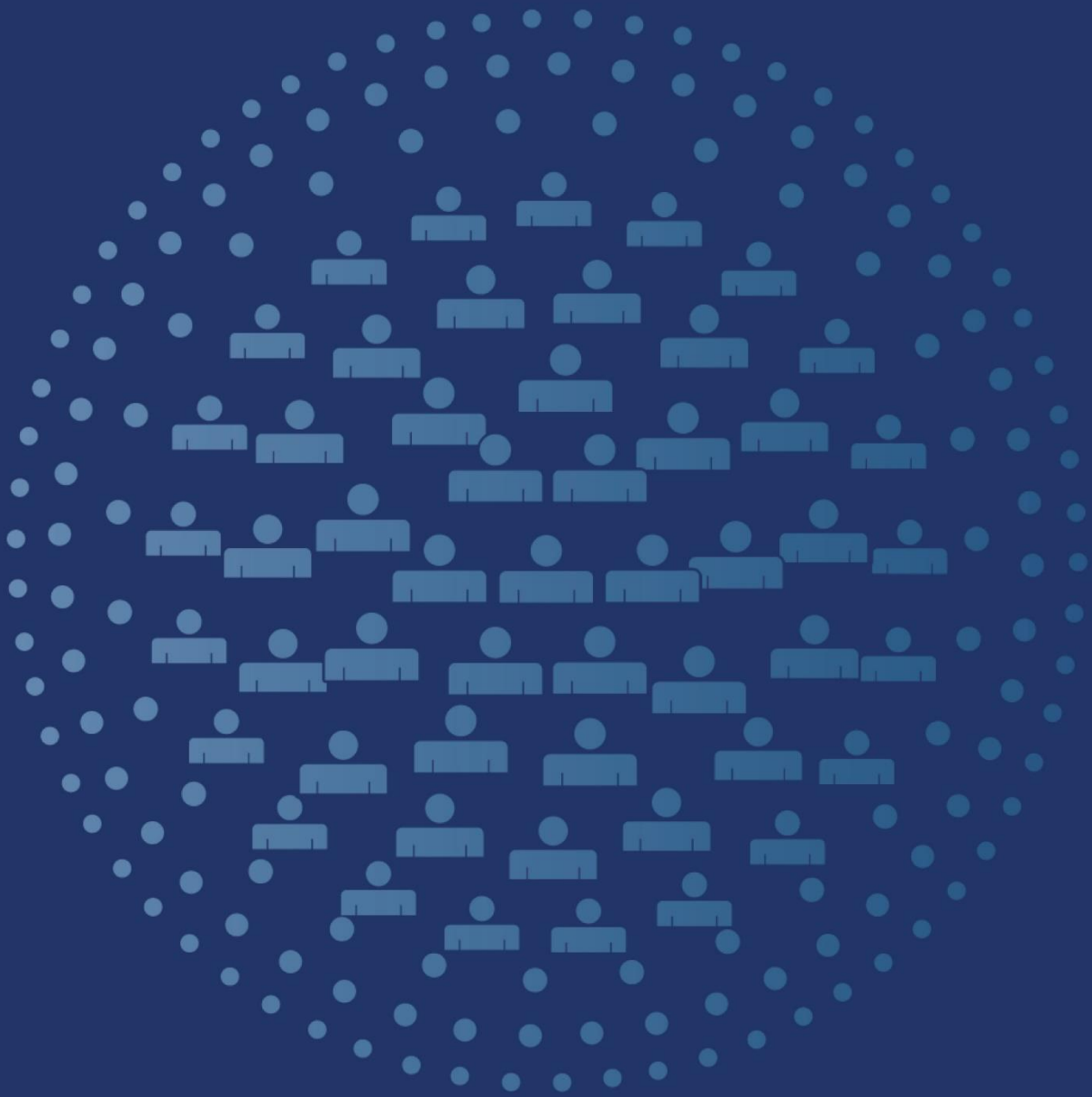
Australia's Annual Overdose Report



A PENINGTON INSTITUTE REPORT
AUGUST 2024

PENINGTON INSTITUTE

2024

We acknowledge with gratitude the Advisory Committee and thank them for their guidance and support for this report:

- Professor Emeritus Olaf Drummer AO
- Associate Professor Shaun Greene
- Professor John Kaldor
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We thank Craig Brady, Lauren Moran, Lipan Rahman, Louisa Logovik, Rebecca Adsett and Hannah Jung from the Australian Bureau of Statistics for preparing the raw data that underpin this report.

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This report contains reference to suicide, self-harm behaviours, mental health disorders, overdose and family violence, which may be distressing to some readers.

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1. *Foreword*

JOHN RYAN
CEO
Penington Institute

As Penington Institute approaches a decade of producing this report, Australia reaches a somber milestone—42,000 overdose deaths since the turn of the century. Despite progress in drug policy over the years, inadequate governmental leadership and jurisdictional blame games exacerbate the anguish and frustration among grieving families and communities affected by the ever-mounting overdose toll.

To truly acknowledge the devastation that follows the loss of a loved one to drug overdose, the policy tide must turn. Our leadership must take on the responsibility of establishing an effective National Overdose Prevention Strategy in Australia and I recoil at the thought of this taking any longer than it already has.

We face a paradox: drug overdoses cascade and the community aches, yet health-focused drug reforms in Australia which were once unimaginable are succeeding. Harm minimisation efforts in Queensland, Australian Capital Territory, New South Wales, and Victoria include supervised injecting sites, drug checking services, and programs to improve access to the life-saving opioid overdose reversal medication naloxone.

These developments deserve recognition, but they remain far too small-scale; harm reduction measures like these account for a scant two per cent of state and federal drug policy funding. It is undeniable that this sector achieves a great deal on a fraying shoestring budget to save lives and protect the community, but our efforts should be based on sustained support, not heroism.

Global drug supplies are becoming more unpredictable and dangerous, increasing the risk of people experiencing unexpected adverse events. Notably, the emergence of nitazenes and other contaminants in the Australian market underscores the urgent need to improve drug literacy in the community and combat the dangers of the unregulated drug market.

We know it is possible for social and policy attitudes to shift dramatically – just look at the acceptance of mental health as an issue requiring empathy and resources. Is it possible that drug policy will follow a similar path, with comprehensive, holistic care as the standard? The community is ready for nationwide drug education, and this is the time for governments to act.

To build on the extensive work in this report, I want to highlight our five priority recommendations for a National Overdose Prevention Strategy—because despite gradually expanding harm

minimisation efforts in Australia, we need a comprehensive strategy to ensure overdose victims, their families and our communities are not overlooked. This strategy would include:

1. Education: Commit to nationwide education efforts so every Australian understands the risks of an overdose and how to respond effectively.

2. Naloxone: Ensure naloxone is readily available to potential overdose witnesses across the country in settings such as libraries, social services, hospitals, police officer first aid and home first aid kits.

3. Medication assisted treatment: Remove the many barriers to the most cost-effective treatment for opioid dependence, pharmacotherapy.

4. Drug checking: Embrace drug checking, not only at festivals but in the community, where dangerous drugs, like nitazenes, are increasingly entering suburbia and country towns.

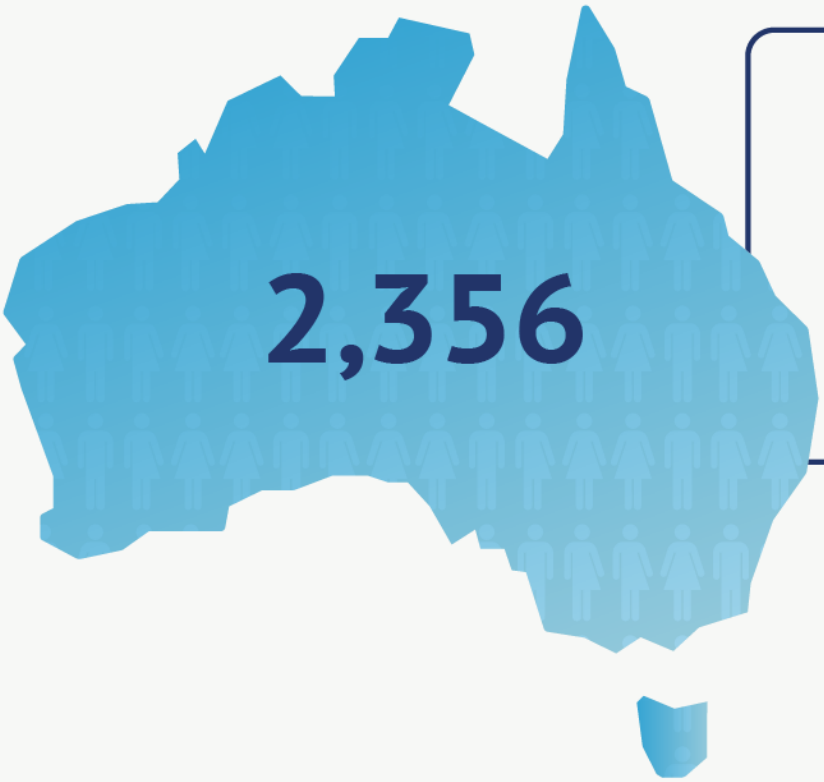
5. Supervised consumption: Established needle and syringe programs can be cheaply reconfigured as mini overdose prevention sites, saving lives across the vast array of locations where overdoses occur.

