drug in the previous 12 months. Harms associated with the non-medical use of these pharmaceuticals continue to rise, with data suggesting there have been significant increases in overdoses and deaths (ABS 2017).

## International trends

Internationally, the non-medical use of pharmaceuticals and resulting harms are also rising, including in the United States of America (USA) and Canada. In these countries (as in Australia), pharmaceuticals are used for non-medical purposes at higher levels than all other illicit drugs except cannabis (Health Canada 2014; SAMHSA 2015).

In the USA, in 2015, almost 22,000 deaths—or about 62 deaths each day—involved prescription opioids (including methadone and synthetic opioids, such as fentanyl and tramadol) (CDC 2016). Between 2014 and 2015, the age-adjusted rate of deaths involving opioids in the USA rose by 15.6%—from 9.0 deaths to 10.4 per 100,000 population (Rudd et al. 2016), mainly influenced by the number of deaths involving heroin and synthetic opioids (excluding methadone).

Research in the USA suggests that the rise in the harms from the non-medical use of pharmaceuticals is driven by a combination of a culture of unrealistic expectations about pain management, financial incentives for doctors to offer prescriptions, and less regulation of the pharmaceutical industry advertising products compared with other high-income countries (Humphreys 2017).

This report discusses the prevalence of the non-medical use of pharmaceuticals in Australia, and associated harms, with a particular focus on opioids, analgesics, and benzodiazepines; the use of multiple drugs; and treatment for the non-medical use of a pharmaceutical.

Further terminology used to describe the non-medical use of pharmaceuticals, alcohol, and other drugs and treatment is in Box 1.1 and the Glossary.

### **Box 1.1: Defining pharmaceutical non-medical use and misuse**

Pharmaceutical drugs may be used for medical and non-medical purposes.

- The medical use of pharmaceuticals includes the use of over-the-counter and prescription-only drugs as directed and for genuine medical purposes.
- The non-medical use of pharmaceuticals includes the use of over-the-counter or prescription-only drugs for non-therapeutic purposes, or prescription only drugs without a valid prescription (Barrett et al. 2008).

The term 'misuse' is often used to refer to a broader category of non-medical use. 'Misuse' often infers negative connotations, and assumes that people are knowingly administering pharmaceutical drugs incorrectly, and/or for non-medical purposes, which is not always the case. Misuse refers to:

- the non-medical use of pharmaceuticals
- the use of pharmaceuticals for genuine medical purposes:
  - without a valid prescription
  - prescribed at excessive quantities or frequencies
  - due to a drug dependence that has developed following medical treatment (iatrogenic dependence—see Box 3.2).

Pharmaceuticals that are commonly used for non-medical purposes, and held to be the cause of the most harm are the focus of this report, including those classified as opioid analgesics and benzodiazepines. The Australian Bureau of Statistics (ABS) Australian Standard Classification of Drugs of Concern classifies these drug types as:

- **opioid analgesics**—commonly prescribed for pain management, and the treatment of heroin and other opioid addictions; the most common forms of opioids prescribed and dispensed in Australia are oxycodone, codeine, tramadol, and buprenorphine
- **benzodiazepines**—commonly prescribed to help people sleep and treat stress and anxiety. Internationally, definitions of the non-medical use of pharmaceuticals in the USA and Canada include the non-medical use of stimulants such as methylphenidate in addition to opioids and analgesics and benzodiazepines. As the misuse of pharmaceutical stimulants is less prevalent in Australia, it is not included in this report.

As there are various definitions of what constitutes pharmaceutical misuse, it is often not possible to distinguish between types of misuse from the data sources available. This report uses the term 'non-medical use' for greater specificity, and to align with the definitions adopted in the National Drug Strategy Household Survey. But it should be noted that other data sources presented in this report might not be explicitly related to non-medical use, and might include broader conceptions of misuse, such as iatrogenic dependence, or capture people who use pharmaceuticals as directed.

General population prevalence data used in this report (sourced from the NDSHS) are based on self-reports informed by the definition of the non-medical use of pharmaceuticals described in this box, with the exception of non-opioid over-the-counter medicines. As this information relates to self-reported non-medical use of pharmaceuticals, the rates are likely to be an underestimate of actual prevalence. This is because the survey does not capture people who use pharmaceuticals as directed for medical purposes, but experience harms, or develop dependency similar to those who are using for non-medical purposes.

# Policy context

In response to the growing problem of the use of pharmaceuticals for non-medical purposes in Australia, governments have taken action to implement initiatives that aim to prevent and treat the non-medical use of pharmaceuticals. This section provides a broad overview of the policies and strategies aimed at reducing harms related to the non-medical use of pharmaceuticals.

## The National Drug Strategy

Since 1985, the National Drug Strategy (NDS) has provided the overarching framework for a consistent and coordinated approach to identifying national priorities related to alcohol, tobacco, and other drugs. The NDS 2017–2026 is the 7th iteration, and provides a framework to guide actions by governments—in partnership with service providers and the community—to minimise harm through effective demand, supply, and harm reduction strategies.

The non-medical use of pharmaceuticals is a priority issue identified in the NDS due to the widespread prevalence of the problem in Australia, and the associated harms to individuals and the broader community.

Supply reduction is a key evidence-based harm minimisation strategy to tackle the non-medical use of pharmaceutical drugs. Strategies in the NDS include:

- regulating retail sale, including licencing schemes for health professionals who sell pharmaceuticals
- electronic prescriptions to minimise fraud and enable real-time monitoring
- reporting of prescribing and dispensing events.

Several sub-strategies in the NDS provide further direction. While some of these strategies were developed as part of the previous iteration of the NDS, the objectives continue to guide the overarching goals in the NDS 2017–2026:

- The *National pharmaceutical drug misuse framework for action* (2012–2015) was released under the 2010–2015 NDS in response to the significant rise in the prescribing of opioid medications. The goals of the framework were to reduce the non-medical use of pharmaceutical drugs and associated harms in Australia, and to improve the quality use of pharmaceutical drugs, without stigmatisation or limiting their accessibility for therapeutic use.
- The *National Pain Strategy* was released in 2010, and was led by the Australian and New Zealand College of Anaesthetists' Faculty of Pain Medicine, the Australian Pain Society, and Chronic Pain Australia. The strategy provides guidance for treatment and management of acute, chronic, and cancer pain. Effective pain management is likely to minimise the potential use of opioids for non-medical purposes. The goals of the pain strategy are:
  - people in pain should be a national health priority
  - consumers should be knowledgeable, empowered, and supported
  - professionals should be skilled, and care should be best practice and based on evidence
  - interdisciplinary care is accessible at all levels
  - the sector continues to be researched, evaluated and improved.

## Real-time prescription monitoring

In July 2017, the Australian Government committed \$16 million for a national real-time monitoring system for select Schedule 8 medicines (see Glossary). This builds on earlier development work by state and territory governments, as part of a project funded under the Fifth Community Pharmacy Agreement (2010–2015).

The system will provide an instant alert to pharmacists and doctors if patients are receiving multiple supplies of prescription-only medicines. It will initially monitor controlled medicines (designated Schedule 8 medicines) that are particularly susceptible to non-medical use and dependence, including morphine, oxycodone, dexamphetamine, and alprazolam.

The system aims to help doctors and pharmacists identify patients who are at risk of harm due to dependency or non-medical use of controlled medicines, and those who are diverting these medicines. Similar initiatives, such as Prescription Drug Monitoring Programs, have been rolled out across the USA. Research shows these programs can reduce individuals' opportunity to access pharmaceuticals from multiple health-care professionals for non-medical use (Ali et al. 2017).

## Restricting access to codeine medicines

Medicine containing codeine can be effective when administered over short periods, but it can commonly be used for non-medical purposes. Some codeine-based medicines are available over the counter for consumers to self-administer for short-term treatment.

Codeine-based medicines containing combination non-prescription analgesics (like Nurofen Plus, Panadeine) are particularly susceptible to non-medical use and dependence, as they are readily available and can be addictive (Neilsen et al. 2010). Longer-term use of codeine based medicines can cause significant harms, such as liver damage, gastric ulcers, and even death (Robinson et al. 2010).

The National Opioid Pharmacotherapy Statistics Annual Data collection shows that in June 2016, 17.1% of clients undergoing opioid substitution treatment for a known opioid analgesic were dependent on codeine, up from 12.7% in 2014 (AIHW 2017c). The majority of these clients reported heroin as their primary opioid drug of dependence (63% of clients in 2016).

Given evidence of rising public harm, the Therapeutic Goods Administration (TGA) is restricting access to over-the-counter opioid medicines to prescription only from 1 February 2018 (TGA 2016b).

Similar restrictions are in place in the USA, most of Europe, and several other countries. The TGA commissioned a report by consulting company KPMG to assess the potential economic, social, and regulatory impacts of changing the scheduling of medicines containing codeine (TGA 2016a).

The report found the proposed regulatory changes could initially increase the costs to consumers for extra visits to health-care professionals, but could also reduce many out of pocket expenses for consumers. The report found it would likely result in reduced use of low-dose codeine, more substitution for other cheaper over-the-counter products, and more opportunities for doctors to consult on effective pain management.

## Data sources

Several data sources have been used in this report, and these are outlined in Appendix A. Data used in this report are not exhaustive. All data sources have limitations, and, although they represent significant proportions of the Australian population, there are some gaps in the scope of what they cover.

The NDSHS provides detailed information about non-medical pharmaceutical in Australia, which is presented in this report (see Appendix A for detailed information about the NDSHS).

Among its findings is that the most common forms of prescription drugs in Australia used for non-medical purposes over the past 15 years are painkillers/analgesics and opioids (referred to in this report as opioid analgesics), and tranquillisers/sleeping pills (referred to in this report as benzodiazepines) (AIHW 2017b).

The use of these pharmaceuticals outside the directed use (for example, dose or frequency) or in combination with alcohol and/or other drugs may cause considerable harm (ACIC 2017a).

The Alcohol and Other Drug Treatment Services National Minimum Data Set (AODTS NMDS) is a comprehensive administrative data set of episodes of people receiving services for their drug and alcohol-related issues.

The Pharmaceutical Benefits Scheme (PBS) provides an administrative data set that captures most prescription medicines dispensed and subsidised by the Australian Government. It provides detailed information about the provider and prescriber, dispensed prescription drugs, and demographic information of patients.

Supplementary tables referred to in this report (tables with the prefix 'S') are available for download from <https://www.aihw.gov.au/reports/illicit-use-of-drugs/non-medical-use-pharmaceuticals/>. See Table 1.1 and Appendix A for more information about the data sources used in this report.

**Table 1.1: Description of data sources used in this report**

| Data source                          | Reference period                        | Sample/scope  | Type of data  |
|--------------------------------------|---|---|---|
| NDSHS                                | Every 3 years since 1985                | Sample survey of Australian residents aged 12 and over or 14 and over (those aged 12–13 have been surveyed since 2004) from all states and territories.<br>Sample size: about 24,000 in 2016.<br>Scope: Residential household, excluding people in institutional settings, hostels, and motels, or who are homeless. Foreign language interviews not done.<br>Households are selected in a multistage, stratified area random sample.   | Self-reported information on prevalence of the use of pharmaceuticals for non-medical purposes, and attitudes from people aged 12 and over.                                     |
| AODTS<br>NMDS                        | Every financial year since 2003–04      | Alcohol and other drug treatment services that are publicly-funded—either by state and territory governments (the majority of services), or by the Australian Government under the Non-Government Organisation Treatment Grants Program (referred to as Drug and Alcohol Program from 2016–17 onwards).<br>796 agencies in 2015–16.<br>Includes clients aged 10 and over.   | Details on closed treatment episodes for pharmaceuticals as principal drug of concern, or additional drug of concern.<br>Type and length of treatment and reason for cessation. |
| PBS data set (AIHW holding)          | Financial years from 2010–11 to 2014–15 | The PBS provides timely, reliable, and affordable access to necessary medicines for Australians. The administrative data set captures the prescription medicines dispensed and subsidised by the Australian Government.<br><br>Does not include PBS under copayment prescriptions, Repatriation Pharmaceutical Benefits Scheme claims, and PBS drugs supplied under special arrangements (for example clients of eligible Aboriginal Health Services in remote areas of Australia). | Number of opioid analgesic prescriptions dispensed.<br>Number of benzodiazepine prescriptions dispensed.<br>Number of people accessing prescriptions.                           |
| National Hospital Morbidity Database | Financial year from 2003–04 to 2015–16  | The National Hospital Morbidity Database includes almost all public hospitals that provided data for this database in 2015–16. The exception was an early parenting centre in the Australian Capital Territory. The great majority of private hospitals also provided data, apart from the private free-standing day hospital facilities in the Australian Capital Territory.   | Drug-related hospital separations with a drug-related principal diagnosis.  |
| Australian Health Survey             | From 1989–90 to 2014–15                 | The Australian Health Survey is a household survey of adults and children from all states and territories.<br>Sample size: about 15,000 dwellings.<br>Scope: Residential household, excluding household visitors, non-Australian residents, and people in institutional settings, hostels, and motels, or who are homeless.   | The health status of the population, including health risk factors (such as experience of pain), and demographic and socioeconomic characteristics.                             |
| ABS Causes of Death                  | Annually                                | The ABS Causes of Death reports on the number of deaths by state or territory of Australia, sex, selected age groups, and cause of death classified to the World Health Organization's International Classification of Diseases (ICD).<br><br>In 2016, 158,504 deaths were registered.  | Causes of death by underlying cause, leading causes, and multiple causes.<br><br>In 2016, includes drug-induced deaths by drug type, age, and sex.                              |

## 2 Availability of pharmaceuticals

Pharmaceutical drugs are legal, and research shows their use for non-medical purposes is 1 of the more widely accepted uses of drugs by the general community (AIHW 2017b) (see Box 1.1 for more information about pharmaceuticals and their non-medical use).

The way people access pharmaceutical drugs varies. Depending on how each pharmaceutical is scheduled by the TGA, they can be sourced via a doctor's prescription, over the counter at a pharmacy, or through health-care practitioners in some circumstances (such as to treat drug dependency). As such, understanding the availability of pharmaceuticals, and how they can be used for non-medical purposes is complex.

PBS claims data are used to understand the trends in prescriptions dispensed for pharmaceuticals. The PBS provides timely, reliable, and affordable access to necessary medicines for Australians. The Department of Human Services records all prescriptions dispensed under the PBS, and these are used for reporting purposes.

Data on over-the-counter medicines, such as those containing codeine, are not captured, as they are not a part of the PBS (Department of Health 2016). The PBS subsidises an estimated 80% of all prescription drugs dispensed in Australia (Monheit et al. 2016), so it is a good indicator of the available supply of prescription pharmaceuticals.

This section reports on trends in availability of prescription opioids and benzodiazepines in the Australian community, based on AIHW analysis of PBS claims data (see Appendix A for more information about the PBS data held by the AIHW).

### Opioids

In Australia, opioid analgesics are some of the most commonly used pharmaceuticals for non-medical purposes, and the number of prescriptions dispensed for opioid analgesics in Australia rose between 2010–11 and 2014–15 (Table S1). Opioid analgesics are commonly prescribed for pain management, and the treatment of heroin and other opioid dependence—commonly referred to as opioid substitution treatment or pharmacotherapy (ACIC 2017a). But data presented in this section do not include opioid substitution treatment, as this is accessed separately to the PBS. The most common forms of opioids prescribed and dispensed between 2010–11 and 2014–15 were oxycodone, codeine, tramadol, and buprenorphine (see Table 2.1 for a description of each type of opioid).