In this report, you'll learn that in 2022 there were 2,356 drug-induced deaths in Australia, equating to approximately six lives needlessly lost each day. You will also read that the rate of unintentional drug-induced deaths is significantly higher among Indigenous Australians compared to non-Indigenous Australians; that overdose impacts every region of Australia; and that it is a leading cause of death across most adult age groups. And once again, the report demonstrates that overdose deaths exceeded Australia's road toll in 2022.

It's with the presentation of this devastating data that I am compelled to ask that evidence-based approaches to reducing drug-related harm be embraced with the urgency and seriousness that the people and communities affected by overdose deserve.

Thank you to the volunteer advisory committee and the Penington Institute team, especially Rafaella Caltabiano and Dr Karen Gelb, for their hard work on the development of *Australia's Annual Overdose Report 2024.*

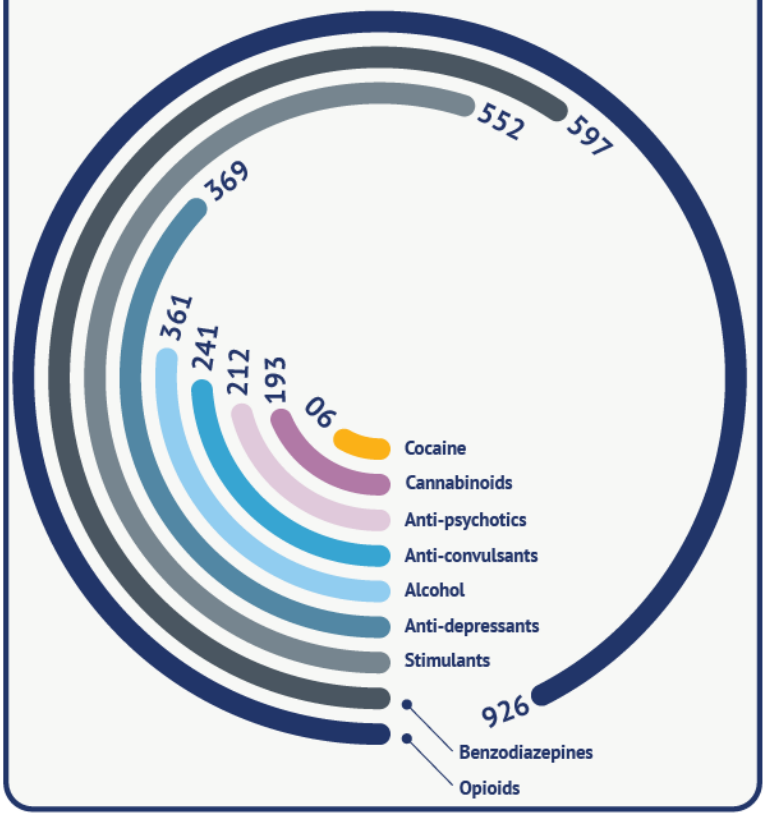
Number of drug-induced deaths in Australia in 2022



Unintentional drug-induced deaths:

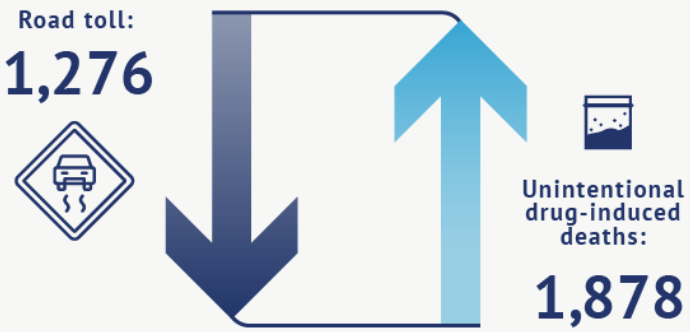
80% or **1,878** deaths

Number of unintentional drug-induced deaths by drug type in 2022

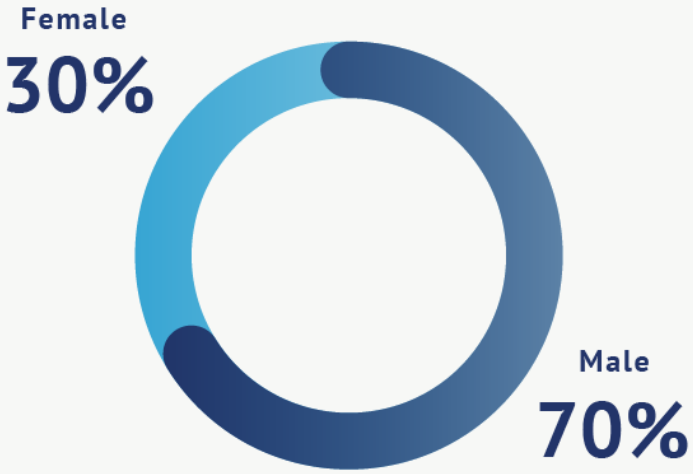


Increase in unintentional deaths compared with population growth 2002–2022

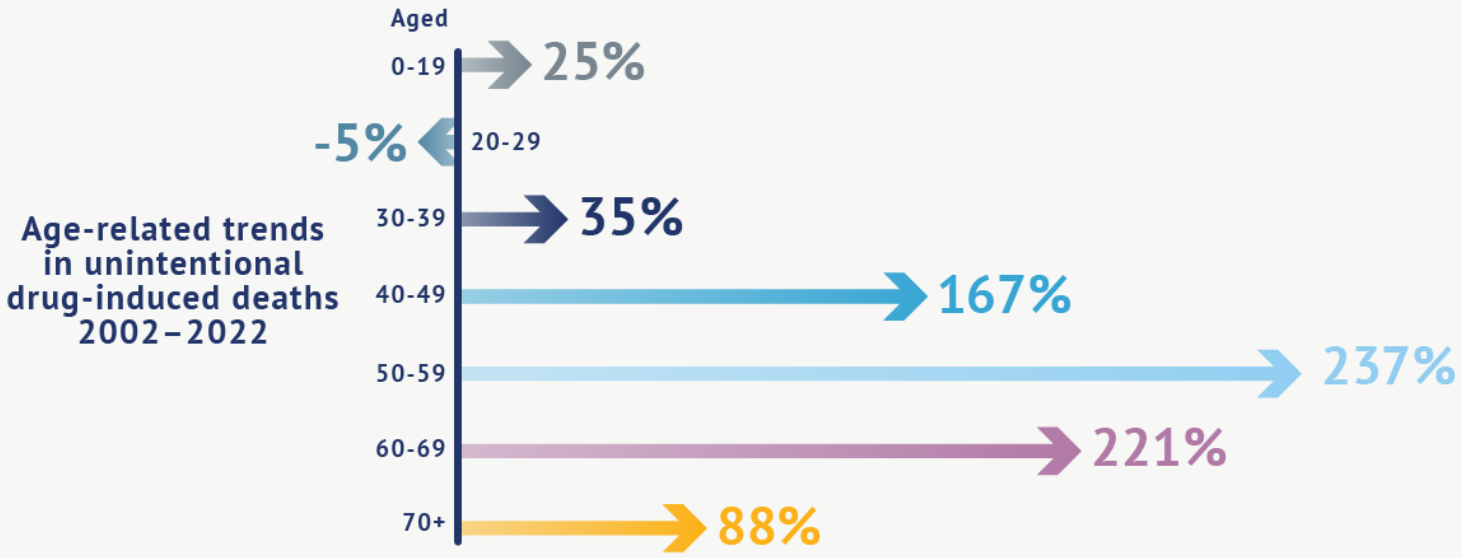
Unintentional drug-induced deaths exceeded the road toll in 2022