**Table 2.1: Commonly used opioid pharmaceuticals**

| Pharmaceutical type | Example of common brand names                     | Description  |
|---------------------|---|--|
| Morphine            | MS Contin®, Anamorph®, Kapanol®                   | Main component of opium, powerful narcotic analgesic.  |
| Codeine             | Panadeine Forte®, Codral Forte®, Mersyndol Forte® | An extract of opium, which is not as strong as morphine.   |
| Buprenorphine       | Subutex®, Suboxone®, Temgesic®                    | Used to treat pain and withdrawal from heroin, and in maintenance treatment to block the effects of other opioids. |
| Oxycodone           | OxyContin®, Endone®                               | A semi-synthetic opioid analgesic similar to morphine.   |
| Methadone           |   | Synthetic narcotic analgesic used in the treatment of opioid pain and dependence. Includes physeptone.             |

Note: Not all brand drugs listed in this table are available under the PBS.

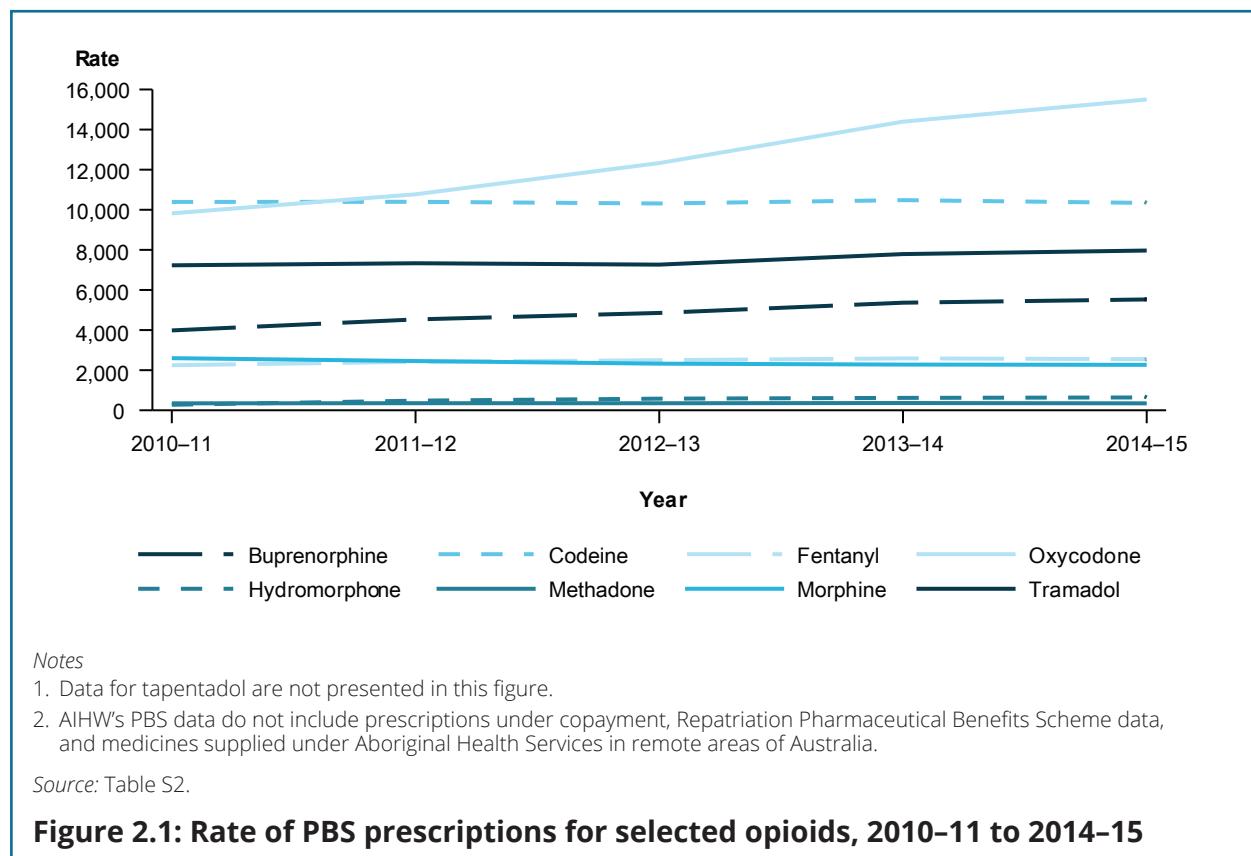
Source: ACIC 2017a.

## PBS opioid prescriptions dispensed

In 2014–15, 11.12 million PBS prescriptions were dispensed for opioids, a rate of 45,600 per 100,000 population. This represents a 24% rise in the rate of prescriptions dispensed in 2010–11 (36,900 per 100,000 population) (tables S1 and S2).

Oxycodone (and oxycodone/naloxone) was the most commonly prescribed opioid analgesic in 2014–15, accounting for about one-third of prescriptions dispensed (34% or 3.78 million prescriptions). This was a rise from 27% of prescriptions (2.25 million) in 2010–11.

The rate of prescriptions for oxycodone rose from 9,800 per 100,000 population in 2010–11 to 15,500 per 100,000 in 2014–15, a 60% rise (Figure 2.1).



The number of dispensed prescriptions for buprenorphine (and buprenorphine/naloxone) rose by 48%, from 914,000 prescriptions in 2010–11 to 1.35 million prescriptions in 2014–15 (Table S1). The rate also rose substantially, from 4,000 per 100,000 population in 2010–11 to 5,500 per 100,000 in 2014–15 (Figure 2.1).

The number of prescriptions dispensed also rose for fentanyl (up 21%) and tramadol (up 17%) over the same time period (Table S1). Between 2010–11 and 2014–15, the rate of dispensed prescriptions for fentanyl rose from 2,250 to 2,550 per 100,000 population, and for tramadol, it rose from 7,230 to 7,970 per 100,000 (Table S2).

Nearly one-quarter (23%) of prescriptions dispensed in 2014–15 were for codeine (and codeine/paracetamol). This represents 2.52 million prescriptions, or 10,300 prescriptions per 100,000 population (tables S1 and S2). But since 2010–11, the rate has remained relatively stable, at about 10,300–10,500 per 100,000 population.

Similarly, the number and rate of prescriptions dispensed for methadone were stable over the 5 year period, at just over 80,000 prescriptions, or 350 prescriptions per 100,000 population.

Morphine was the only opioid to show a decline over the period in the number (down 7%) and rate (from 2,600 to 2,270 per 100,000) of prescriptions dispensed. A small number of prescriptions were dispensed in 2014–15 for hydromorphone (156,000).

Between 2010–11 and 2014–15, the number of unique patients who had an opioid prescription dispensed rose by 20%, from 1.35 to 1.62 million patients. This equates to a rise in the proportion of the Australian population getting an opioid prescription from 6.0% in 2010–11 to 6.8% in 2014–15 (Table S3).

The proportion of patients who had 25 or more prescriptions dispensed rose slightly, from 5.3% in 2010–11 to 6.7% in 2014–15, while the total proportion of prescriptions attributed to patients receiving 25 or more prescriptions rose from 35% to 39%.

These data show that substantially more opioid analgesics are being prescribed and dispensed than previously. Several factors might explain this increase, including:

- longer survival periods for cancer sufferers
- ageing population, and a growing number of people with chronic pain (ABS 2015)
- community expectations of coping with chronic pain (Monheit et al. 2016).

## Benzodiazepines

Benzodiazepines are central nervous system depressants that are commonly prescribed to help people sleep and treat stress and anxiety (ACIC 2017a).

They are the second most common form of pharmaceutical to be used for non-medical purposes in Australia, after opioid analgesics (AIHW 2017b). Table 2.2 details the most commonly used benzodiazepines.

From 2010–11 to 2014–15, the main forms of benzodiazepines that were prescribed and dispensed in Australia were diazepam, temazepam, and oxazepam (Table S4).

**Table 2.2: Commonly used benzodiazepine pharmaceuticals**

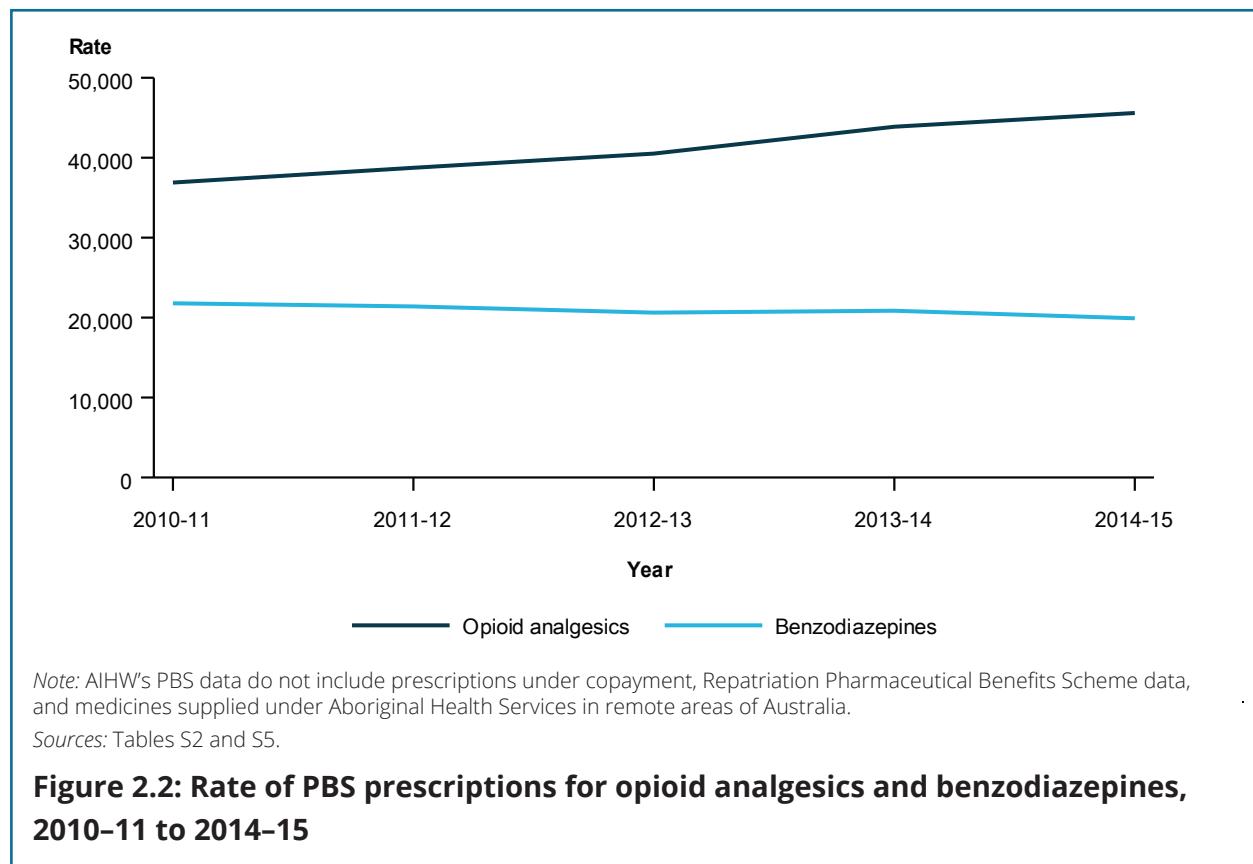
| Pharmaceutical type | Example of common brand names | Description   |
|---------------------|-------------------------------|---|
| Alprazolam          | Xanax®, Alprazolam®, Tafil®   | Sedative commonly used to treat anxiety with symptoms of depression, and panic disorder.                    |
| Clonazepam          | Rivotril®, Paxam®             | Sedative to treat epilepsy.   |
| Diazepam            | Valium®, Ducene®, Antenex®    | Anxiolytic and sedative that can be used to treat anxiety, muscle spasms, seizures, and alcohol withdrawal. |
| Nitrazepam          | Mogadon®, Alodorm®, Dormican® | Hypnotic drug for treatment of insomnia.  |
| Oxazepam            | Serepax®, Miralax®            | Sedative for treatment of anxiety with depression, and symptoms of alcohol withdrawal.                      |
| Temazepam           | Normison®, Temaze®            | Sedative to treat insomnia.   |

Note: Not all brand drugs listed in this table are available under the PBS.

Sources: ACIC 2017a; DCPC 2007.

## PBS benzodiazepine prescriptions dispensed

In 2014–15, about 4.86 million prescriptions were dispensed for benzodiazepines, a rate of 19,911 per 100,000 population (tables S4 and S5). Between 2010–11 and 2014–15, the number of prescriptions dispensed for benzodiazepines remained relatively stable, but the rate fell from 21,800 per 100,000 population (Figure 2.2). By contrast, the rate and number of prescriptions for opioid analgesics continued to rise (tables S1 and S2).

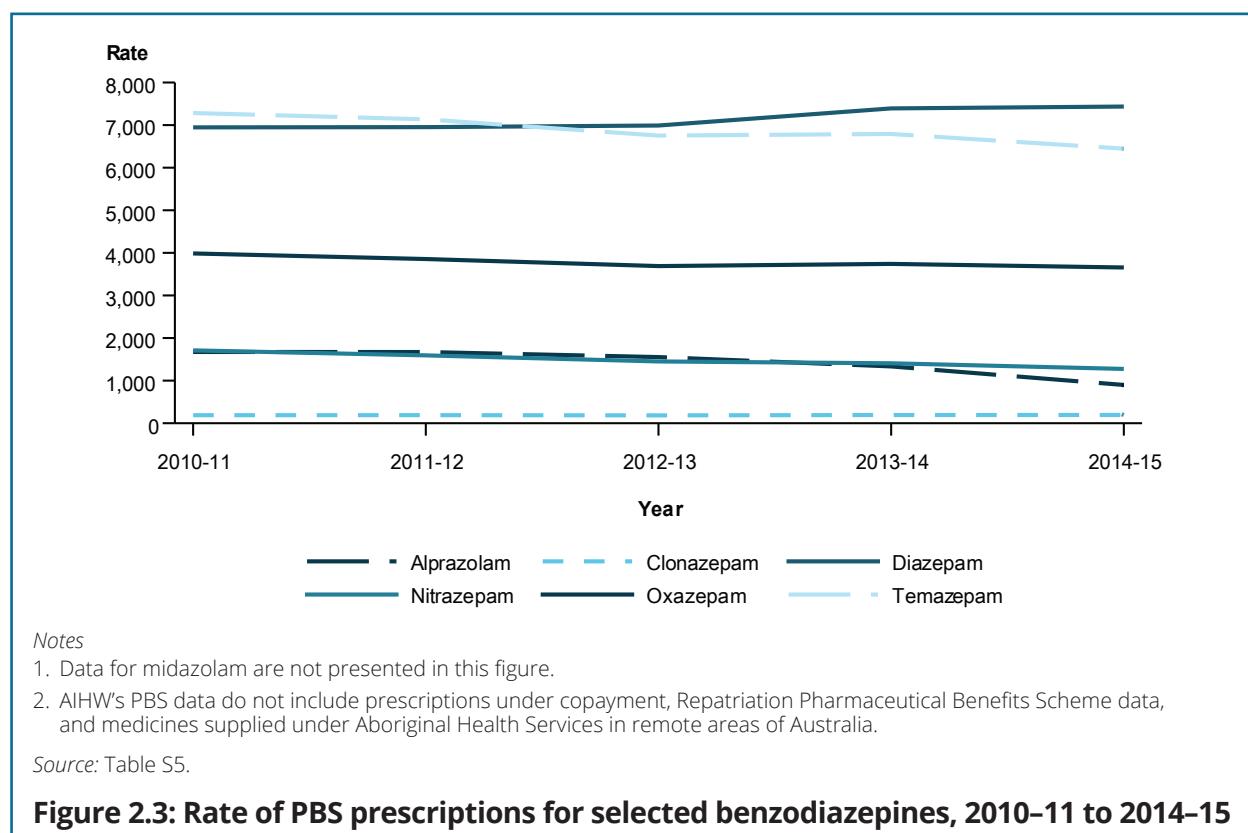


In 2014–15, more than one-third (37%) of dispensed benzodiazepine prescriptions were for diazepam (1.81 million prescriptions) (Figure 2.3). Since 2010–11, diazepam has been the only form of benzodiazepine for which the number (up 14%) and rate of prescriptions dispensed rose substantially (from 6,950 to 7,440 per 100,000 population) (tables S4 and S5).