Males accounted for seven in ten unintentional drug-induced deaths in 2022



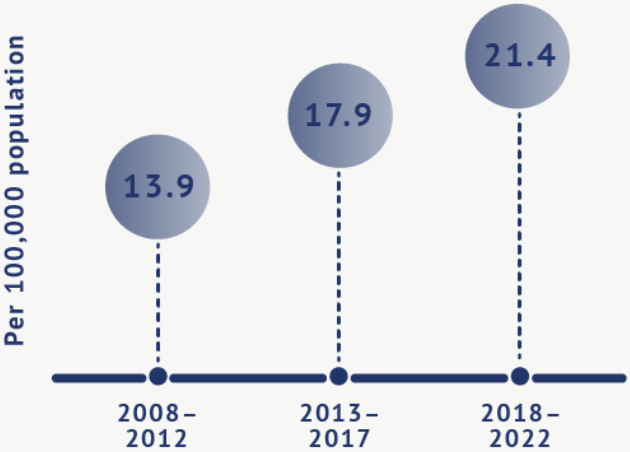
Age-related trends in unintentional drug-induced deaths 2002–2022



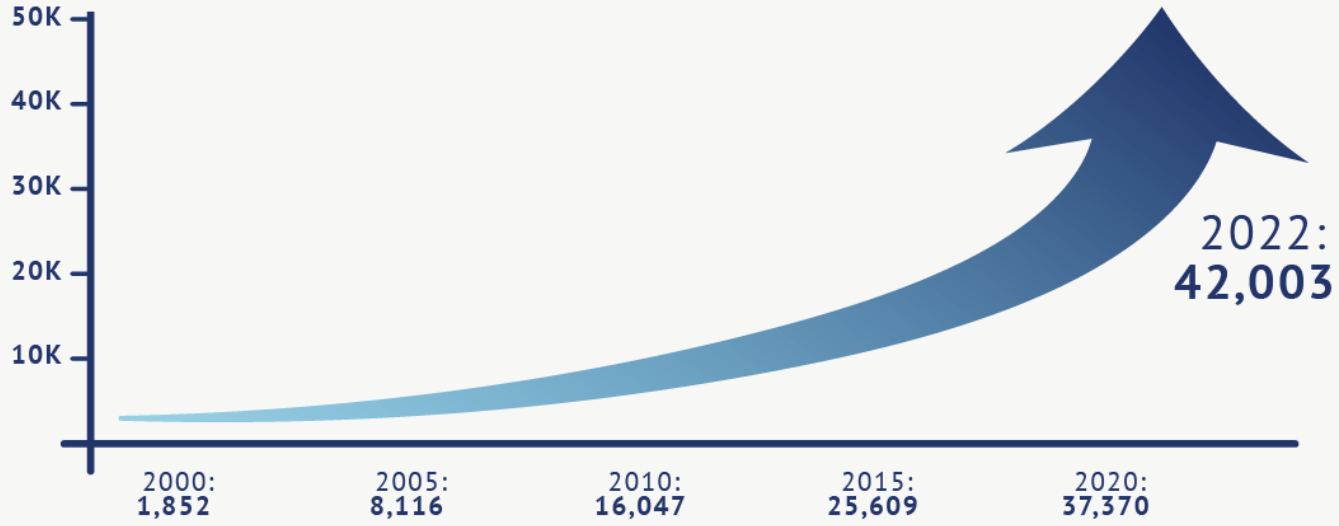
For the first time since 2002, the rate of unintentional drug-induced deaths was the same in metro and regional areas

Per 100,000 people

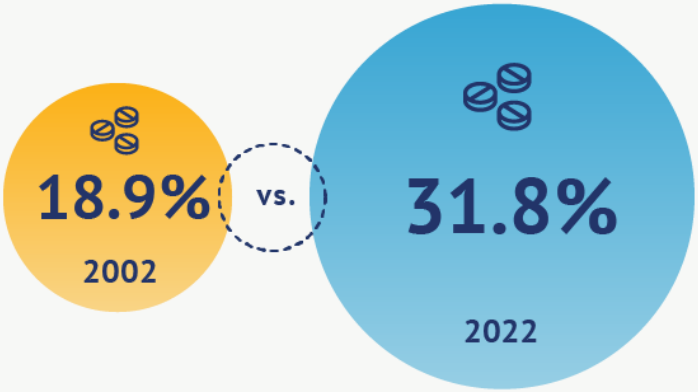
The rate of unintentional drug-induced deaths among Indigenous people has increased in each 5-year period since 2008–2012



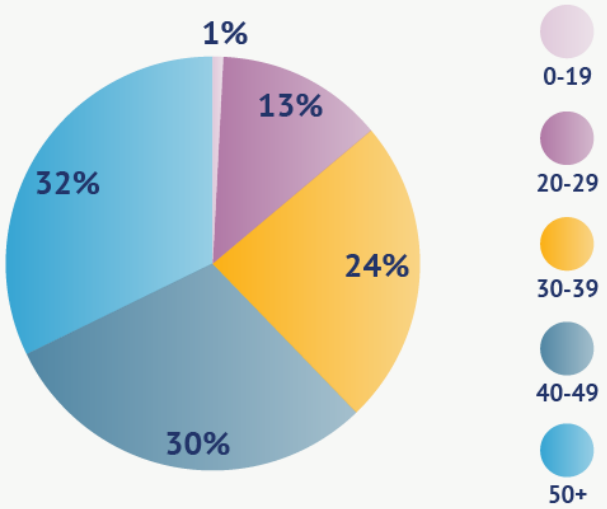
The number of overdose deaths since the turn of the century



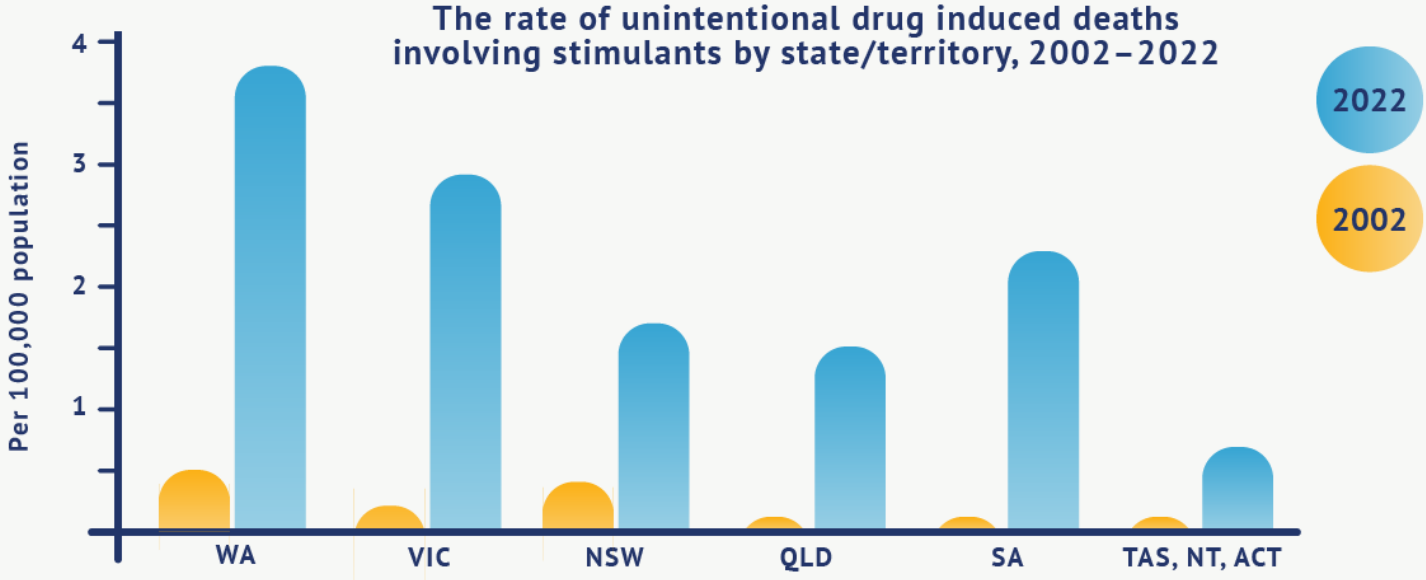
The proportion of unintentional drug-induced deaths involving benzodiazepines has almost doubled in the last 20 years

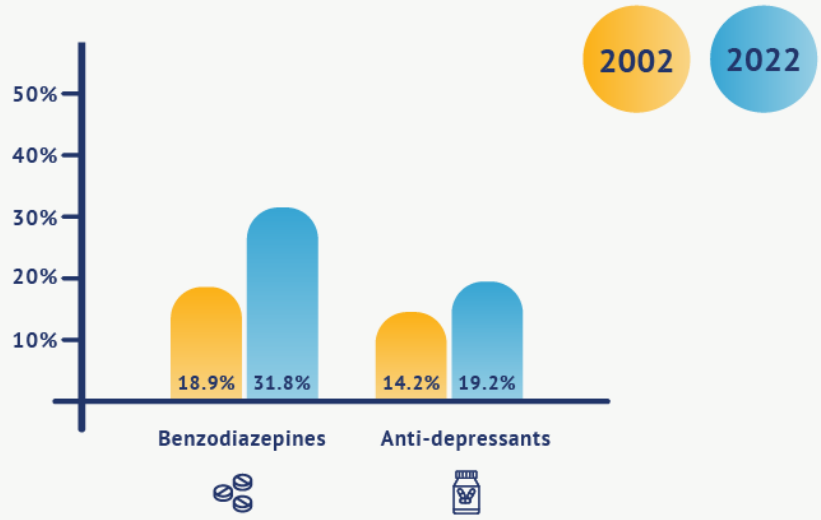


Almost two thirds of unintentional drug-induced deaths involving opioids occurred among people aged 40 and over in 2022

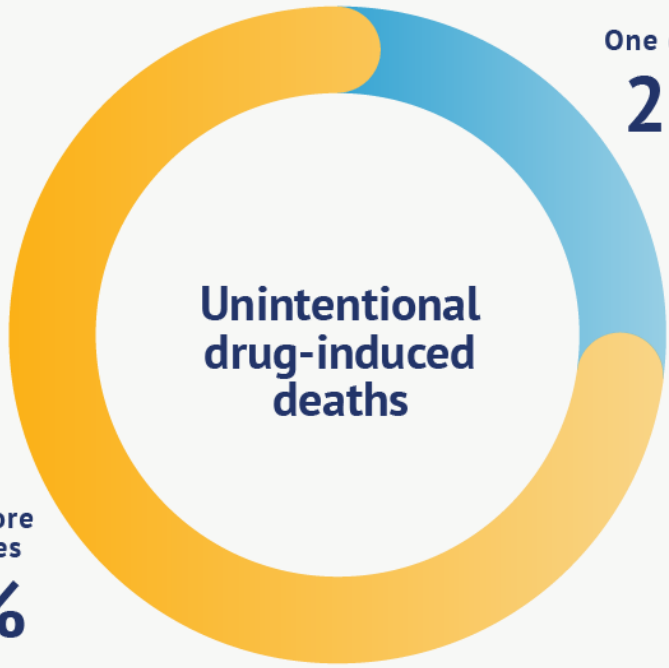


The rate of unintentional drug induced deaths involving stimulants by state/territory, 2002–2022





Increase in the proportion of unintentional drug-induced deaths involving benzodiazepines and anti-depressants from 2002–2022

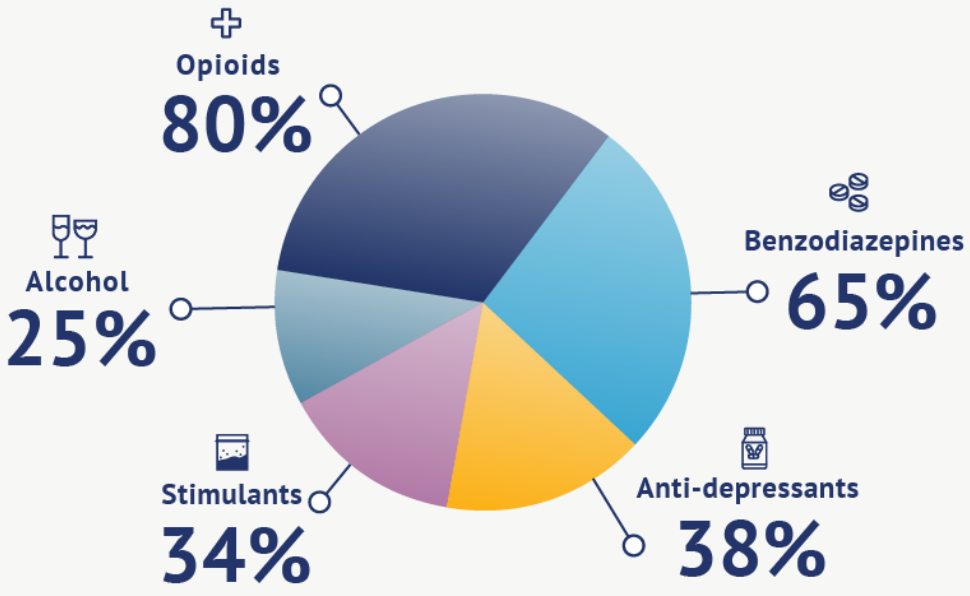


One drug type
27%

Two or more drug types
73%

From 2018–2022, seven in ten unintentional drug-induced deaths involved two or more drug types

Drug types most commonly involved in poly-drug deaths from 2018–2022



3. *Executive summary*

The number of Australians who die from drug overdose each year continues its long-term rise, with over 38,000 drug-induced deaths since 2002. *Australia's Annual Overdose Report 2024* presents a wide range of detailed data on these deaths, with a focus on unintentional drug-induced deaths.[1] As there are far more non-fatal than fatal drug overdoses in Australia every year, this report also presents a snapshot of non-fatal drug- and alcohol-related harm (including non-fatal overdose).

There were 2,356 drug-induced deaths reported in Australia in 2022, representing 69,815 years of life lost, with an average of 31 years of life lost per death. Of these deaths, 1,878 were unintentional. The annual number of unintentional drug-induced deaths surpassed the road toll[2] in 2014; the gap between the two has continued to widen ever since. The increase in the number of unintentional drug-induced deaths has also surpassed population growth. Since 2002 the national population of Australia has increased by 20.4% while the number of unintentional drug-induced deaths has grown by 108%.

Drug overdose is a leading cause of death across most adult age categories. For both men and women aged 20-29, drug-induced deaths were the third-leading cause of death in 2022 behind suicide and land transport accidents. For men aged 30-39, drug-induced deaths were the second leading cause of death and the third leading cause of death for men aged 40-49. For women aged 30-39, drug-induced deaths were the third leading cause of death behind suicide and breast cancer. For women aged 40-49, drug-induced deaths were again the second leading cause of death.

Intentional drug-induced deaths also exact a substantial toll on the Australian community, with 426 such deaths in 2022. Since 2002, the rate of intentional drug-induced death in rural and regional Australia has increased substantially, and is now higher than the rate in capital cities. The largest increases in these fatal overdoses over time are seen among older Australians, with people aged over 60 accounting for more than one-third (37.8%) of all such deaths in 2022.

Unintentional drug-induced deaths are not evenly distributed through our communities. Among Indigenous Australians, the rate of unintentional drug-induced death continues to be far higher than for non-Indigenous Australians: in 2022, their rate of unintentional drug-induced deaths was 23.3 per 100,000 population, compared with 6.1 for non-Indigenous people. Residents of rural and

[1] 'Unintentional drug-induced deaths' includes drug overdoses, incorrect drugs given or taken in error, and accidental poisoning due to drugs. Drug-induced deaths deemed to be homicide, suicide or of undetermined intent are not included in 'unintentional drug-induced deaths'.
[2] 'Road toll' refers to the number of lives lost in road traffic accidents. Road traffic accidents include all deaths due to road-related crashes, involving trucks, cars, buses, pedestrians, motorbikes and cyclists. For more detail see ICD-10 Version: 2019

regional parts of the country, and those from low socio-economic areas are also over-represented in such deaths, as are men. While unintentional drug-induced deaths were most common among those aged 40-49 in 2022, almost half of all such deaths were seen among people aged 50 and above. Australians aged 50 and above account for the greatest increase in unintentional drug-induced deaths since 2002. In contrast, deaths involving people aged below aged 20- 29 have decreased over time.