Temazepam was the second most commonly prescribed benzodiazepine dispensed in 2014–15, accounting for one-third of prescriptions (32% or 1.57 million). Between 2010–11 and 2014–15, the number of prescriptions dispensed for temazepam fell by about 100,000, and the rate fell from 7,280 to 6,450 per 100,000 population (tables S4 and S5).

Other common forms of prescribed benzodiazepines include oxazepam (892,000 prescriptions dispensed in 2014–15), nitrazepam (311,000), and alprazolam (219,000). Over the 5-year period, the number and rate of dispensed prescriptions for these forms of benzodiazepines fell (Figure 2.3; Table S5).

In contrast to opioid patients, the number of unique patients remained relatively stable—940,000 Australians had at least 1 prescription for a benzodiazepine in 2014–15, up 1.4% from 2010–11 (Table S6). The proportion of patients receiving 25 or more prescriptions remained stable, at about 2.7% over the 5-year period.



# 3 The non-medical use of pharmaceuticals in Australia

The non-medical use of pharmaceuticals includes the consumption of a prescription or over-the-counter drug for non-therapeutic purposes, or other than directed by a registered health-care professional (see Box 1.1).

Pharmaceutical drugs intended for legitimate use might also be diverted from legal sources to the illegal market for non-medical purposes (Inciardi et al. 2007), such as:

for recreational use, or for euphoric or mood enhancing effects

- to increase the effects of illicit drugs or alcohol
- to self-medicate illness, injury, or drug dependence
- to reduce the symptoms of withdrawal from illicit drugs or alcohol
- to improve performance (ACIC 2017a).

## Levels of non-medical use

The 2016 NDSHS found that about 1 million Australians aged 14 and over (or 4.8%) had used pharmaceuticals for non-medical purposes (excluding over-the-counter non-opioid medicines) in the previous 12 months (AIHW 2017b), a rise from 4.7% in 2013, and 3.7% in 2007 (including over-the-counter non-opioid medicines) (AIHW 2017b).

The highest levels of pharmaceutical use for non-medical purposes across Australia were found in Tasmania (5.6%) and South Australia (5.5%), while the lowest levels were in New South Wales, Victoria, and the Australian Capital Territory (4.6% each).

The levels of recent use (in the previous 12 months) of pharmaceuticals for non-medical purposes was higher than that of all illicit drugs, except for cannabis (10.4%). For example, recent non-medical use of pharmaceuticals was higher than for cocaine (2.5%), ecstasy (2.2%), meth/amphetamine (1.4%), and hallucinogens (1%).

Most Australians do not perceive the non-medical use of pharmaceuticals to be acceptable. But in 2016, more than one-quarter (28%) of Australians aged 14 and over perceived the non-medical use of pharmaceuticals to be acceptable, a rise from 23% in 2013. About twice as many people approved of the use of pharmaceutical drugs for non-medical purposes as people who approved of the use of tobacco (15.7%) and cannabis (14.5%).

## Types of pharmaceuticals used for non-medical purposes

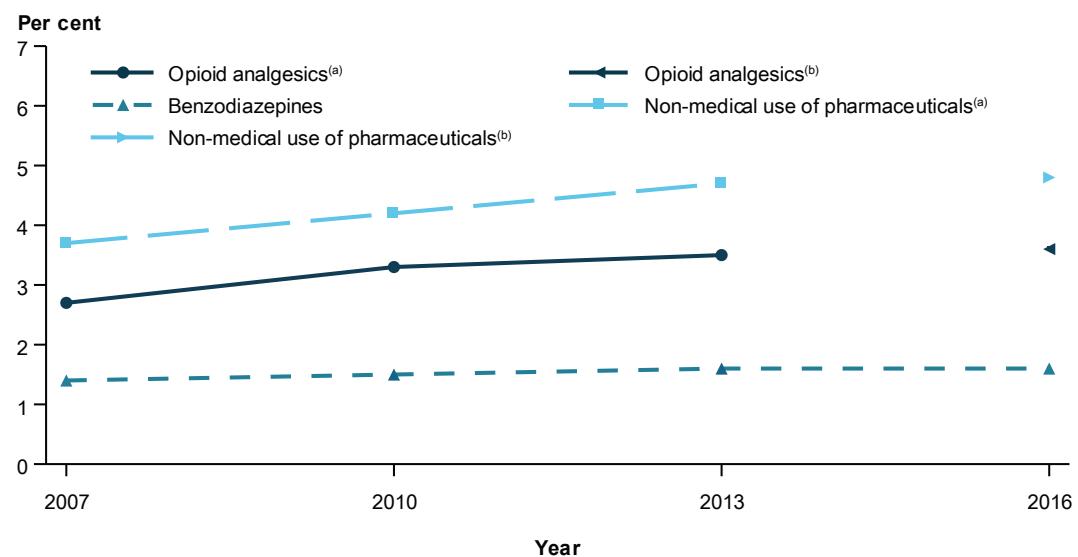
In 2016, opioid analgesics, such as codeine and oxycodone, were the most common group of pharmaceuticals recently used for non-medical purposes among people aged 14 and over (3.6%). This trend has been consistent over time. Benzodiazepines were the second most common group (1.6%), and have been since 2001 (Figure 3.1).

Within the group of pharmaceuticals that made up opioid analgesics, the most commonly used for non-medical purposes in 2016 were over-the-counter codeine products (2.5%). About 1.3% of people aged 14 and over had recently used prescription codeine products—such as Panadeine Forte—for non-medical purposes. The misuse of oxycodone (0.6%), tramadol (0.3%), morphine (0.1%), and fentanyl (less than 0.1%) was less common (Table S7).

## Changes over time

Recent non-medical use of opioid analgesics rose from 2.7% in 2007 to 3.5% in 2013, while the use of benzodiazepines remained relatively stable for the same period (Figure 3.1).

But it is important to note that in 2016, changes were made to the way the NDSHS captures non-medical use of opioid analgesics. This means that data for opioid analgesics are not directly comparable over time (see Box 3.1 for more information about the changes).



(a) Includes over-the-counter pharmaceuticals, and refers to the combined rates from the 'pain-killer/analgesics' and 'other opiates' sections.

(b) Excludes over-the-counter pharmaceuticals.

### Notes

1. Over-the-counter medicines include paracetamol, aspirin, and other non-opioid over-the-counter pain-killers/analgesics.
2. Data for steroids is not presented separately in this figure, but is incorporated into 'non-medical use of pharmaceuticals'.
3. The non-medical use of methadone and buprenorphine have been incorporated into 'opioid and analgesics'.
4. In 2016, changes were made to the way the NDSHS captures non-medical use of painkillers/analgesics and other opioids. Data for painkillers/analgesics and other opioids are not directly comparable. As a result, any comparison across time for any pharmaceutical must be interpreted with caution, as the painkillers/analgesics and other opioids is the largest contributor to this result.

Source: AIHW 2017b.

**Figure 3.1: Proportion of people aged 14 and over who used pharmaceuticals for non-medical purpose in the previous 12 months, 2007–2016 (%)**

### **Box 3.1: Changes to pharmaceutical questions in the 2016 NDSHS**

In 2016, the way the NDSHS captured non-medical use of painkillers/analgesics and opioids changed to better reflect how these substances are used and understood in the community.

Specifically:

- over-the-counter non-opioid analgesics, such as paracetamol and aspirin, were removed from the section, because they are not known to be misused for cosmetic purposes, to induce or increase a drug experience, or to increase performance
- the previously separate 'painkillers/analgesics' and 'other opiates/opioids' sections of the survey were combined, to avoid capturing users of prescription pain-killer/opiates such as oxycodone in 2 sections
- categories of analgesics are now defined by their most psychoactive ingredient, rather than their brand name, and brand names are only presented as examples, bringing the section in line with other pharmaceuticals captured in the survey.

There were no changes to the tranquillisers/sleeping pills, steroids, or methadone/buprenorphine sections of the questionnaire.

## **Obtaining pharmaceuticals**

There are many ways to obtain pharmaceuticals for non-medical purposes, including:

- opportunistic means (for example, from family members or friends who have been legitimately prescribed these medications)
- stealing, forging, or altering prescriptions, which are then used to unlawfully obtain the drugs
- stealing from doctors' surgeries and pharmacies
- visiting multiple practitioners or pharmacies to obtain the same medication to use for non-medical purposes
- buying from street-based drug markets or dealers
- buying online
- health-care professionals self-prescribing or otherwise misappropriating drugs from their workplace (DCPC 2007).

Analysis of the 2016 NDSHS data showed that about half (52%) of those who had recently used opioid analgesics for non-medical purposes usually obtained them by purchasing over-the-counter pharmaceutical drugs at a pharmacy. About 1 in 6 (18.2%) usually obtained opioid analgesics with a medical prescription (AIHW 2017b).

People who used benzodiazepines (36%) were about twice as likely as those who used opioid analgesics (18.2%) to usually obtain them with a medical prescription. Similarly, they were much more likely to obtain them via a friend, relative, or partner (41% compared with 20%).

A small proportion of people who recently used opioid analgesics (2.6%) and benzodiazepines (5.5%) for non-medical purposes acquired these pharmaceuticals from visiting multiple practitioners or pharmacies, but these results should be interpreted with caution due to the wide margin of error.

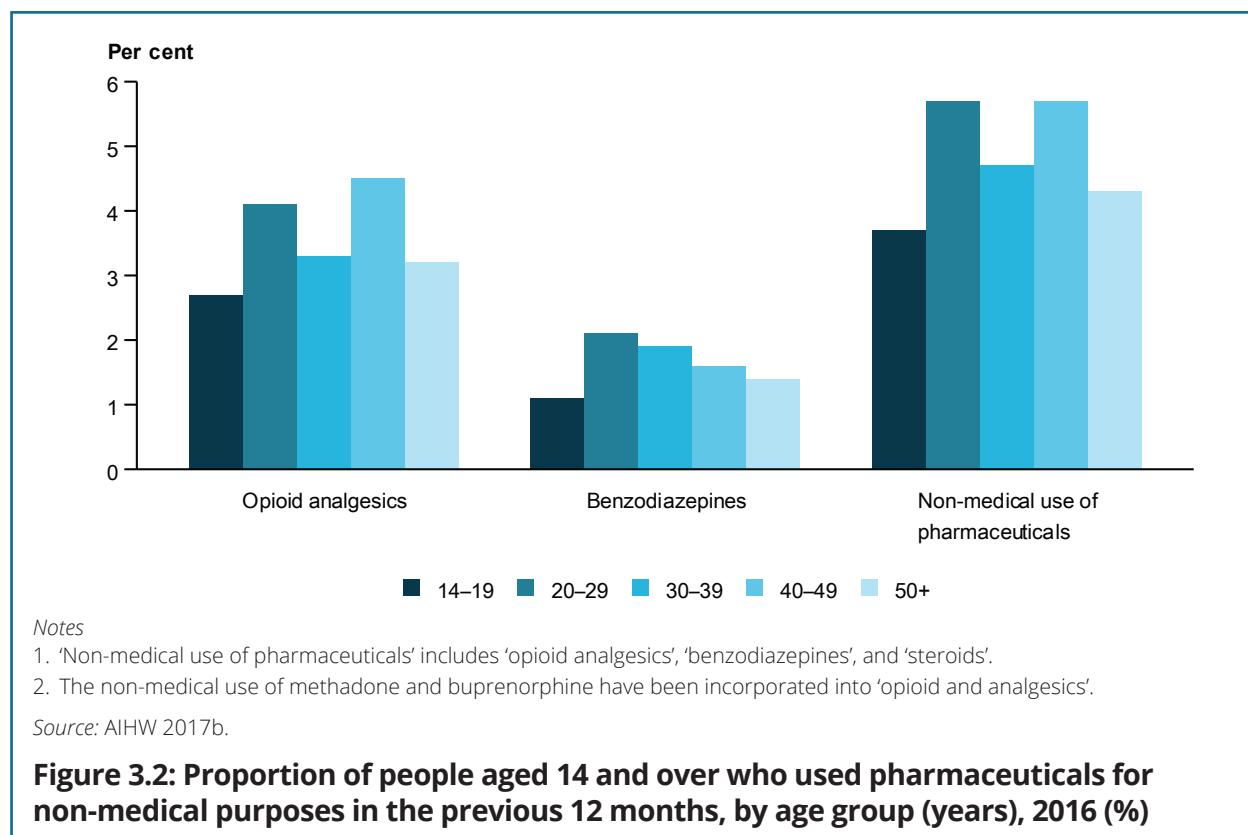
Unsurprisingly, pharmaceuticals, such as opioid analgesics (2.4%) and benzodiazepines (5.5%), were far less likely to be acquired from a dealer than illicit drugs, such as meth/amphetamine (33%).

# Who used pharmaceuticals for non-medical purposes?

In 2016, Australians aged in their 20s and 40s had the highest levels of non-medical use of pharmaceuticals (5.7%), while teenagers (aged 14–19) had the lowest levels (3.7%) (Figure 3.2).

People in their 40s (4.5%) had the highest proportion of non-medical use of opioid analgesics, while teenagers (aged 14–19) had the lowest (2.7%). People in their 20s (2.1%) had the highest proportion of non-medical use of benzodiazepines, while teenagers (aged 14–19) had the lowest (1.1%) (Figure 3.2).

In 2016, rates of recent use of pharmaceuticals for non-medical purposes were similar for males (4.9%) and females (4.6%). Males in their 20s had the highest rates of non-medical use of pharmaceuticals (6.0%) (AIHW 2017b).



## Comparison with illicit drug use

In 2016, people who used pharmaceuticals for non-medical purposes were aged 45 on average, compared with 34 for users of other drugs. Over time, people who use pharmaceuticals for non-medical purposes have steadily been getting older, with the average age rising from 39 in 2001 to 45 in 2016 (AIHW 2017b).

## Frequency of use

Of those who recently used pharmaceuticals for non-medical purposes, more than one quarter (28%) reported doing so daily or weekly. This was second only to the use of cannabis (36%), and ahead of meth/amphetamines (20%). Of those who recently used pharmaceuticals for non-medical purposes:

- females (31%) were more likely than males (26%) to use weekly, or more often
- females were more like likely to use:
  - opioid analgesics weekly or more often (33% compared with 26% of males)
  - benzodiazepines weekly or more often (24% compared with 16.1% of males)
- people in their 50s (56%) were more likely than those in any other age group to use pharmaceuticals for non-medical purposes at least once a month or more
- teenagers (aged 14–19) were the least likely to use pharmaceuticals for non-medical purposes once a month or more (25%) (AIHW 2017b).

## Health status

More than half of Australians aged 15 and over reported that their current health status was excellent or very good (56%) (ABS 2015). But adults aged 18 and over who had recently used a pharmaceutical for non-medical purposes were less likely to assess their health status as excellent or very good (47%) compared with those who had not (56%), or those who had recently used any other illicit drugs (54%) (AIHW 2017b).