Deaths associated with multiple drug types are far more common than those associated with a single type of drug**.** Over the five years to 2022, more than two thirds of all unintentional drug-induced deaths involved two or more drug types (72.7%). The drug types most commonly involved in poly-substance deaths during the five-year period were opioids (involved in 80.4% of such deaths), benzodiazepines (65%), anti-depressants (37.9%), stimulants (35.2%), and alcohol (24.7%).

Unintentional poly-substance deaths were most commonly seen among older age groups regardless of sex, although notable sex differences may be seen among the older age cohorts in the five years to 2022. Two-thirds (65.7%) of unintentional deaths among females aged 50-59 involved poly-substance use, compared to 49.2% of such deaths among males. For those aged 60-69, poly-substance deaths accounted for 51.8% of unintentional drug-induced deaths among females and 32.6% among males. Similarly, these deaths accounted for 23.2% of unintentional drug-induced deaths among females aged 70 and over and 10.3% among males.

Opioids continue to be the most common drug type detected in unintentional drug-induced deaths in Australia. There are clear sex differences in the type of opioid most commonly detected in unintentional drug-induced deaths involving opioids. Among males, these deaths are most likely to involve heroin (involved in 50.2% of such deaths) followed by pharmaceutical opioids (44.7%). Among females, however, unintentional opioid-related deaths are far more likely to involve pharmaceutical opioids (60.5%) than heroin (30.7%).

Key findings relating to individual drug types for unintentional drug-induced deaths in 2022 include:

- Opioids contributed to 49.3% of unintentional drug-induced deaths (926 such deaths).
- Benzodiazepines contributed to 31.8% of unintentional drug-induced deaths (597 such deaths).
- Stimulants contributed to 29.4% of unintentional drug-induced deaths (552 such deaths).
- Alcohol contributed to 19.6% of unintentional drug-induced deaths (369 such deaths)
- Anti-depressants contributed to 19.2% of unintentional drug-induced deaths (361 such deaths).

- Anti-convulsants and neuropathic pain modulators contributed to 12.8% of unintentional drug-induced deaths (241 such deaths).
- Cannabinoids contributed to 11.3% of unintentional drug-induced deaths (212 such deaths).
- Anti-psychotics contributed to 10.3% of unintentional drug-induced deaths (193 such deaths).
- Cocaine contributed to only 4.8% of unintentional drug-induced deaths (90 such deaths).

Despite their prominence among unintentional overdose deaths in 2022, the proportion of unintentional deaths involving opioids has remained relatively stable over time, typically accounting for just under half of these deaths. In comparison, the proportion of unintentional deaths involving benzodiazepines has increased from 18.9% in 2002 to 31.8% in 2022, while the number of unintentional deaths involving stimulants has increased from just 6.3% in 2002 to 29.4% in 2022.

Non-fatal drug- and alcohol-related harm (including non-fatal overdose) continues to take a significant toll on our communities. In 2021-22, there were 135,179 drug- and alcohol-related hospitalisations in Australia, or 370 episodes per day. There were at least 159,862 drug- and alcohol-related ambulance attendances recorded for the year.[3] Alcohol accounted for the overwhelming majority of drug- and alcohol-related ambulance attendances (58%) and hospitalisations (59.4%) in 2022, far outweighing the contribution of any other drug type.

[3] Not all ambulance attendances will result in someone being admitted to hospital. Some will not even result in the person being transported to hospital.

4. *Data sources and status*

This report is about **fatal and non-fatal drug-induced** overdose in Australia, with a focus on unintentional drug-induced deaths.

Term	Definition
All drug-induced deaths	Deaths directly attributable to the drug use, as opposed to drug-related deaths which are deaths where a drug was found to be a contributory factor (such as a car crash where the deceased was found to be affected by drug or alcohol intoxication at the time of death).[4] Refers to ICD-10 codes F10-F16, F19, F55, X40-X45, X60-X65, X85 and Y10-Y15. This includes drug-induced deaths due to all intents (homicide, suicide, accidents and undetermined).
Unintentional-drug induced deaths	Includes drug overdoses, incorrect drugs given or taken in error, and accidental poisoning due to drugs.[5] Refers to ICD-10 codes F10-F16, F19, F55 and X40-X45. For poly-drug use tables, Unintentional drug-induced deaths refers to ICD-10 codes X40-X45 only. Only deaths due to drug overdoses are included in poly-drug use output.
Drug-induced suicides	Include intentional self-inflicted poisoning by exposure to a range of drug types including drugs approved for pharmaceutical use, illicit drugs and/or alcohol. Also referred to as **intentional drug-induced suicides.** Refers to ICD-10 codes X60-X65

[4] Drug-induced deaths deemed to be homicide, suicide or of undetermined intent are not included in unintentional drug-induced deaths.

[5] There is no systematic definition to differentiate intentional from unintentional death, and coroners may not make a finding on intent for various reasons. Care should therefore be taken in interpreting figures relating to intentional self-harm. For more information on the coding of suicide, see ABS (2023). *Deaths due to intentional self-harm (suicide).*

Data sources

Data on drug-induced deaths in this report were sourced from the Australian Bureau of Statistics (ABS) in a customised report provided in April 2024.[6]

Data on **drug- and alcohol-related hospitalisations** sourced from the Australian Institute of Health and Welfare's National Hospital Morbidity Database.[7] This database captures data on the number of hospitalisations where the principal diagnosis relates to a substance use disorder or direct harm due to selected substances.[8]

Data on **drug- and alcohol-related ambulance attendances** is sourced from the National Ambulance Surveillance System (NASS), which is the product of a partnership between AIHW, Turning Point and Monash University.[9] Monthly data for 2022 are currently available for New South Wales, Victoria, Queensland, Tasmania, the Australian Capital Territory and the Northern Territory.[10] More information on the data underpinning this report, including definitions and methods used in preparing the report, is presented in Appendix 1.

4.1. Preliminary data

In Australia, all suspected drug-induced deaths must be reported to a coroner. These investigations can, in some instances, take several years. Therefore, the first available data on drug-induced deaths are preliminary; they are then revised the following year, and then finalised the year after that.[11]

Drug-induced death data for 2021 and 2022 presented in this report should be considered preliminary. Based on past reporting, the final number of deaths for 2021 and 2022 is expected to be higher than the preliminary data. Comparing 2020 data between the 2022, 2023 and 2024 reports, numbers have increased on average by approximately 8.8% as they move from preliminary to finalised, with the increase from preliminary to revised typically larger than the subsequent increase from revised to finalised. These later inclusions, while adding a small number of deaths to the totals

[6] Full explanatory notes for the most recent cause of death data are available via ABS (2023). *Causes of death, Australia.*
[7] The National Hospital Morbidity Database is part of the AIHW's National Hospitals Data Collection.
[8] ICD-10 codes in the categories 'mental and behavioural disorders due to psychoactive substance use' and 'poisoning by drugs, medicaments and biological substances'. See further: Australian Institute of Health and Welfare (2024). *Alcohol, tobacco and other drug use in Australia: Health impacts.*
[9] NASS data are available via Australian Institute of Health and Welfare (2024). *Alcohol, tobacco & other drugs in Australia*.
[10] Some data for Tasmania and the Australian Capital Territory have been suppressed due to low numbers.
[11] Further information on the status of the data is available in Appendix 1 – technical specifications.

each year, do not have any substantive effect on the trends or the main findings of these reports. For example, current data for unintentional drug-induced deaths show 1,232 such deaths in 2021 and 1,878 in 2022. Applying projections based on the average increase as the numbers move from preliminary to revised to finalised, next year's report will likely show approximately 1,764 unintentional drug-induced deaths in 2021 and 2,015, in 2022.

As 2021 and 2022 data are not yet finalised, in graphs depicting a time-series, data for 2021 and 2022 are represented as being to the right of a dashed vertical line on the graph.

Overdose and the COVID-19 pandemic

The impact of the COVID-19 pandemic has been profound. In Australia during this reporting period, interventions aimed at reducing virus transmission – border closures, restrictions on social movement, lockdowns and increased police power – caused major disruptions to everyday life. These measures were in place from June 2020 to October 2020 in most Australian jurisdictions and were re-instated in New South Wales and Victoria from June 2021. As daily case numbers decreased in the beginning of 2022, restrictions eased and social movement resumed. In 2022, COVID-19 was the third leading cause of death (with 9,859 deaths due to COVID-19). This was the first time an influenza has appeared in the top five leading causes of death in Australia since influenza and pneumonia in 1970.[12]

Border and travel restrictions had substantial impacts on some drug markets, particularly those involving cocaine, MDMA, heroin and methamphetamine. [13] Wastewater analysis shows the total estimated consumption of these four drug types decreased by 4.7 tonnes from August 2020 to August 2021. As many health measures were relaxed in 2022, most drug markets returned to pre-COVID settings. Between December 2021 and April 2022 national consumption of methylamphetamine increased in both capital city and regional areas, while consumption of heroin and cocaine remained stable.[14] Between April and August 2022 consumption of alcohol, nicotine, methylamphetamine and cocaine decreased, while MDMA, heroin, fentanyl and ketamine all increased.[15]

Restrictions associated with the pandemic affected people's drug use behaviours and led to an increase in psychological stressors. High levels of unemployment, economic stress, educational disruption, and social isolation led to a decline in population mental health,[16] particularly among

[12] Australian Bureau of Statistics (2023). *Causes of Death, Australia*
[13] Australian Criminal Intelligence Commission (2022). *National Wastewater Drug Monitoring Program: Report 15.* Canberra: ACIC.
[14] Australian Criminal Intelligence Commission (2022). *National Wastewater Drug Monitoring Program: Report 15.* Canberra: ACIC.
[15] Australian Criminal Intelligence Commission (2023). https://www.acic.gov.au/sites/default/files/2023-03/NWDMP%20Report%2018_1.PDF
[16] Dawel, A., Shou, Y., Smithson, M., Cherbuin, N., Banfield, M., Calear, A. L., et al. (2020). The effect of COVID-19 on mental health and wellbeing in a representative sample of Australian adults. *Frontiers in Psychiatry*, *11*, 579985; Griffiths, D., Sheehan, L., van Vreden, C., Petrie, D., Whiteford, P., Sim, M. R., & Collie, A. (2022). Changes in work and health of Australians during the COVID-19 pandemic: a longitudinal cohort study. *BMC Public Health*, *22*(1), 487.

young people, females, and those with prior mental health challenges.[17] Prescriptions for psychotropic drugs (including anti-depressants, anti-psychotics, and psychostimulants) increased significantly compared with pre-pandemic trends.[18] Alcohol sales increased significantly between 2019 and 2021, facilitated by the rise in online delivery and take-away services.[19] According to self-report data, one in five Australians reported increased alcohol use during the pandemic to cope with psychological stress and boredom.[20] Research conducted with people who regularly use drugs found that one in four reported stockpiling illicit drugs due to concerns about the impact of pandemic restrictions on drug availability.[21]

Changes to drug use behaviours – including initiation among novel users, relapse among people who previously used drugs, or increased use whilst in isolation – may have increased the risk of overdose. These issues were further compounded by changes to the broader health system and the specialist harm reduction and drug treatment sectors, with some services unable to provide face-to-face contact or take on new clients.

[17] Zhao, Y., Leach, L. S., Walsh, E., Batterham, P. J., Calear, A. L., Phillips, C., et al. (2022). COVID-19 and mental health in Australia–a scoping review. *BMC Public Health*, *22*(1), 1-13; Butterworth, P., Schurer, S., Trinh, T. A., Vera-Toscano, E., & Wooden, M. (2022). Effect of lockdown on mental health in Australia: evidence from a natural experiment analysing a longitudinal probability sample survey. *The Lancet Public Health*, *7*(5), e427-e436; Australian Institute of Health and Welfare (2021). COVID-19 and the impact on young people.

[18] Wood, S. J., Ilomäki, J., Gould, J., Tan, G. S., Raven, M., Jureidini, J. N., & Grzeskowiak, L. E. (2023). Dispensing of psychotropic medications to Australian children and adolescents before and during the COVID-19 pandemic, 2013–2021: A retrospective cohort study. *Medical Journal of Australia*; de Oliveira Costa, J., Gillies, M. B., Schaffer, A. L., Peiris, D., Zoega, H., & Pearson, S. A. (2023). Changes in antidepressant use in Australia: A nationwide analysis (2015–2021). *Australian & New Zealand Journal of Psychiatry*, *57*(1), 49-57; Australian Institute of Health and Welfare (2022). *Mental health-related prescriptions.*

[19] Colbert, S., Wilkinson, C., Thornton, L., & Richmond, R. (2020). COVID-19 and alcohol in Australia: Industry changes and public health impacts. *Drug and Alcohol Review*, *39*(5), 435–4; Australian Institute of Health and Welfare (2023). *Alcohol, tobacco & other drugs in Australia: Impacts of COVID-19 on alcohol and other drug use.*

[20] Australian Institute of Health and Welfare (2023). *Alcohol, tobacco & other drugs in Australia: Impacts of COVID-19 on alcohol and other drug use.*

[21] Peacock, A., Price, O., Dietze, P., Bruno, R., Salom, C., Lenton, S., Swanton R., Uporova, J, et al. (2020). Impacts of COVID-19 and associated restrictions on people who use illicit stimulants in Australia: Preliminary findings from the Ecstasy and Related Drugs Reporting System (EDRS), in National Drug and Alcohol Research Centre 2020. Sydney: National Drug and Alcohol Research Centre, UNSW Sydney; Sutherland, R., Baillie, G., Memedovic, S., Hammoud, M., Barratt, M., Bruno, R., Dietze, P., Ezard, N., Salom, C., Degenhardt, L., Hughes, C. & Peacock, A. (2020). Key findings from the 'Australians' Drug Use: Adapting to Pandemic Threats (ADAPT)' Study. ADAPT Bulletin no. 1. Sydney: National Drug and Alcohol Research Centre, UNSW Sydney.

5. *All drug-induced deaths 2002-2022*

All overdose deaths are complex and involve a variety of factors including injury and disease, mental illness and social disadvantage. This chapter examines trends and patterns in **all drug-induced deaths**. Multiple drug types are often reported on a single death record, resulting in the sum count of drug types being higher than the total number of deaths. The below case study illustrates these factors.

Case study: Michael

Michael* was 44 years old when he died. He had an extensive history of problematic alcohol consumption, in particular in times of stress or grief. Michael had attended inpatient detoxification on multiple occasions and attended Alcoholics Anonymous meetings. He also had a history of use of other drugs such as methylamphetamine.

Michael had been diagnosed with personality disorder, anxiety and alcohol use disorder. He had spent time in custody for crimes involving alcohol fuelled violence and had several criminal matters pending at the time of his death. He was estranged from his children.

On the day of his death, Michael was found unresponsive on a mattress in a friend's living room, having consumed large quantities of cask wine and vanilla essence. A used syringe was found nearby.

Michael's cause of death was found to be acute alcohol intoxication. Methylamphetamine was also present which may have also contributed to his death.

*Not his real name

While the focus of this report is on *unintentional* drug-induced deaths, this chapter provides context by comparing trends in **drug-induced deaths** to **road traffic accidents**[22] and **car crashes**[23].

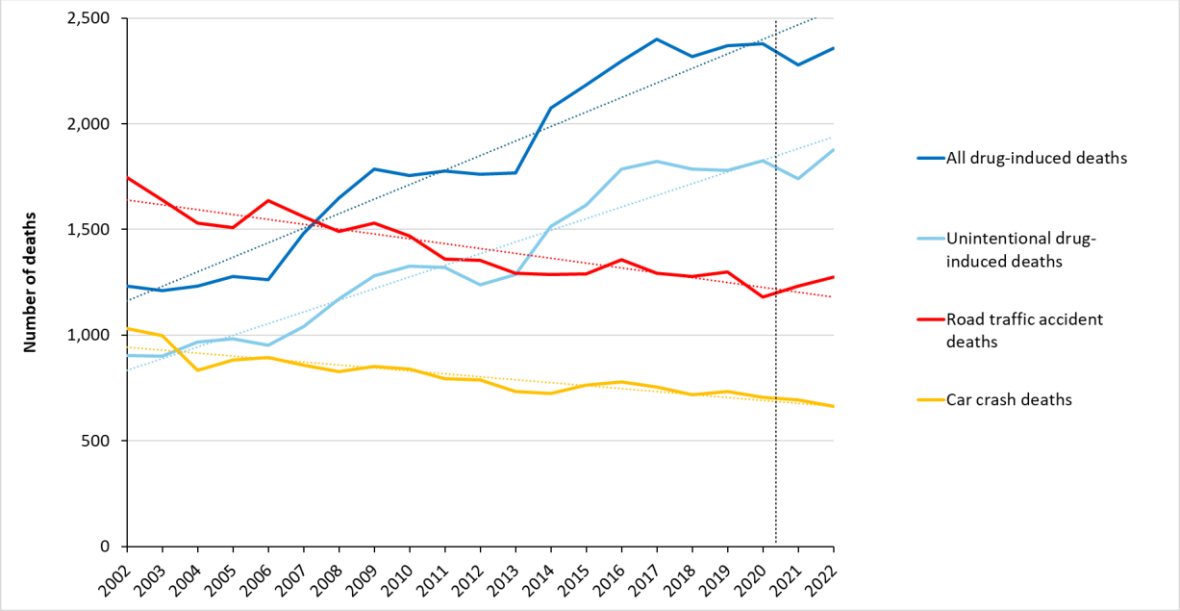
In 2022, there were 2,356 drug-induced deaths in Australia equating to 69,815 years of life lost, with an average of 31 years of life lost per drug-induced death.[24] Internationally, as a point of reference, the 2022 rate of all drug-induced deaths in Australia was 8.8 per 100,000 people, compared with 8.4 deaths per 100,000 people in England and Wales in 2022[25] and 32.6 per 100,000 people in the United States in 2022.[26] The current rate of deaths in Australia is equivalent to the rate of deaths in the United States in 2003.[27]