The self-reported health status of people who had recently used opioid analgesics for non-medical purposes was lower (44% excellent or very good) than those who recently used benzodiazepines (52%) (Table S8).

## Experience of pain

In 2014–15, an estimated 12.1 million Australians aged 18 and over reported in the Australian Health Survey that they had experienced bodily pain in the previous 4 weeks (ABS 2015). Of those, 1.5 million said the pain was severe or very severe. In the Australian Health Survey, respondents' experience of bodily pain and the level of severity is based on self-assessment of their pain (and includes pain from any and all causes).

With such a high number of Australians experiencing pain, the demand to access effective pharmaceutical medications is high.

People who had used pharmaceuticals for non-medical purposes reported higher rates of health conditions than those who did not, particularly for those who reported chronic pain (15.9% compared with 10.3%).

A similar proportion of people who had recently misused opioid analgesics (15.9%) and benzodiazepines (14.7%) reported chronic pain (Table S8).

## Mental health and psychological distress

In 2016, almost one-third (29%) of people who recently used pharmaceuticals for non-medical purposes reported having a mental illness, compared with 15.2% of those who had not. Adults who reported non-medical use of benzodiazepines were more likely to report a mental illness (35%)—including anxiety disorders and depression—than those who reported non-medical use of opioid analgesics (29%) (Table S8).

Adults who recently used a pharmaceutical for non-medical purposes were twice as likely to report high or very high levels of psychological distress (24.1%) as those who had not (10.9%). Adults who used benzodiazepines (28%) for non-medical purposes were slightly more likely than those who used opioid analgesics (24%) to experience high or very high levels of psychological distress. Overall, similar proportions of recent users of pharmaceuticals for non-medical purposes (24%) and users of other illicit drugs reported having high or very high levels of psychological distress (22%).

## Addictive propensity

Some pharmaceutical drugs can be very addictive. Among people aged 14 and over who recently used opioid analgesics for non-medical purposes, about 1 in 10 (10.6%) said that they could not stop or cut down their use even if they wanted to. Similarly, 8.0% of recent users of benzodiazepines for non-medical purposes said they could not reduce or cease their use (AIHW 2017b) (see Box 3.2 for more information on iatrogenic dependence).

### **Box 3.2: Iatrogenic dependence**

Iatrogenic dependence occurs when an individual develops a physical dependence to a pharmaceutical drug after using it to treat a legitimate medical issue.

In Australia, Schedule 8 drugs—such as oxycodone, fentanyl, and alprazolam—are intended for therapeutic use. But these drugs have high potential for abuse and addiction, and are often the most susceptible to producing iatrogenic dependence. Symptoms of dependence can include difficulty in controlling use, craving, persisting despite adverse consequences, tolerance, and withdrawal (WHO 1993).

People with iatrogenic dependence might be consuming pharmaceutical drugs in excessive quantities or frequencies to support their dependence. Importantly, this form of ‘misuse’ differs to other forms of non-medical use, in that the pharmaceutical drugs are not being deliberately abused to produce certain desired effects, such as euphoria.

There are challenges in estimating the prevalence of iatrogenic dependence in Australia, due to variations in definitions of ‘dependence’. One study found that 8–25% of people taking opioids for chronic non-cancer pain for more than 6 weeks met the criteria for some form of dependence, with variations according to the definition adopted (Campbell et al. 2016). Another study found that 1 in 5 people using long-term opioids met the criteria for substance use disorder, and about half of those met the diagnostic criteria for pharmaceutical opioid dependence (Degenhardt et al. 2015).

There might be barriers to treatment for people experiencing iatrogenic dependence, due to perceived stigmas and lower social support (Cooper et al. 2017). It is often difficult to identify this group from official data sets, though it is important to recognise the potential harms associated with iatrogenic dependence.

Compared with users of illegal drugs, the proportion of people who recently used opioid analgesics for non-medical purposes, and said they could not stop or cut down even if they wanted to was the fourth highest, after heroin (44%), inhalants (35%), and meth/amphetamines (12.7%).

Overall, the proportions for people who reported that they could not reduce their use of opioid analgesics and benzodiazepines were similar to those for meth/amphetamine (12.7%) and marijuana/cannabis (9.5%).

## Multiple drug use

Multiple drug use among people who recently used a pharmaceutical drug for non-medical purposes was common, with almost 2 in 5 (39%) reporting that they had used at least 1 other illicit drug. Cannabis (30%) was the drug most commonly used in addition to a pharmaceutical in the previous 12 months, followed by ecstasy (14.0%), cocaine (13.1%), and meth/amphetamines (11.2%) (AIHW 2017b).

## At-risk groups

The non-medical use of pharmaceuticals among certain at-risk groups occurs at substantially higher levels than other groups in the general population. In this report, these groups are people in remote and disadvantaged socioeconomic areas, people who are unable to participate in the workforce, Aboriginal and Torres Strait Islander people, people who inject drugs, and people in the criminal justice system.

### People in remote and disadvantaged socioeconomic areas

Results from the National Wastewater Drug Monitoring Program cannot differentiate between licit and illicit use of pharmaceuticals. But the use of oxycodone and fentanyl in regional sites (those outside capital cities) was at significantly higher levels than in capital cities (ACIC 2017b).

These findings are consistent with the results of the 2016 NDSHS, which found people living in *Remote/Very remote* areas (8.0%) were 1.7 times as likely as those living in *Major cities* (4.6%) to have recently used a pharmaceutical for non-medical purposes.

In particular, use of opioid analgesics in these areas (6.6%) was twice as high as in *Major cities* (3.3%). Levels of recent benzodiazepine for non-medical purposes was similar, at 1.7% in *Remote/Very remote* areas and 1.8% in *Major cities* (Table S9). *Remote/Very remote* area data have a relative standard error of 25%–50%, and should be used with caution.

In 2016, Australians living in the most disadvantaged socioeconomic areas (that is, areas with the highest levels of unemployment, lowest incomes, and overcrowding according to the Index of Relative Socio-Economic Advantage and Disadvantage) were 1.4 times as likely as people in the most advantaged areas to have used a pharmaceutical for non-medical purposes (6.0% compared with 4.2%).

Opioid analgesics were more likely to have been used for non-medical purposes by people from the most disadvantaged socioeconomic areas (4.8%) than by people in the most advantaged areas (2.6%), while non-medical use of benzodiazepines was similar (1.8% each) (Table S10).

### People who are unable to participate in the workforce

A higher proportion of people who recently used a pharmaceutical for non-medical purposes reported that they were unable to work (7.8%), compared with those who were currently employed (5%) or unemployed (5.9%) (Table S12). This is likely to be related to the higher proportion of people who used a pharmaceutical for non-medical purposes reporting having chronic pain and or a mental illness.

People who were unable to participate in the workforce also reported higher rates of other drug use than the total population, including higher rates of daily smoking (30% compared with 12.2%), recent use of any illicit drug (24% compared with 15.6%), and cannabis (17.6% compared with 10.4%).

### Aboriginal and Torres Strait Islander people

The 2016 NDSHS showed that Indigenous Australians aged 14 and over (10.6%) were more likely than non-Indigenous Australians to have recently used a pharmaceutical for non-medical purposes (4.6%).

This includes opioid analgesics (8.6% of Indigenous Australians, compared with 3.4% of non-indigenous Australians), and benzodiazepines (3.0% of Indigenous Australians, compared with 1.6% of non-indigenous Australians) (Table S11).

Overall, Indigenous Australians were 2.3 times as likely as non-Indigenous Australians to have recently used a pharmaceutical for non-medical purposes. These results should be interpreted with caution, as Indigenous Australians comprise a small sample of the NDSHS (2.4% of the unweighted sample, or 568 respondents).

The 2014–15 National Aboriginal and Torres Strait Islander Social Survey found that the non-medical use of pharmaceuticals among Indigenous Australians was higher than reported in the NDSHS, with 12.6% of Indigenous Australians aged 15 and over having recently used a pharmaceutical for non-medical purposes (ABS 2016).

This difference could be due to methodological differences between the surveys. The NDSHS is not specifically designed to obtain reliable national estimates for Indigenous Australians, and only had a sample of about 568 Indigenous respondents, compared with 6,611 for the National Aboriginal and Torres Strait Islander Social Survey.

## People who inject drugs

The Illicit Drug Reporting Survey is a survey of people who regularly inject drugs. Injecting drug use is a high-risk activity, and blood borne viruses such as human immunodeficiency virus (HIV) and hepatitis C can be common in this population. Data for 2017 found that recent use of pharmaceuticals for non-medical purposes among this population was high compared with the general population (NDARC 2017).

Current injecting drug users, in the 6 months before the survey, reported illicit use of:

- benzodiazepines (32%)
- morphine (24%)
- oxycodone (17%)
- buprenorphine/naloxone film (14%)
- methadone (13%)
- buprenorphine (10%).

## People in the criminal justice system

Available data from the Drug Use Monitoring in Australia program and the National Prisoner Health Data Collection found that pharmaceutical use among police detainees and prisoners was high, compared with the general population.

In 2015–16, the Drug Use Monitoring in Australia program found that nearly one-quarter (24%) of police detainees tested positive (through urinalysis) to benzodiazepines. More than one-third (35%) of police detainees reported having used benzodiazepine in the previous 12 months.

About 1 in 10 detainees (11%) tested positive to at least 1 opiate in 2015–16, while 1 in 5 (20%) self-reported using opiates other than heroin (ACIC 2017a). These figures are likely to involve both a mixture of licit and illicit use of these pharmaceuticals.

The National Prisoner Health Data Collection highlighted that in the 12 months before entering prison, 13% of prison entrants in 2015 had used analgesics/painkillers for non-medical purposes. This was followed by the illicit use of tranquillisers/sleeping pills (11%), other analgesics (8%), and methadone/buprenorphine/ suboxone (4%) (AIHW 2015).

A total of 15% of prison entrants reported they had received opioid substitution treatment, while 7% of prison entrants, and 9% of people being discharged from prison were enrolled for opioid substitution treatment at the time of the survey, most commonly for methadone.

## 4 Harms from non-medical use of pharmaceuticals

The physical, mental, economic, and social harms associated with the non-medical use of pharmaceuticals are of concern to the broader community. These harms can include overdose (fatal and non-fatal), increased exposure to blood-borne pathogens (such as HIV), decreased cognitive function, psychiatric comorbidity, occlusion of blood vessels, gastro intestinal bleeding, impaired learning, exposure to violence, family breakdown, increased health-care costs, and crime (DCPC 2007; Nicholas et al. 2011).

This section reports on data from drug-related ambulance attendances, hospitalisations, and deaths. It shows that the use of pharmaceuticals for non-medical purposes causes considerable harm in the Australian community.

### Ambulance attendances

National data on drug-related ambulance attendances are currently not available, but Victorian data show that the level of harm from the non-medical use of pharmaceuticals is considerable.

In 2014–15, in Victoria, the rate of ambulance attendances involving the licit or illicit use of pharmaceuticals was 170.1 per 100,000 population (9,941 attendances). The rate of ambulance attendances involving any illicit drug was 154.7 per 100,000 population (9,038 attendances).

Of the pharmaceutical-related ambulance attendances, 2 in 5 (41%) involved benzodiazepines, and 1 in 10 (11%) involved opioid analgesics. A further, 4% were related to opioid pharmacotherapy drugs, like methadone and buprenorphine (Killian et al. 2016).

### Drug-related hospitalisations

Information on drug-related hospitalisations is taken from the National Hospital Morbidity Database, which includes almost all public hospitals that provided data for this database in 2015–16 (see Box 4.1 for the definition of drug-related hospital separations).

Drugs described in this section include:

- legal, accessible drugs, such as alcohol and tobacco
- drugs that are available by prescription or over the counter, such as analgesics and antidepressants
- drugs that are generally not obtained through legal means, such as heroin and ecstasy.

As a result, a proportion of the separations reported in this chapter might result from harm arising from the therapeutic use of drugs. The inclusion of therapeutic use in these data might mean the burden on the hospital system appears larger than would be expected from non-medical use of pharmaceuticals alone.

#### **Box 4.1: Definition of drug-related separations in the National Hospital Morbidity Database**

A **hospital separation** is a completed episode of admitted hospital care ending with discharge, death, or transfer, or a portion of a hospital stay starting or ending in a change to another type of care (for example, from acute care to rehabilitation).

Hospital separations data do not include episodes of non-admitted patient care in outpatient clinics or emergency departments. Patients in these settings might be admitted subsequently, with the care provided to them as admitted patients being included in the National Hospital Morbidity Database.

**Drug-related separations** refer to hospital care with selected principal diagnoses (that is, the diagnosis established to be chiefly responsible for occasioning an episode of admitted patient care) of substance-use disorder or harm (all forms of harm, including accidental, intended, or self-inflicted) due to selected substances.

Hospital separations where the diagnosis of drug-related harm or disorder is additional to the principal diagnosis (such as problems related to certain chronic conditions caused by the use of drugs like tobacco and alcohol) have been excluded.

In 2015–16, there were a total of about 10.6 million separations in Australia's public and private hospitals, and drug-related principal diagnoses (considered to be responsible for an episode of admitted care to hospital) accounted for 1% (or 135,000) of those, a similar proportion to previous years.

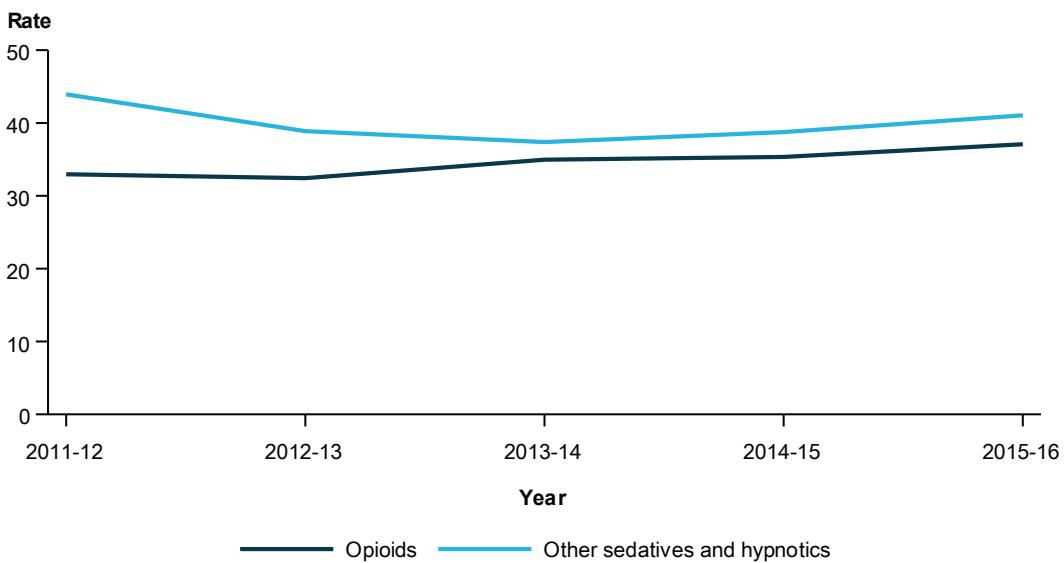
But the rate of drug-related hospital separations rose from 489 per 100,000 population in 2011–12 to 562 per 100,000 population in 2015–16 (Table S14). Alcohol has consistently had the highest number of hospital separations with a drug-related principal diagnosis between 2011–12 and 2015–16, accounting for about half of those separations (Table S13).