As shown in Figure 1, in 2008 the number of all drug-induced deaths in Australia surpassed the number of deaths from road traffic accidents. Drug-induced deaths have continued to rise as the number of road traffic deaths have continued to fall. In 2014, the number of unintentional drug-induced deaths also surpassed deaths from road traffic accidents and has continued to increase, reaching 1,878 in 2022.

Between 2002-2022, drug-induced deaths increased by an average of 3.2% and unintentional drug-induced deaths increased by an average of 3.3% per year. Applying these rates to current year data suggests we will see an additional 398 drug-induced deaths by 2027; 335 of these will likely be unintentional. In contrast, road traffic accident deaths have decreased on average by 1.5% per year, equating to 95 fewer deaths by 2027.

[22] 'Road traffic accidents' include all deaths due to road-related crashes, involving trucks, cars, buses, pedestrians, motorbikes and cyclists. For more detail see ICD-10 Version: 2019
[23] 'Car crashes' refers to persons who died as occupants of a car involved in a collision or crash.
[24] As calculated by Australian Bureau of Statistics (ABS), Years of life lost (YLL) is a measure of premature mortality that takes into account both the frequency of deaths and the age at which it occurs. For more information see *Causes of Death, Australia methodology.*
[25] Office for National Statistics (2023). *Deaths related to drug poisoning in England and Wales.*
[26] Centers for Disease Control and Prevention (2024). *Drug overdose deaths in the United States, 1999-2021.*
[27] Hedegaard, H., Minino, A. and Warner, M. (2022). *NCHS data brief no. 356: Drug overdose deaths in the United States, 1999-2018.* Centers for Disease Control and Prevention.

Figure 1. Number of drug-induced deaths in Australia, compared with road-related deaths, 2002-2022



Note: Data to the right of the dotted line (2021 and 2022 data) are preliminary, and likely to rise. 'Road traffic accident deaths' includes all deaths due to road-related accidents; 'car crash deaths' includes only those deaths involving an occupant of a car.

To place the impact of drug-induced deaths in a broader context, it is useful to identify the relative rank of the number of these deaths compared with deaths from all causes. Table 1 presents the ranking of drug-induced deaths in 2022 for males and females aged 20 and over.

In Australia, drug-induced deaths are a leading cause of death across most adult age categories.

For both males and females aged 20-29, drug-induced deaths were the third-leading cause of death behind suicide and land transport accidents. For those aged 30-39, drug-induced deaths were the second-leading cause of death behind suicide for males and the third-leading cause of death for females. Drug-induced deaths were again the third-leading cause of death in the 40-49 age group for males and second leading cause for females, although there was some variation: suicide and ischaemic heart disease were the top two causes of death for males in this age group, while breast cancer was the top cause of death for females. Drug-induced deaths ranked sixth for males and tenth for females aged 50-59 and did not appear in the top 20 rankings for those aged 60 and above. For the first time, COVID-19 was the third leading cause of death for this age group.

Table 1. Top three causes of death by age group and sex, 2022

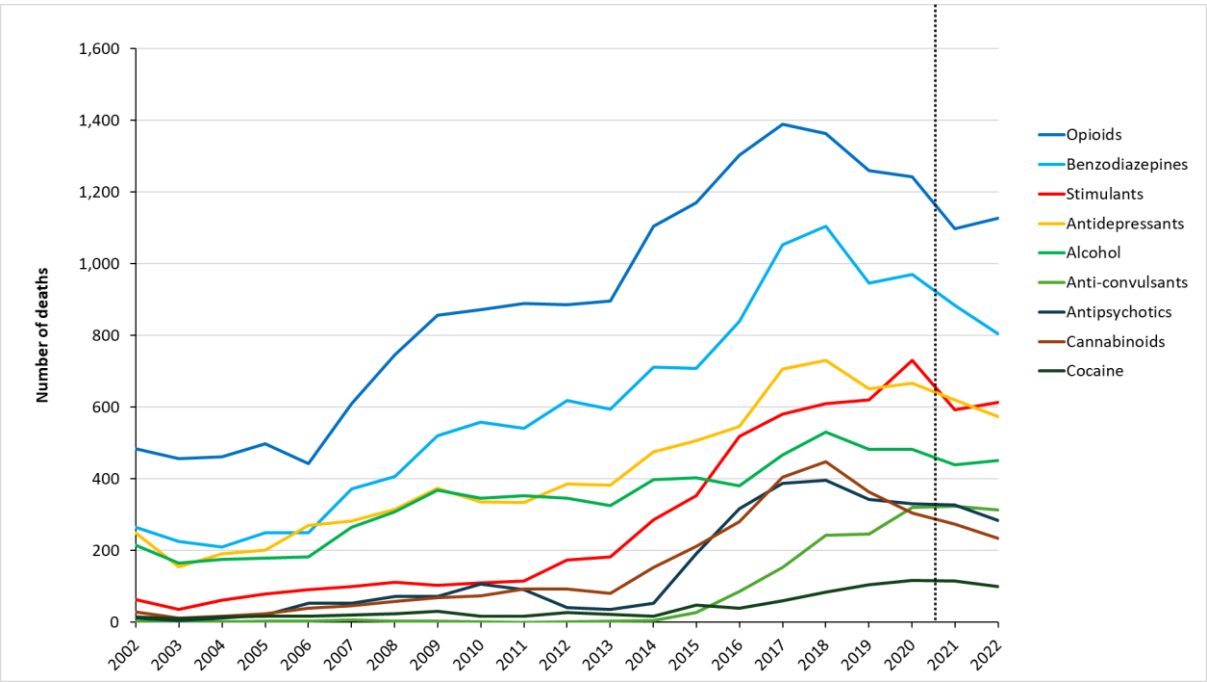
Age	Rank	Males	Females
20-29	1st	Suicide	Suicide
	2nd	Land transport accidents	Land transport accidents
	3rd	**Accidental poisoning: drug/alcohol**	**Accidental poisoning: drug/alcohol**
30-39	1st	Suicide	Suicide
	2nd	**Accidental poisoning: drug/alcohol**	Breast cancer
	3rd	Land transport accidents	**Accidental poisoning: drug/alcohol**
40-49	1st	Suicide	Breast cancer
	2nd	Ischaemic heart diseases	**Accidental poisoning: drug/alcohol**
	3rd	**Accidental poisoning: drug/alcohol**	Suicide
50-59	1st	Ischaemic heart diseases	Breast cancer
	2nd	Suicide (intentional self harm)	Lung cancer
	3rd	Suicide (other)	Ischaemic heart diseases
		Accidental poisoning: drug/alcohol (6th)	**Accidental poisoning: drug/alcohol (10th)**
60+	1st	Ischaemic heart diseases	Dementia and Alzheimer disease
	2nd	Dementia and Alzheimer disease	Ischaemic heart diseases
	3rd	COVID-19	Cerebrovascular diseases

Note: 'Land transport accidents' include those involving the death of a person due to any form of land vehicle, whether the person is a vehicle occupant, a rider or a pedestrian. It is a broader category than road traffic accidents as it also includes deaths due to vehicles such as trains and agricultural equipment.