Figure 4.1 shows the 5-year trend for drug-related hospital separations where the principal diagnoses related to the use of sedatives and hypnotics (including benzodiazepines) or opioids (including heroin, opium, morphine, and methadone).

Between 2011–12 and 2015–16, sedatives and hypnotics continued to result in more drug related hospital separations than opioids.

Over that period, the rate of drug-related hospital separations for sedatives and hypnotics (including the use of benzodiazepines) fell from 43.9 per 100,000 population in 2011–12, to a low rate of 37.4 per 100,000 in 2013–14, before rising again to 41 per 100,000 (or 7.3% of drug-related separations) in 2015–16 (Figure 4.1; Table S14).

In 2015–16, the rate of hospital separations where the drug-related principal diagnosis was for opioids (including heroin, opium, morphine, and methadone—see Table A2 more detail) was 37.1 per 100,000 population (or 6.6% of drug-related separations). This represents a rise from 33.0 separations per 100,000 population in 2011–12.



Note: 'Other sedatives and hypnotics' primarily includes benzodiazepines. Sedatives, including barbiturates and other benzodiazepine-like drugs, make up a small proportion of this category, and are not explicitly discussed.

Source: Table S14.

**Figure 4.1: Rate of separations with a drug-related principal diagnosis for opioids and other sedatives and hypnotics, 2011-12 to 2015-16**

## Drug-induced deaths

Drug-induced deaths are defined as those that can be directly attributable to drug use, as determined by toxicology and pathology reports.

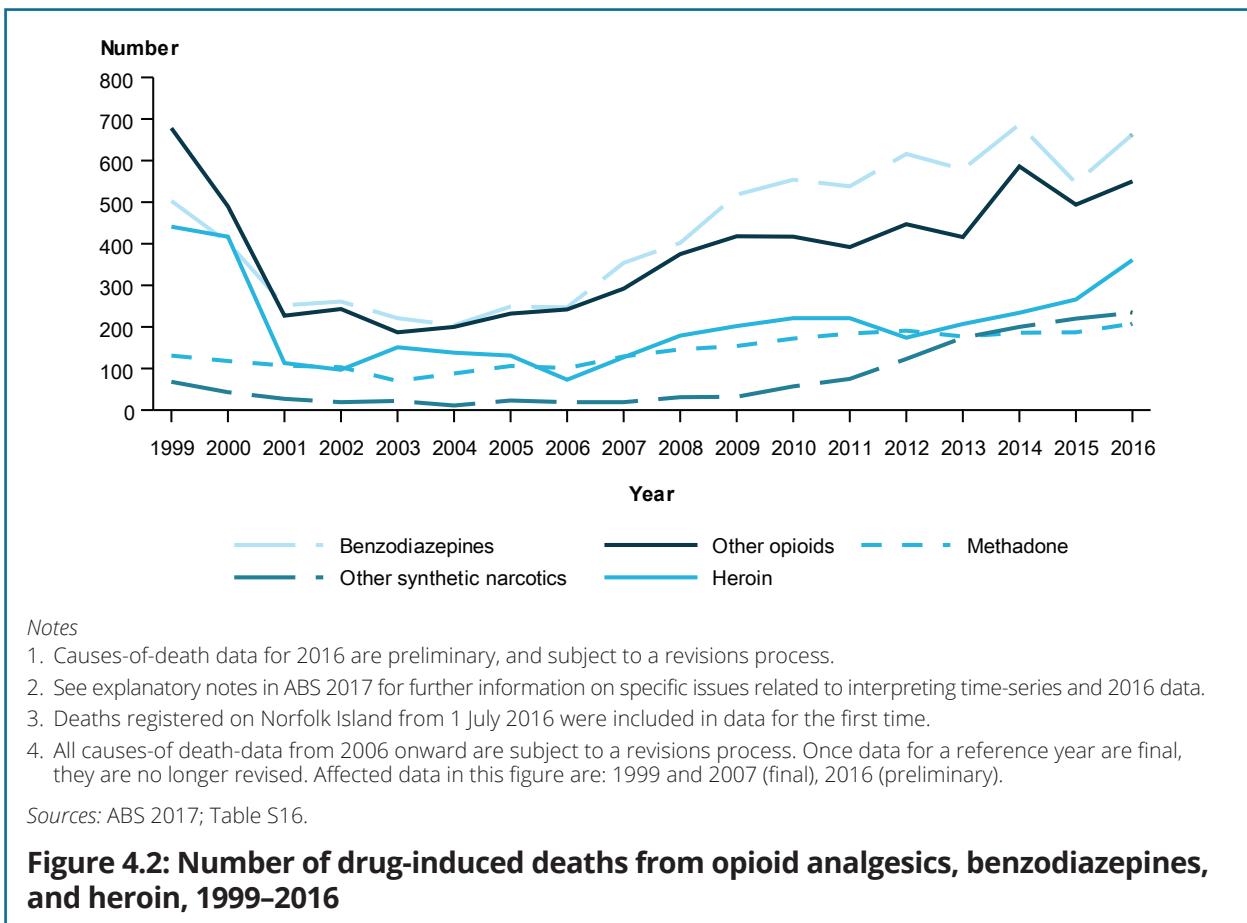
In 2016, 1,808 deaths were drug induced (rate of 7.5 per 100,000 population). While the number of drug-induced deaths in 2016 was the highest number on record, the rate is still lower than that of drug-induced deaths recorded in 1999 (9.2 deaths per 100,000 population). The rate then fell to a low of 4.6 deaths per 100,000 population in 2006, and has been trending upwards since (Table S15).

The rate of drug-induced deaths over the past 20 years is consistently higher for males than females (1.9 times as high, on average). These data also reflect the demographics of drug users reported by the 2016 NDSHS, which found that drug users were predominately male.

In 2016, half (50%) of all drug-induced deaths occurred by age 44, and 90% by age 64 (ABS 2017). The most common drug class identified in drug-induced deaths data over the past decade was opioids (the drug class includes the illegal use of heroin and licit and illicit use of opiate based analgesics—such as codeine, oxycodone and morphine—and synthetic opioid prescriptions—such as tramadol, fentanyl, and methadone) (Figure 4.2).

Over the past decade, drug-induced deaths were more likely to be due to prescription drugs than illegal drugs, and there has been a substantial rise in the number of deaths with a prescription drug present (ABS 2017).

But when asked what drug they thought was responsible for the most number of deaths in Australia, only 1.9% of Australians aged 14 and over nominated pain killers, analgesics, or opioids (AIHW 2017b).



In 2016, benzodiazepines was the drug type most commonly identified in drug-induced deaths. It was identified in 37% (663 deaths) of drug-induced deaths, a rise from 29% (503 deaths) in 1999. In deaths where benzodiazepines were identified, it was common for other substances (including alcohol) to be present.

The number of drug induced deaths where benzodiazepines were present fell sharply between 1999 and 2001, and then rose by 168% between 2006 and 2016 (Figure 4.2). This represents an average annual rise in benzodiazepines deaths of 11.8% (or 42 deaths) each year between 2006 and 2016.

The next most common drug type was other opioids, which includes prescription painkillers, such as oxycodone, morphine, and codeine, but excludes heroin. In 2016, other opioids were present in 550 deaths, a rise from the 187 deaths in 2003, but a fall from 678 deaths in 1999, where other opioids accounted for 39% of all drug-induced deaths.

The trend for other opioid deaths is similar to that of benzodiazepines, with a significant fall between 1999 and 2003 followed by a 127% rise between 2006 and 2016. This represents an average annual rise in other opioid deaths of 9.8% (or 31 deaths) each year between 2006 and 2016.

## Sex and age

Benzodiazepines were the drug type most commonly identified in drug-induced deaths in 2016 for both males and females.

The highest rate of deaths for males occurred in those aged 35–39 (10.1 deaths per 100,000 population), and for females in those aged 40–44 (5.4 deaths per 100,000).

The rate of drug-induced deaths from other opioids was highest for males aged 35–39 (7.5 deaths per 100,000), and females aged 40–59 (4.1–4.2 deaths per 100,000 population), and gradually declined with increasing age (ABS 2017).

## 5 Treatment for non-medical use of pharmaceuticals

Various alcohol and other drug treatment services are available in Australia to help people with problematic alcohol and other drug use. Most services aim to reduce the harm of alcohol and other drug use, through counselling, information, and education, while others use a structured drug-free setting with abstinence-oriented interventions.

This section presents information from the Alcohol and Other Drug Treatment Services National Minimum Data Set (AODTS NMDS) on treatment delivered by publicly funded services for the non-medical use of pharmaceutical drugs (see Box 5.1 for more information about the AODTS NMDS).

### **Box 5.1: Alcohol and Other Drug Treatment Services National Minimum Data Set**

The AODTS NMDS contains information on treatment provided to clients by publicly funded alcohol and other drug treatment services, including government and non-government organisations. Information on clients and treatment services are included in the AODTS NMDS when a treatment episode to a client is closed (see Glossary).

Treatment types can include, assessment only, counselling, information and education only, pharmacotherapy, rehabilitation, support and case management only, and withdrawal management. Alcohol and other drug treatment services collect data about closed episodes of service provision. From 2012–13, a statistical linkage key was introduced to the collection, which does not allow individuals to be identified, but enables the number of clients receiving treatment to be estimated, while continuing to ensure their privacy.

### **Coverage and data quality**

While the AODTS NMDS covers the majority of publicly funded alcohol and other drug treatment services, it is difficult to fully quantify the scope of such services in Australia.

The following services are out of scope of the AODTS NMDS: services provided by not for profit organisations and private treatment agencies that do not receive government funding, hospitals (including admitted patient care services, outpatient clinics, and emergency departments), prisons, correctional facilities, detention centres, primary health care services, non-government funded dedicated substance use services, health promotion services (for example, needle and syringe programs), and accommodation services (AIHW 2017a). Further, not all services providing alcohol and other drug treatment for Aboriginal and Torres Strait Islander people are covered in the AODTS NMDS.

### **Pharmaceuticals in the AODTS NMDS**

Pharmaceuticals are not listed as a broad drug group in the Australian Standard Classification of Drugs of Concern. In the AODTS NMDS report, the following drug types make up the group 'pharmaceuticals': codeine, morphine, buprenorphine, oxycodone, methadone, benzodiazepines, other opioids (including fentanyl and tramadol), steroids, other analgesics, and other sedatives and hypnotics (AIHW 2017a). Analysis of principal drug of concern data for the treatment of non-medical use of pharmaceuticals in this section focuses specifically on opioids and benzodiazepines.

Further terminology used to describe treatment and services in scope for the AODTS NMDS is available from *Alcohol and Other Drug Treatment Services in Australia 2015–16* (AIHW 2017a).

In 2015–16, alcohol and other drug treatment services provided 198,747 closed treatment episodes, a rise of 41% since 2006–07 (140,475 episodes). While people receive treatment for many different drugs, the most common principal drug of concern (the primary drug leading someone to seek treatment) in 2015–16 was alcohol (32%), followed by amphetamines (23%), cannabis (23%), and heroin (6%) (Figure 5.1).

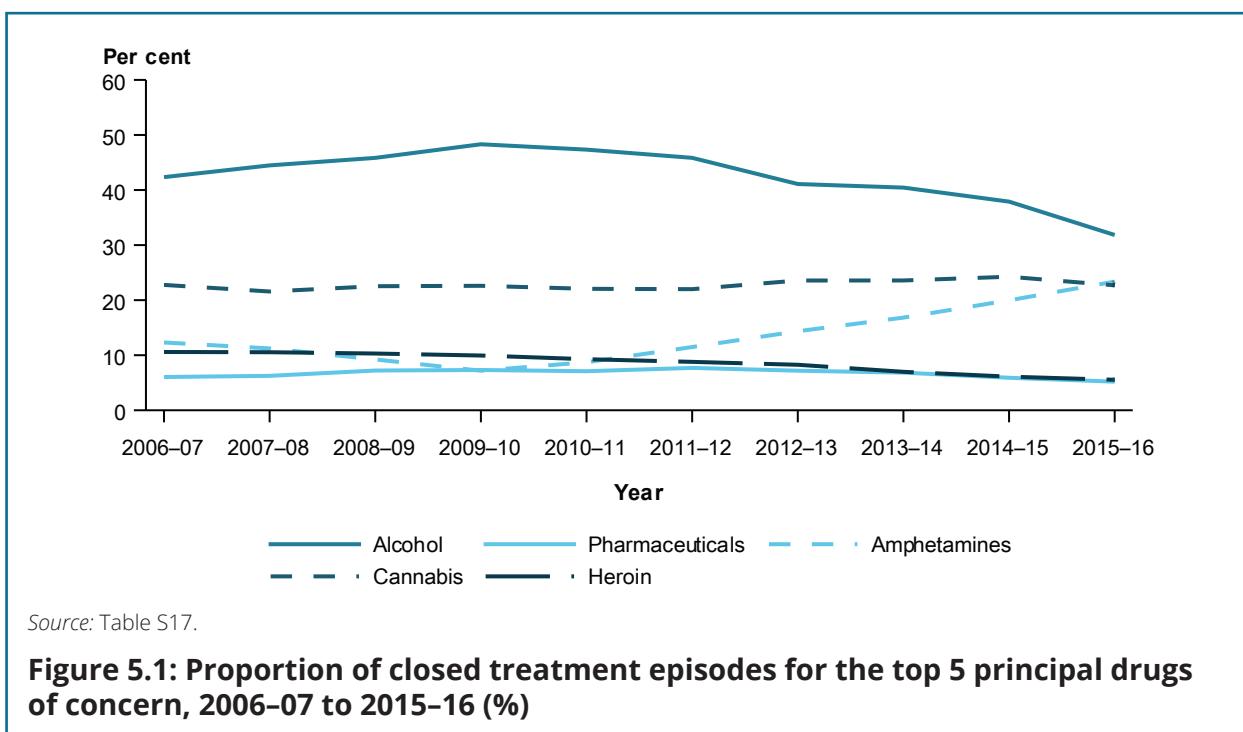
These drugs have accounted for the majority of alcohol and other drug treatment episodes over the past 10 years. In 2015–16, the proportion of closed treatment episodes for pharmaceuticals (5.2%) was similar to that for heroin (5.5%).

In 2015–16, there were 10,314 closed treatment episodes for pharmaceuticals as the principal drug of concern. The proportion rose from 6.0% in 2006–07, to 7.7% in 2011–12, before falling to 5.2% in 2015–16 (Table S17). In general, pharmaceuticals were more likely to be listed as an additional drug of concern (9.0%) for treatment purposes than as the principal drug of concern (5.2%) (AIHW 2017a).

Multiple drug use among clients was also common in closed treatment episodes where pharmaceuticals was the principal drug of concern, with more than half (56%) having at least 1 additional drug of concern listed (AIHW 2017a).

The most common type of additional drugs included alcohol, benzodiazepines, amphetamines, nicotine, and cannabis.

Additional drugs of concern varied by pharmaceutical type. Alcohol was most commonly listed as a secondary drug of concern where the primary drug was either codeine (18%) or benzodiazepines (20%). Amphetamines was the most common additional drug for treatment episodes where the primary drug of concern was morphine (19%), buprenorphine (20%), or other opioids (17%). Nicotine was the most common additional drug listed for methadone (21%) (AIHW 2017a).



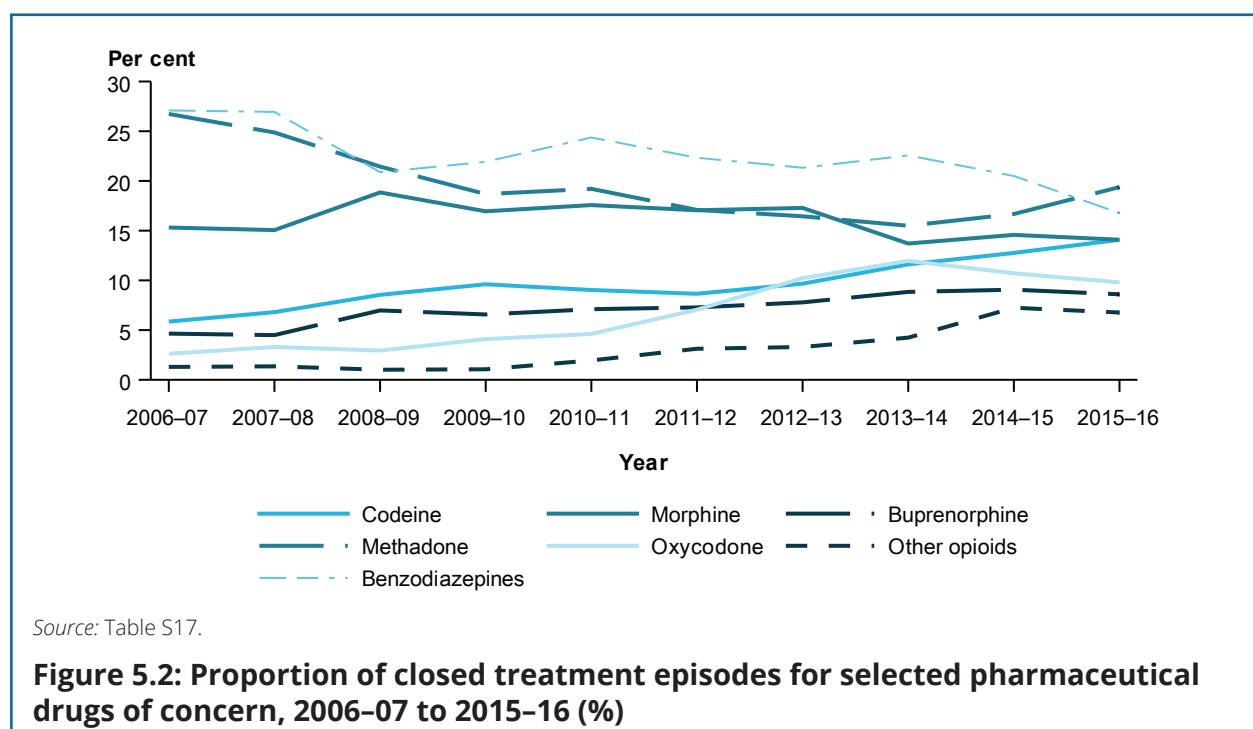
## Types of pharmaceuticals

The proportion of pharmaceutical-related closed treatment episodes, where the principal drug of concern was classed as an opioid analgesic rose from 56% in 2006–07 to 73% in 2015–16, while for benzodiazepines there was a steady decline from 27% to 17% over the same period (Table S17).

Where the principal drug of concern was a pharmaceutical, benzodiazepines had the highest proportion of closed treatment episodes in 8 out of the 10 years to 2015–16 (Figure 5.2). But in 2015–16, methadone (19.4%) overtook benzodiazepines (16.8%) to account for the highest proportion of all pharmaceutical-related treatment episodes. The next equal highest proportions were for morphine and codeine (14.1% each), followed by oxycodone (9.8%), and buprenorphine (8.6%). Other opioids (including tramadol and fentanyl) accounted for 6.8% of closed treatment episodes for pharmaceutical drugs.

Over the 10 years from 2006–07, the proportion of pharmaceutical-related closed treatment episodes for oxycodone rose by 3.8 times (from 2.6% in 2006–07 to 9.8% in 2015–16), despite a fall since 2013–14 when it was 11.9%.

Over the same period, codeine rose by 2.4 times (from 5.9% to 14.1%), buprenorphine rose by 1.9 times (from 4.6% to 8.6%), and other opioids rose by 5.2 times (from 1.3% to 6.8%), while morphine fell slightly (from 15.3% to 14.1%).



Source: Table S17.

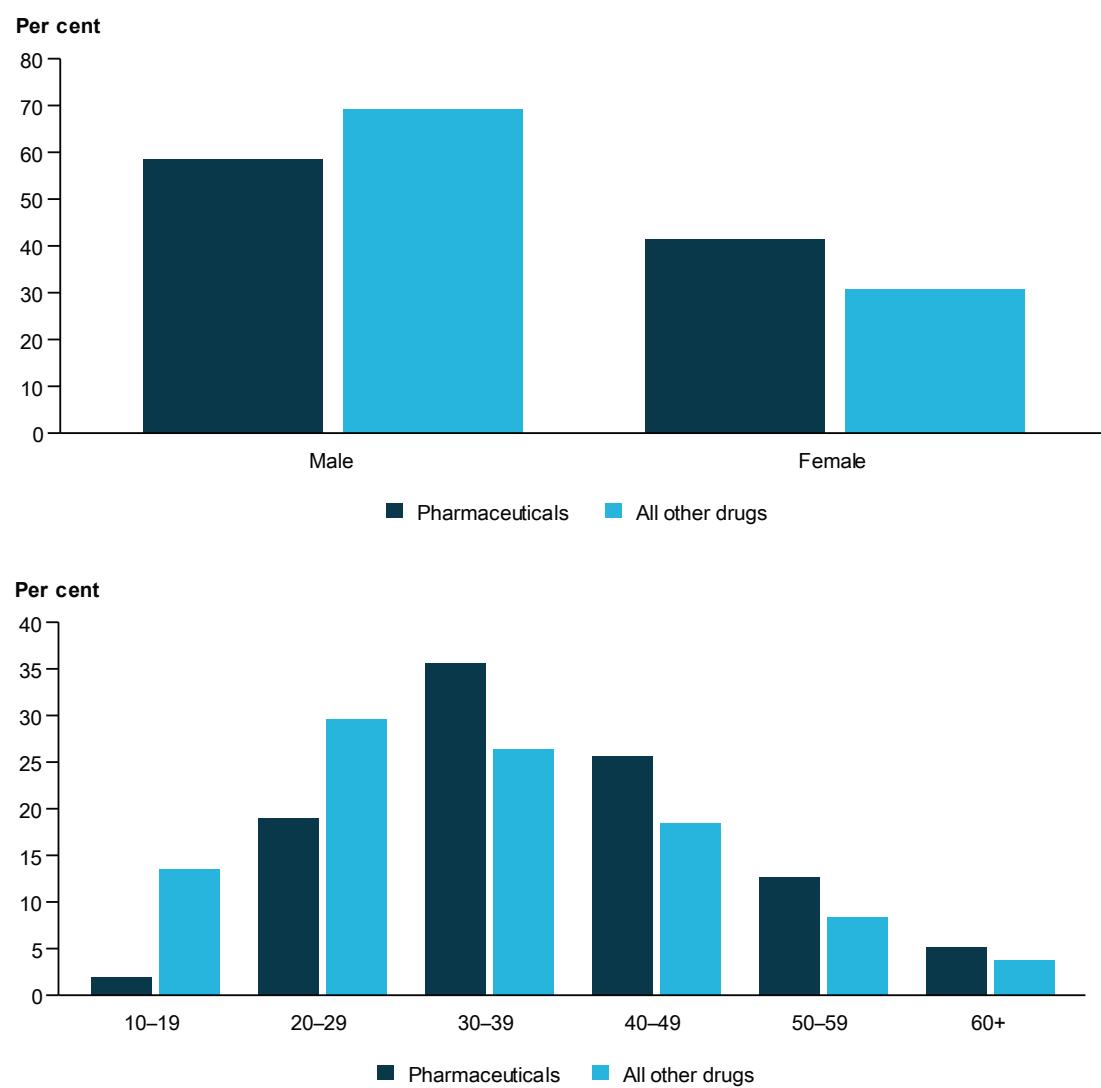
**Figure 5.2: Proportion of closed treatment episodes for selected pharmaceutical drugs of concern, 2006–07 to 2015–16 (%)**

## Sex, age and Indigenous status

In 2015–16, in almost 3 in 5 treatment episodes where a pharmaceutical drug was their principal drug of concern, the clients were male (59%). Females were substantially more likely to be treated for a pharmaceutical (41%) than for all other drugs combined (31%). These trends are consistent with findings from 2013–14 and 2014–15 (Figure 5.3; Table S18).

The largest proportion of clients who received treatment for the non-medical use of a pharmaceutical were aged 30–39 (36%) (Table S19). Clients receiving treatment for a pharmaceutical were more likely to be aged 30 and over (79%) than those receiving treatment for all other drugs (57%). These results are consistent with findings from the 2016 NDSHS.

About 1 in 9 (11.0%) clients receiving treatment for the non-medical use of pharmaceuticals were Aboriginal or Torres Strait Islander, slightly lower than for all other drugs (14.4%). These proportions have been consistent since 2013–14 (Table S20).

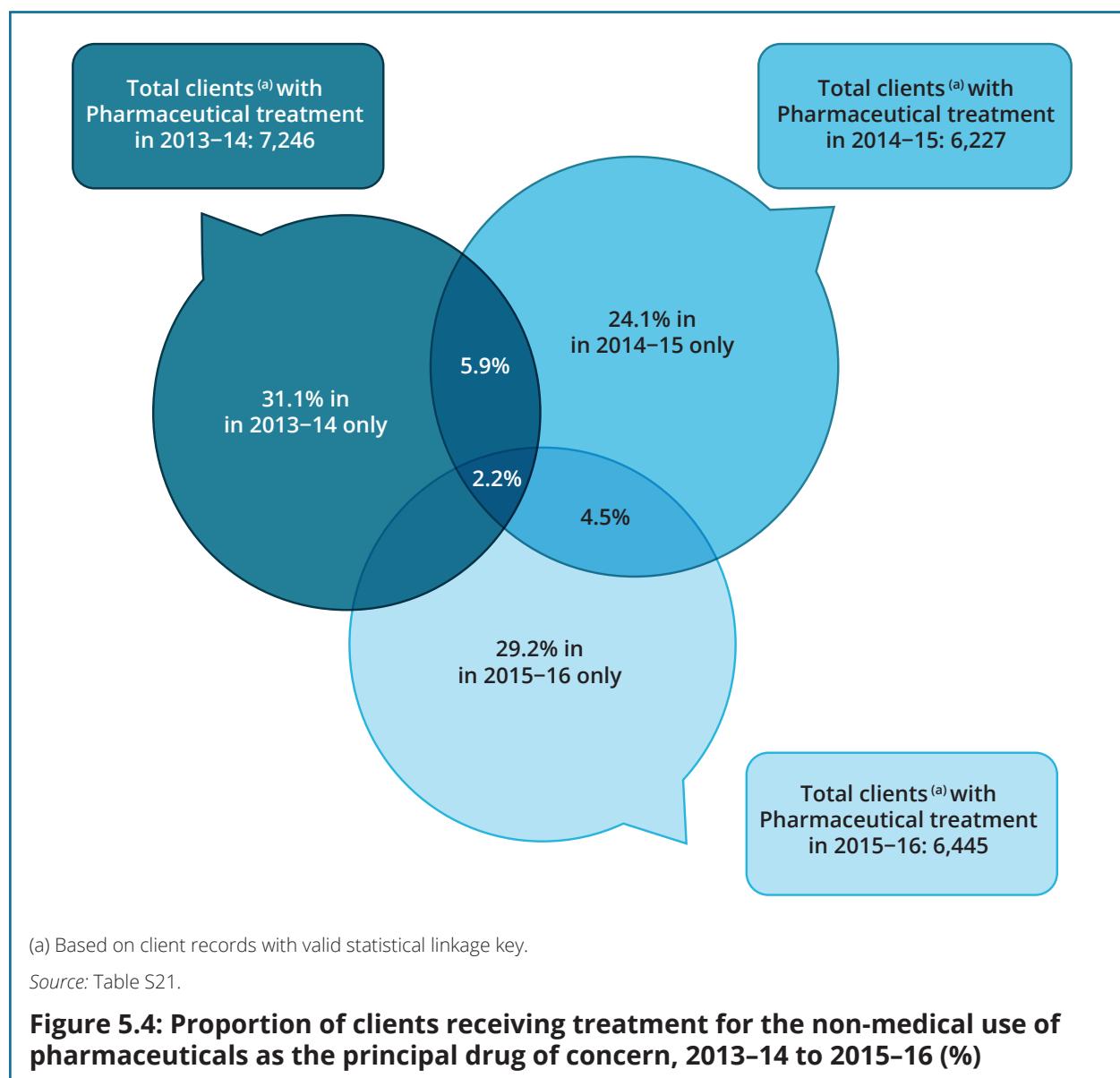


Sources: Table S18 and S19.

**Figure 5.3: Proportion of clients receiving treatment for the non-medical use of pharmaceuticals as the principal drug of concern and all other drugs, by sex and age group (years), 2015–16 (%)**

Between 2013–14 and 2015–16, about 1 in 6 (15.6%) clients received treatment for non-medical use of a pharmaceutical as their principal drug of concern in more than 1 reporting year (Figure 5.4 and Table S21). A small proportion received treatment in all 3 reporting years (2.2%).

The proportion of clients receiving treatment for the use of pharmaceuticals is much lower than for all clients receiving alcohol and other drug treatment—one-third (33%) of those clients received treatment in more than 1 reporting year, and 4% received treatment in all 3 years (AIHW 2017a). This suggests that clients with pharmaceuticals as the principal drug of concern are less likely to return for treatment than users where the principal drug of concern was for another drug.



## Referral and main treatment type

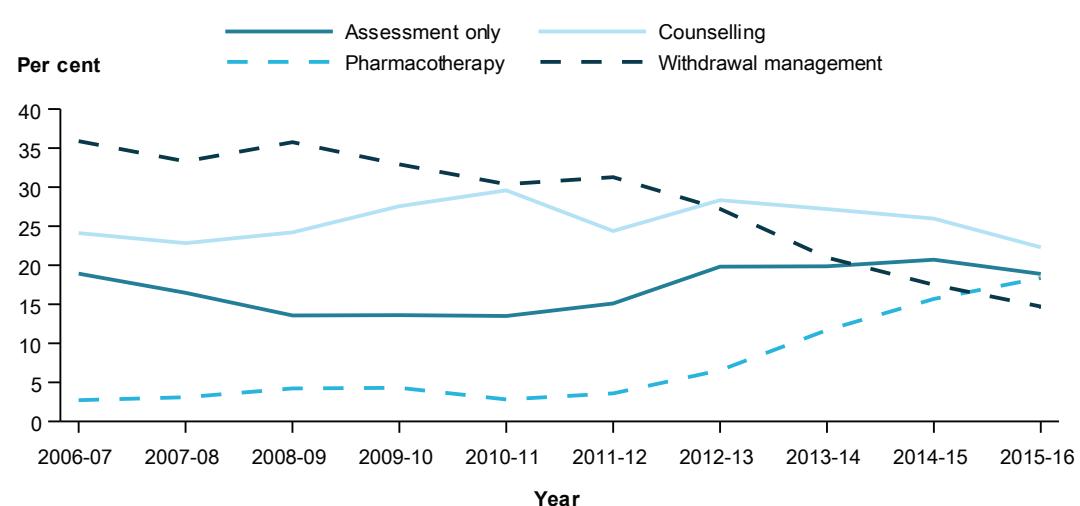
For treatment episodes in 2015–16 where the principal drug of concern was a pharmaceutical, the most frequent referral source was self/family (45%), followed by health services (39%). This pattern was consistent for benzodiazepines and all opioids, except methadone, where health services were the main referral source (45% compared with 38% for self/family). The referral source for a small proportion of treatment episodes was either a correctional service (4.6%) or via police and court-based diversion (4.7%) (Table S22).

Consistent with pharmaceuticals, the main referral sources for all other drugs were self/family (36%) and health services (27%). For all other drugs, referrals more often came from a correctional service (11.4%) or through police and court-based diversion programs (18.2%).

The most common main type of treatment (that is, the primary activity used to treat the client's alcohol and other drug problem) for episodes where a pharmaceutical was the primary drug of concern was counselling, at 22%, which was down from 30% in 2010–11 (Figure 5.5; Table S23). This was substantially lower than for episodes for all other drugs (36%). Other common main treatment types included assessment only (18.9%), pharmacotherapy (18.4%), and withdrawal management (14.7%).

Between 2006–07 and 2011–12, withdrawal management was the main treatment type for the episodes where a pharmaceutical was the primary drug of concern. Since then, counselling has remained the main treatment type.

Pharmacotherapy rose from 3.9% in 2011–12 to 18.4% in 2015–16, and was substantially higher than for all other drug types (18.4% compared with 2.0%). Pharmacotherapy as a main treatment type for heroin as the primary drug of concern was substantially higher than other non-pharmaceutical drugs (22%). These data are not surprising, as the provision of pharmacotherapy for non-medical use of pharmaceuticals is consistent with best practice for management of opioid dependence.



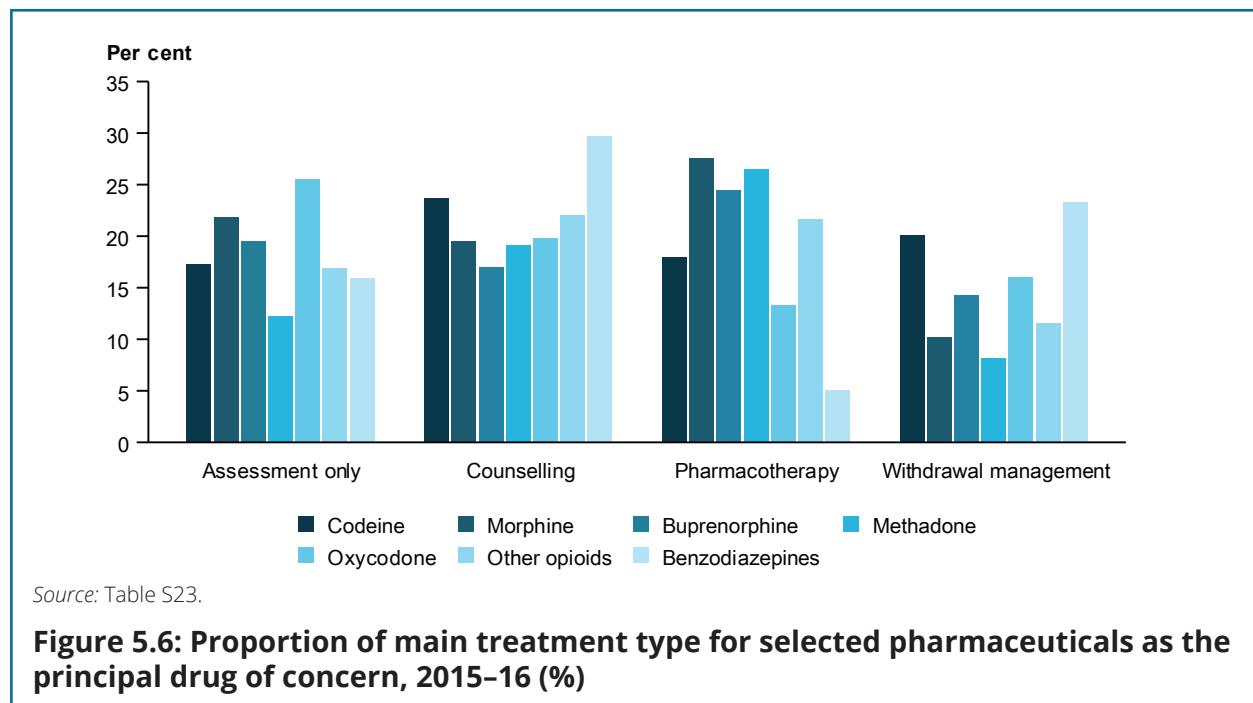
Source: Table S23.

**Figure 5.5: Trends in main treatment type for pharmaceuticals as the principal drug of concern, 2006–07 to 2015–16 (%)**

For individual pharmaceuticals, the relative proportions of treatment episodes for each main treatment type varied substantially.

For example, where benzodiazepines were the primary drug of concern, there was a higher proportion of episodes with counselling (30%) or withdrawal management (23%) as the main treatment types.

In contrast, buprenorphine had the lowest proportion for counselling (17.0%), and methadone had the lowest proportion for withdrawal management (8.2%). Methadone (12.3%) also had the lowest proportion of episodes where assessment only was the main treatment type, while oxycodone (26%) had the highest. Differences for pharmacotherapy were also substantial, ranging from 28% for morphine to 5.0% for benzodiazepines (Figure 5.6).



## Treatment duration and cessation

In 2015–16, the median duration of closed treatment episodes for pharmaceuticals as the principal drug of concern was about 3 weeks (22 days), 3 days longer than for all other drugs (19 days) (Table S24).

The median duration of treatment episodes varied by pharmaceutical type. The median duration for opioid analgesics was 25 days, 8 days longer than for benzodiazepines (17 days). Within the opioid analgesics group, the median duration varied greatly, with treatment for morphine as the principal drug of concern (37 days) being almost 4 weeks longer than for oxycodone (11 days).

In total, more than half (54%) of closed treatment episodes for pharmaceuticals as the principal drug of concern were completed in less than 1 month. About 1 in 10 (11.2%) pharmaceutical treatment episodes lasted for 12 months or more (Table S25).

By main treatment type, assessment only (83%) and withdrawal management (82%) had the highest proportions of clients who completed treatment within the first month. The main treatment type with the longest duration was support and case management, with 22% of closed episodes being completed after 6 months of treatment.

In 2015–16, just over half (53%) of treatment episodes where pharmaceuticals were the principal drug of concern ended with an expected cessation, much lower than the rate for treatment of all other drugs (62%).

Rates of expected cessation were slightly higher for methadone, codeine, and benzodiazepines treatment episodes (57% each) than for morphine, which had the lowest rate of expected cessation (39%).

About 1 in 6 (17.2%) episodes ended unexpectedly, with morphine having the highest rate (22%) and methadone the lowest (11.3%). The remainder of episodes ended due to either a treatment change, or for other reasons (Table S26).

## 6 Conclusion

This report highlights the rise in the use of pharmaceuticals for non-medical purposes, and its associated harms in Australia, as evidenced by the rising pharmaceutical-related hospitalisations and deaths.

Supply of prescription pharmaceuticals was found to be tracking upwards, particularly for oxycodone. And the rate of deaths associated with the use of prescription drugs for non-medical purposes continues to grow (ABS 2017).

Hospital admissions and ambulance attendances as a result of the non-medical use of pharmaceuticals have also risen.

Recent non-medical use of pharmaceuticals is associated with higher levels of psychological distress, and a history of chronic pain. Users also highlight the addictive nature of pharmaceuticals, and many report difficulties in trying to reduce or stop their non-medical use.

The prevalence of the non-medical use of pharmaceuticals is not uniform across population groups. It tends to be higher among people in remote areas of Australia, Aboriginal and Torres Strait Islander Australians, police detainees, prisoners, and people living in lower socioeconomic areas. Analysis of recent data from the National Wastewater Drug Monitoring Program supports self-reported prevalence data, with higher levels of oxycodone and fentanyl use detected in regional sites (though such data does not discriminate illicit from licit use of pharmaceuticals).

The non-medical use of pharmaceuticals is often associated with illicit drug use. Those undergoing treatment for pharmaceuticals as their primary drug of concern commonly reported additional illicit drug use.

The majority of people who have used pharmaceuticals for non-medical purposes, and sought treatment were referred either by self/family or health services, and were less likely to be referred from a mandatory or punitive source, such as a correctional service or police and court-based diversion programs.

But treatment episodes for pharmaceuticals were more likely to last longer, and end unexpectedly than other drug treatment episodes. Further research is required to understand the complex relationship between illicit drug use and non-medical use of pharmaceuticals, and to provide the best options to keep people in treatment.

The level of addiction to pharmaceuticals in the USA, and subsequent rise in overdoses provides insight into the potential harms Australia could experience if safeguards preventing their non-medical use are not strengthened.

The Australian Government will be restricting the supply of over-the-counter codeine-based medicines in early 2018, and introducing a real-time national prescription monitoring system.

Evaluation of these strategies over the coming years will provide a useful indication of their effectiveness in reducing the prevalence and associated harms of the non-medical use pharmaceuticals.

# Appendix A: Data sources

## Alcohol and Other Drug Treatment Services National Minimum Data Set

It is difficult to fully quantify the scope of alcohol and other drug services in Australia. There are a variety of settings in which people receive treatment for alcohol and other drug-related issues that are not in scope for this collection. These include agencies that: do not receive any public funding; primarily provide accommodation (for example, sobering-up shelters); are based in correctional institutions; provide services primarily concerned with health promotion; are located in acute care/psychiatric hospitals, and only provide treatment to admitted patients; or have the sole function of prescribing or providing dosing services for opioid pharmacotherapy. These data are captured in the AIHW's National Opioid Pharmacotherapy Statistics Annual Data Collection.

The AODTS NMDS does not cover all agencies that provide substance-use services to Aboriginal and Torres Strait Islander people. These agencies provide data to Online Services Report Collection.

Data from the AODTS NMDS presented in this report are based on information about closed treatment episodes, and are not directly comparable with data presented on people, as a person may have multiple treatment episodes in a reference period. In the AODTS NMDS, data on people have not been collected before 2012–13, so population rates for treatment have not been reported.

## National Drug Strategy Household Survey

The NDSHS is the leading national population based survey of licit and illicit drug use in Australia. The 2016 survey was the 12th done under the auspices of the National Drug Strategy. Previous surveys were done in 1985, 1988, 1991, 1993, 1995, 1998, 2001, 2004, 2007, 2010, and 2013. The data collected through these surveys have contributed to the development of policies for Australia's response to drug-related issues.

The Australian Government Department of Health commissioned the AIHW to manage the 2016 survey, and the AIHW commissioned Roy Morgan Research to collect the data.

In 2016, 23,772 people aged 12 and over gave information on their drug use patterns, attitudes, and behaviours (Table A1). The sample was based on households, so people who were homeless or institutionalised were not included in the survey (consistent with the approach in previous years). Most of the analyses are based on the population aged 14 and over (unless specified), as this allows consistent comparison with earlier survey results.

**Table A1: National Drug Strategy Household Survey sample sizes**

| Survey year | Respondents |
|-------------|-------------|
| 2016        | 23,772      |
| 2013        | 23,855      |
| 2010        | 26,648      |
| 2007        | 23,356      |
| 2004        | 29,445      |
| 2001        | 26,744      |
| 1998        | 10,030      |
| 1995        | 3,850       |
| 1993        | 3,500       |

NDSHS data cover a significant variety of people, and uses a method that is powerful enough to enable generalisation of the results.

Not all population groups are included in the data—for example, people in institutional settings, hostels, or motels, or those who are homeless. Foreign language interviews are not done, and the survey is not specifically designed to obtain reliable national estimates for Indigenous Australians. It requires a good comprehension of the English language, as the questionnaire is self-completed. In 2016, the NDSHS was unable to include many Aboriginal communities with relatively low levels of English literacy. The exclusion of these communities makes it difficult to generalise the results in the NDSHS to the whole Indigenous population.

The pharmaceutical use questions in the survey are designed to help respondents differentiate between legitimate, medical use, and non-medical use. For each class of pharmaceuticals, the respondent was asked whether they have ever used the drugs in question, and, if so, whether they have used them for ‘non-medical purposes’ or when ‘not supplied to you medically’. Only those who answer ‘yes’ to the second question are counted as misusing pharmaceuticals. However, the questions rely on the respondent’s self-reported behaviour, and on their understanding that they have used pharmaceuticals for non-medical purposes.

For this report ‘painkillers/analgesics and opioids’ are referred to as ‘opioid analgesics’ but might include the use of some non-opioid analgesics such as gabapentinoids. The non-medical use of methadone and buprenorphine have been grouped into ‘opioid analgesics’ for consistency of report, so, as a result, data presented in this report might differ to that in NDSHS reporting.

Tranquillisers/sleeping pills in this report are referred to as benzodiazepines, which are the focus of this report and comprise the largest group of drugs in the sedative/hypnotic drug class. Other sedatives/hypnotics, including barbiturates and benzodiazepine-like drugs (known as ‘z-drugs’), are not explicitly discussed in this report, as they constitute a smaller proportion of the sedative/hypnotic drug class.

## Comparability with previous survey results

It is important to note that in 2016, changes were made to the way the NDSHS captures non-medical use of painkillers/analgesics and other opioids. These changes represent a break in the time series for both ‘pain-killers/analgesics’ and ‘other opiates/opioids’ and as such making comparisons over time for these drug types is avoided. Where time series data are presented, pain-killers/analgesics and opioids data have been combined in older years but are still not directly comparable to 2016. As painkillers/analgesics and other opioids are the largest contributing drug type to the pharmaceuticals total, any comparison across time must be interpreted with caution.

## Pharmaceutical Benefit Scheme (PBS)

The Australian Government subsidises the cost of prescription medicines through the Pharmaceutical Benefits Scheme (PBS) and the Repatriation Pharmaceutical Benefits Scheme for eligible war veterans and their dependants.

Most prescriptions for general schedule medicines (Section 85) are dispensed through community pharmacies, but PBS subsidised drugs are also available in private hospitals and through eligible public hospitals to patients on discharge and day patients. In addition, some drugs are distributed under alternative arrangements, when more appropriate (Section 100). Examples are the highly specialised drugs program and general schedule medicines that are supplied directly to Indigenous patients via Aboriginal Health Services in remote areas of Australia.

Patients fall into 2 broad classes: general and concessional. Concessional beneficiaries include pensioners, Health Care Card holders, Commonwealth Seniors Health Card holders and Veterans Health Card holders.

Under the PBS the patient is required to contribute a copayment, which is indexed annually—at 1 January 2017, it was \$38.80 for general patients, and \$6.30 for those with a concession card. If a medicine is priced below the relevant copayment the consumer pays the full price, and the prescription is classified as ‘under copayment’. If a medicine is not listed in the PBS Schedule of Pharmaceutical Benefits, the consumer pays the full price as a private prescription.

The PBS does not include:

- private prescriptions
- over-the-counter medicines
- medicines supplied to public hospital inpatients.

The PBS data held by the AIHW, and on which this study is based, do not include:

- prescriptions under copayment
- Repatriation Pharmaceutical Benefits Scheme prescriptions
- medicines supplied under the Aboriginal Health Services in remote areas of Australia.

## National Hospital Morbidity Database

Information on drug-related hospitalisations is taken from the National Hospital Morbidity Database, which includes almost all public hospitals that provided data for this database in 2015–16.

The exception was an early parenting centre in the Australian Capital Territory. The great majority of private hospitals also provided data, except for the private free-standing day hospital facilities in the Australian Capital Territory.

## Hospital separations data

The hospital separation data included in this report were extracted from the AIHW National Hospital Morbidity Database using a selection of codes from the International Statistical Classification of Diseases and Related Health problems, 10th revision, Australian modification, 9th edition (ICD-10-AM) (ACCD 2014) (see Table A2).

**Table A2: Relationship between the drug of concern and the ICD-10-AM codes**

| <b>Drug of concern identified in principal diagnosis</b>  | <b>ICD-10-AM codes</b>  |
|---|---|
| <b>Analgesics</b>   |   |
| Opioids (includes heroin, opium, morphine and methadone)  | F11.0–11.9, T40.0–40.4  |
| Non-opioid analgesics (includes paracetamol)  | F55.2, T39.0, T39.1, T39.3, T39.4, T39.8, T39.9,                                  |
| <b>Sedatives and hypnotics</b>  |   |
| Alcohol (includes ethanol)  | E52, F10.0–10.9, G31.2, I42.6, K29.2, K70.0–70.9, K85.2, K86.0, T51.0–51.9, Z71.4 |
| Other sedatives and hypnotics (includes barbiturates and benzodiazepines; excludes ethanol)   | F13.0–13.9, T41.2, T42.3–42.8   |
| <b>Stimulants and hallucinogens</b>   |   |
| Cannabinoids (includes cannabis)  | F12.0–12.9, T40.7   |
| Hallucinogens (includes LSD)  | F16.0–16.9, T40.8, T40.9  |
| Cocaine   | F14.0–14.9, T40.5   |
| Tobacco and nicotine  | F17.0–17.9, T65.2, Z58.7, Z71.6   |
| Other stimulants (includes amphetamines and caffeine)   | F15.0–15.9, T40.6, T43.6, T46.0, T46.3  |
| <b>Antidepressants and antipsychotics</b>   |   |
| <b>Volatile solvents</b>  |   |
| <b>Other and unspecified drugs of concern</b>   |   |
| Multiple drug use   | F19.0–19.9  |
| Unspecified drug use and other drugs not elsewhere classified (includes psychotropic drugs not elsewhere classified, diuretics, anabolic and androgenic steroids, and opiate antagonists) | F55.1, F55.3–6, F55.8, F55.9, N14.1–3, T38.7, T43.8–9, T50.1–3, T50.7, Z71.5      |
| Fetal and perinatal related conditions  |   |
| Fetal and perinatal related conditions (includes conditions caused by the mother's alcohol, tobacco, or other drug addiction)   | P04.2–4, Q86.0  |

Note: Data for 2015–16 were reported to the National Hospital Morbidity Database using the ICD-10-AM.

## Causes of death, Australia, 2016

The ABS causes of death report looks at the cause of the 158,504 deaths registered in 2016, and provides detailed information on drug-induced deaths. It looks at information on drug-induced deaths, including by demographics, type of drug, and drug groupings (ABS 2017).

## National Health Survey: first results, 2014–15

The National Health Survey is 1 of a series of Australia-wide health surveys done by the ABS. The survey is designed to collect various information about the health of Australians. It looks at self-reported health status, the prevalence of long-term health conditions (including the experience of pain), mental health conditions, and demographic and economic characteristics (ABS 2015).

## **Illicit Drug Data Report**

The Illicit Drug Data Report provides a snapshot of the Australian illicit drug market, presenting data from various sources, including law enforcement, health services, and academia. The report provides statistics and analysis help the development of drug supply and harm reduction strategies.

The Illicit Drug Data Report uses the National Illicit Drug Reporting Format to standardise the arrest, seizure and purity data received from each law enforcement agency and other contributing organisations (ACIC 2017a). It includes various data on pharmaceuticals, including opioids and benzodiazepines.

## **Illicit Drug Reporting System**

The Illicit Drug Reporting System is a national illicit drug monitoring system of users which is intended to identify emerging trends of local and national concern in the illicit drug market. It consists of structured interviews of specific populations of regular injecting illicit drug users, interviews of key experts and the analysis of indicator data sources of illicit drugs (NDARC 2017). The Illicit Drug Reporting System collects data and monitors use, availability, price and purity and distinguishes between different pharmaceutical forms and licit and illicit use.

## **Drug Use Monitoring in Australia**

The Drug Use Monitoring in Australia program collects data from police detainees who have been arrested in the previous 48 hours, and are being held in custody. Interviews are done with detainees by trained local staff—interviewers cannot be police officers.

Participation is voluntary and confidential. Detainees may be excluded from the sample for various reasons, including if they are at risk to themselves or the interviewer. Urine specimens are also taken and tested by an independent laboratory.

About 70% of individuals agree to the interview, and of those more than 70% agree to give urine specimens. Data are collected across 6 sites in 4 jurisdictions (Coghlan et al. 2015).

# Glossary

**additional drugs of concern:** Clients receiving treatment for their own drug use nominate a principal drug of concern that has led them to seek treatment, and any additional drugs of concern, of which up to 5 are recorded in the AODTS NMDS. Clients receiving treatment for someone else's drug use do not nominate drugs of concern.

**administrative cessation:** Includes treatment episodes that ended due to a change in the main treatment type, delivery setting, or principal drug of concern, or where the client was transferred to another service provider.

**benzodiazepines:** a commonly prescribed pharmaceutical to help people sleep, and treat stress and anxiety.

**closed treatment episode:** A period of contact between a client and a treatment provider or team of providers. A treatment episode is closed when treatment is completed, there has been no further contact between the client and the treatment provider for 3 months, or when treatment is ceased (see reason for cessation).

**expected cessation:** Includes treatment episodes where the treatment was completed, or where the client ceased to participate at expiation or by mutual agreement.

**main treatment type:** The principal activity that is determined at assessment by the treatment provider to treat the client's alcohol or other drug problem for the principal drug of concern.

**median:** The midpoint of a list of observations ranked from the smallest to the largest.

**multiple drug use:** The use of more than 1 illicit drug within a 12-month period, but not necessarily at the same time.

**non-medical use of pharmaceutical:** The consumption of a prescription or over-the-counter drug for non-therapeutic purposes or other than directed by a registered health-care professional.

**principal drug of concern:** The main substance that the client stated led them to seek treatment from an alcohol and drug treatment agency.

**opioid analgesic:** A commonly prescribed pharmaceutical use for pain management, and as a substitution for treatment of heroin and other opioid dependence. The most common forms of opioids prescribed and dispensed in Australia were oxycodone, codeine, tramadol, and buprenorphine (including buprenorphine/naloxone).

**Prescription-only medicine:** Medicines that are only available to buy from pharmacies with a valid prescription from a medical or dental practitioner.

**reason for cessation:** The reason for the client ceasing to receive a treatment episode from an alcohol and other drug treatment service. Reasons for cessation are categorised as follows:

- **Ceased to participate against advice:** Where the service provider is aware of the client's intention to stop participating in treatment, and the client ceases despite advice from staff that such action is against the client's best interest.
- **Ceased to participate at expiation:** Where the client has fulfilled their obligation to satisfy expiation requirements (for example, participation in a treatment program to avoid having a criminal conviction being recorded against them) as part of a police or court diversion scheme, and chooses not to continue with further treatment.
- **Ceased to participate by mutual agreement:** Where the client ceases participation by mutual agreement with the service provider, even though the treatment plan has not been completed. This may include situations where the client has moved out of the area.
- **Ceased to participate involuntarily:** Where the service provider stops the treatment due to non-compliance with the rules or conditions of the program.
- **Ceased to participate without notice:** Where the client ceased to receive treatment without notifying the service provider of their intention to no longer participate.
- **Change in the delivery setting:** Where a change in the treatment delivery setting for alcohol and other drugs results in the treatment episode ending before completion.

- **Change in the principal drug of concern:** Where a change in the principal drug of concern results in the treatment episode ending before completion.
- **Change in the main treatment type:** Where a change in the main treatment type for alcohol and other drugs results in the treatment episode ending before completion.
- **Death.**
- **Drug court or sanctioned by court diversion service:** Where the client is returned to court or gaol due to non-compliance with the program.
- **Imprisoned:** Where the client is imprisoned for reasons other than sanctioned by a drug court or diversion service.
- **Treatment completed:** Where the treatment was completed as planned.
- **Transferred to another service provider:** This includes situations where the service provider is no longer the most appropriate, and the client is transferred or referred to another service. For example, transfers could occur for clients between non-residential and residential services, or between residential services and a hospital. This excludes situations where the original treatment was completed before the client transferred to a different provider for other treatment.

**Schedule 8 controlled drug:** These substances are available for use, but require restriction of manufacture, supply, distribution, possession, and use, to reduce non-medical use, and physical and psychological dependence.

**treatment type:** The type of activity that is used to treat the client's alcohol or other drug problem. Treatment types are as follows:

- **Assessment only:** Where only assessment is provided to the client. Service providers would normally include an assessment component in all treatment types.
- **Counselling:** The most common treatment for problematic alcohol or other drug use, which can include cognitive behaviour therapy, brief intervention, relapse intervention and motivational interviewing.
- **Information and education only:** Where no treatment is provided to the client, other than information and education. In general, service contacts would include a component of information and education.
- **Pharmacotherapy,** where the client receives another type of treatment in the same treatment episode: Includes drugs such as buprenorphine and methadone used as maintenance therapies, or relapse prevention for people who are addicted to certain types of opioids. Where a pharmacotherapy is used for withdrawal, it is included in the 'withdrawal' category. Due to the complexity of the pharmacotherapy sector, this report provides only limited information on agencies whose sole function is to provide pharmacotherapy.
- **Rehabilitation:** Where treatment focuses on supporting clients in stopping their drug use, and on helping to prevent psychological, legal, financial, social, and physical consequences of problematic drug use. Rehabilitation can be delivered in several ways, including residential treatment services, therapeutic communities, and community-based rehabilitation services.
- **support and case management only:** Support includes helping a client who occasionally calls an agency worker for emotional support. Case management is usually more structured, and can assume a more holistic approach, taking into account all client needs—such as general welfare needs—and including assessment, planning, linking, monitoring, and advocacy.
- **withdrawal management (detoxification):** Includes medicated and non-medicated treatment to assist in managing, reducing, or stopping the use of a drug of concern.

**treatment episode:** The period of contact between a client and a treatment provider or a team of providers. Each treatment episode has 1 principal drug of concern and 1 main treatment type. If the principal drug or main treatment changes, then a new episode is recorded.

**unexpected cessation:** Where the client ceased to participate against advice, without notice, or due to non-compliance.

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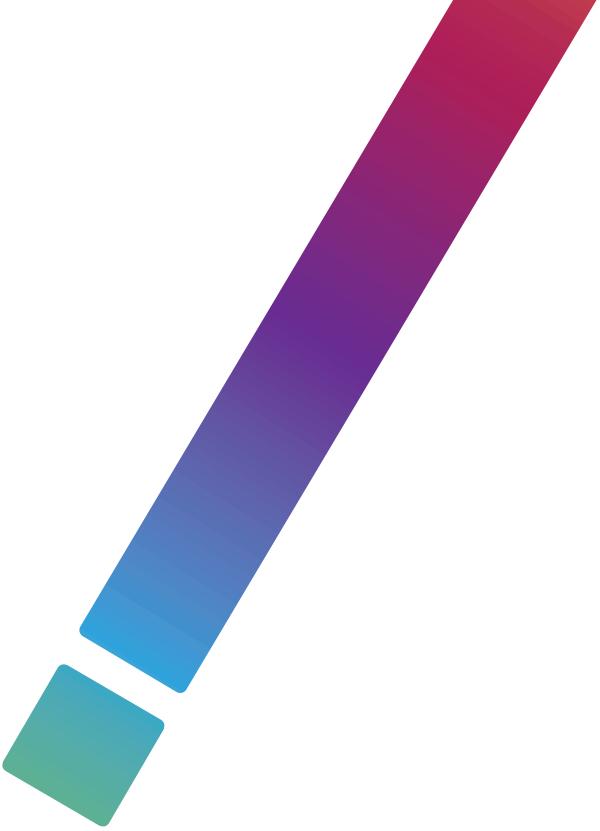
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# Related publications

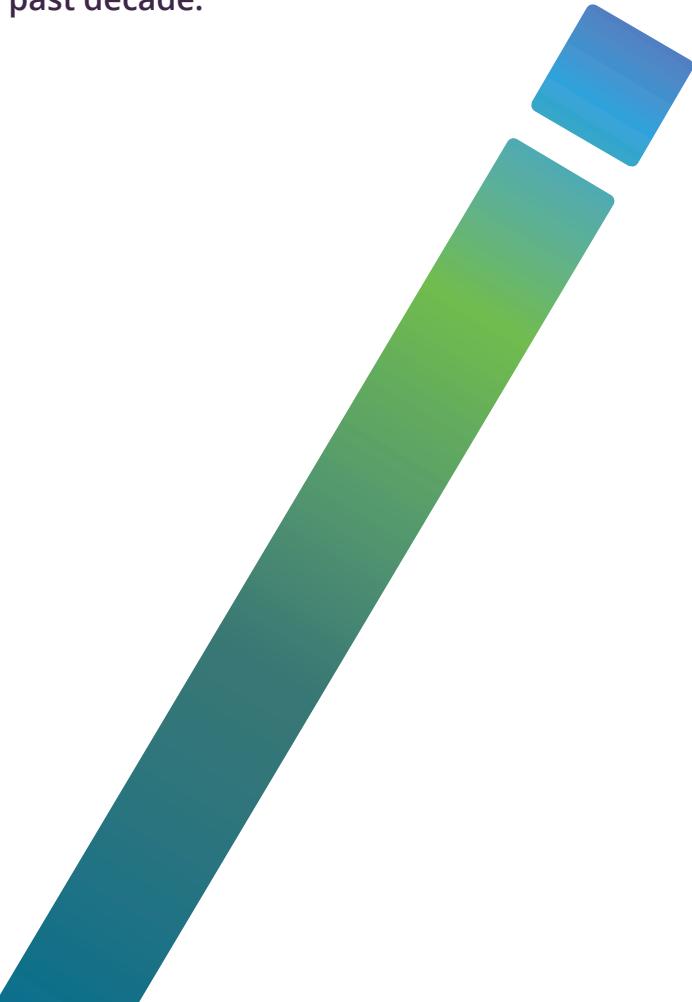
This report is part of the drug treatment series. The 2 earlier editions, and any published subsequently can be downloaded from <[www.aihw.gov.au/reports-statistics/behaviours-risk-factors/illicit-use-of-drugs/overview](http://www.aihw.gov.au/reports-statistics/behaviours-risk-factors/illicit-use-of-drugs/overview)>. The website also includes information on ordering printed copies.

The following AIHW publications relating to alcohol and other drugs might also be of interest:

- AIHW 2017. National Drug Strategy Household Survey detailed report 2016. Drugs statistics series no. 13. Cat. no. PHE 214. Canberra: AIHW.
- AIHW 2017. Alcohol and other drug treatment services in Australia 2015–16. Drug treatment series no. 29 Cat. no. HSE 187. Canberra: AIHW.
- AIHW 2016. Trends in alcohol availability, use and treatment 2003–2004 to 2014–2015. Drug treatment series no.28. Cat no. HSE 179. Canberra: AIHW.
- AIHW 2015. Trends in methylamphetamine availability, use and treatment: 2003–04 to 2013–14 Drug treatment series no. Cat. no. 26 HSE 165. Canberra: AIHW.



The non-medical use of pharmaceuticals is common—about 1 million Australians (4.8%) aged 14 years or older reported recent non-medical use of a pharmaceutical drug. Prescriptions for opioid analgesics continued to increase and chronic pain and mental illness was higher among people with recent non-medical use of a pharmaceutical. Drug-induced deaths where benzodiazepines or other opioids like oxycodone and codeine were present, has more than doubled over the past decade.



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