As shown in Figure 2, opioids continued to be the largest drug group identified in drug-induced deaths, followed by benzodiazepines, stimulants (including methamphetamine, amphetamine, and ecstasy) and anti-depressants. Drug-induced deaths involving opioids, benzodiazepines and anti-depressants have been increasing steadily over the past decade, following a fairly stable period preceding 2006. From 2009 onwards, the number of drug-induced deaths involving alcohol appears to have increased more slowly. In contrast, deaths involving stimulants, anti-psychotics and anti-convulsants have increased rapidly since 2013. Deaths involving stimulants have trebled in recent years, from 174 in 2012 to 613 in 2022, making it the third largest drug group identified in drug-induced deaths. Deaths involving anti-psychotics have increased from 41 in 2012 to 283 in 2022.[28] Deaths involving anti-convulsants were rare in the decade prior to 2014, possibly due to limited prescribing of pregabalin in Australia prior to this time.[29] However, deaths involving anti-convulsants increased from 26 in 2015 to 313 in 2022.

[28] Laboratories have been increasingly able to detect some anti-psychotics as instrumentation has evolved to allow lower detection limits, particularly for the more potent analogues.
[29] Pharmaceutical Benefits Advisory Committee, Drug Utilisation Sub-committee (2014). *Pregabalin: 12 month predicted versus actual analysis.* Canberra: Department of Health.

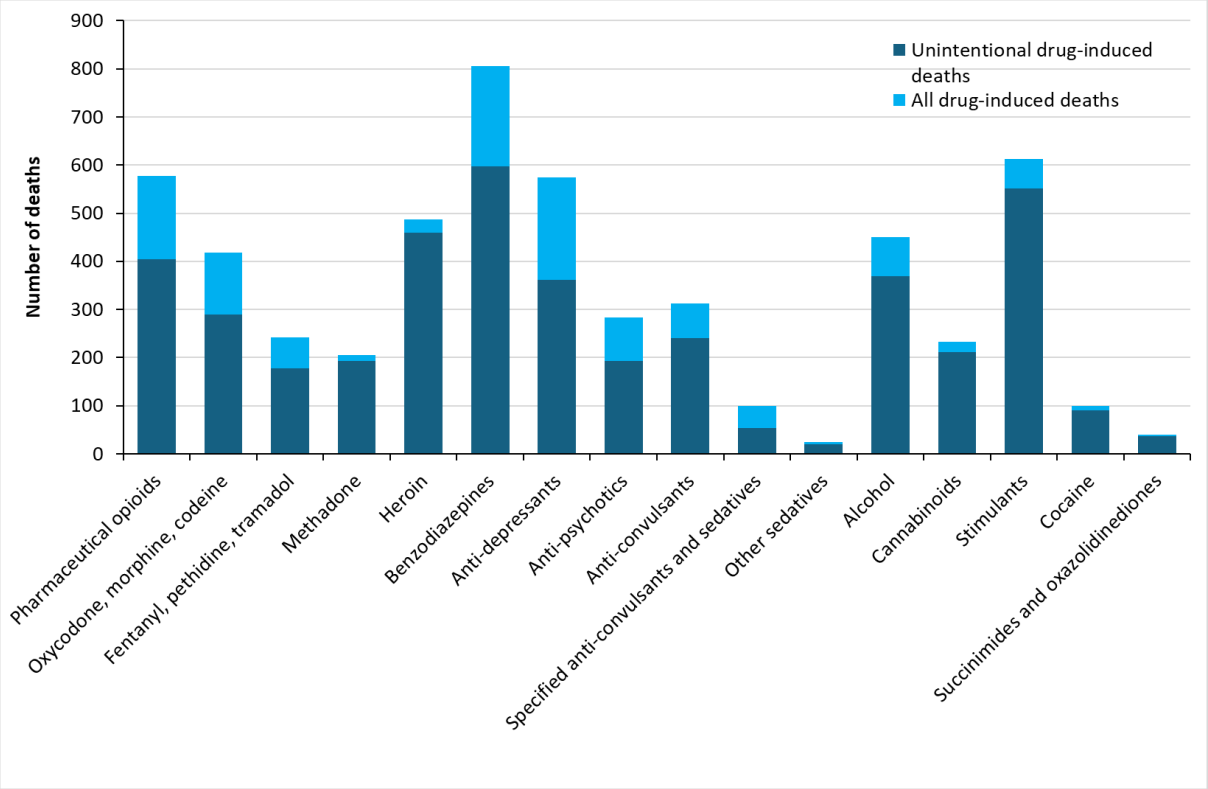
Figure 2. Number of drug-induced deaths in Australia, by drug type, 2002-2022



Note: Data to the right of the dotted line (2021 and 2022 data) are preliminary, and likely to rise. Smaller drug groups including other sedatives (including ketamine), and succinimides and oxazolidinediones (including GHB) are not shown on the figure above, due to low numbers.

The proportion of all drug-induced deaths that were unintentional differed by substance type, with percentages ranging from 54.0% to 94.9% in 2022. The drugs with the highest proportion of unintentional drug-induced deaths (compared with total drug-induced deaths) were succinimides and oxazolidinediones (94.9%), methadone (94.1%), heroin (94.5%), and cannabinoids (91%). The drugs with the lowest proportions of drug-induced deaths that were unintentional were specified anti-convulsants and sedatives (54%), anti-depressants (62%) and anti-psychotics (68.2%).

Figure 3. Number of drug-induced deaths in 2022 by drug type: all deaths and unintentional deaths



Note: Substances are grouped in order of type: opioids, followed by other pharmaceutical drugs then recreational drugs. Pharmaceutical opioids include the groups oxycodone, morphine, codeine and fentanyl, pethidine, tramadol. Opium is not shown on the graph as a single bar as there were zero recorded deaths involving opium.

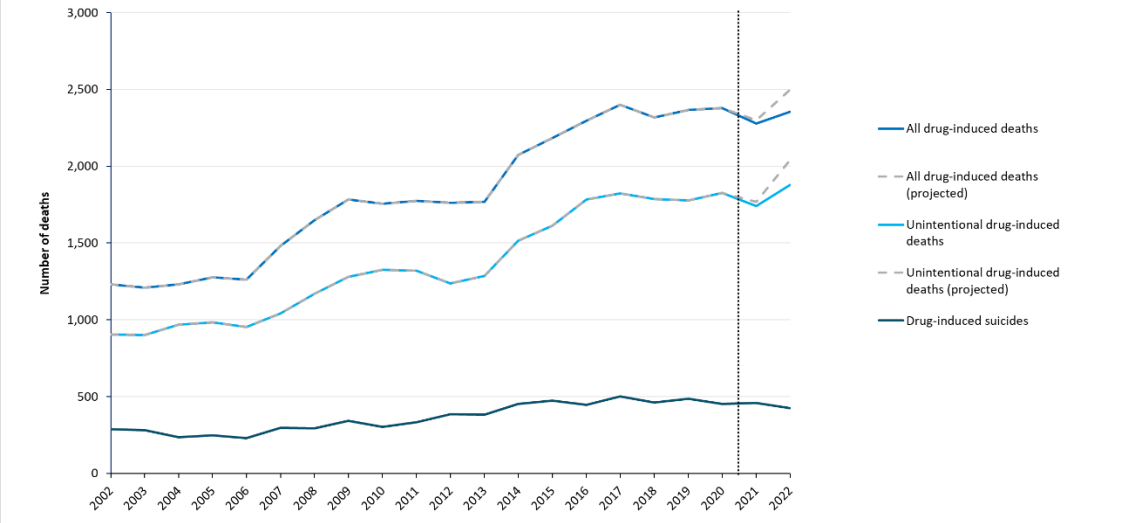
Most drug-induced deaths are unintentional, with the proportion of unintentional drug-induced deaths remaining relatively constant between 2002 and 2022 (ranging from 74.7% to 79.7%, with an average of 74.8%). As can be seen in Figure 4, both intentional and unintentional drug-induced deaths are continuing to trend upwards and are increasing more rapidly than the population is growing. From 2002 to 2022, the population of Australia increased by 34.2% (from 19,605,441 people in December 2002 to 26,312,201 in December 2022).[30] In comparison, over the same period the number of all drug-induced deaths has increased by 91.4% (from 1,231 to 2,356), and unintentional drug-induced deaths have increased by 107.97% (from 903 to 1,878).

Applying projections based on the observed increase in the number of deaths as the status of the data progresses from preliminary to revised to finalised,[31] the finalised number of all drug-induced deaths is projected to be 2,301 for 2021 and 2,498 for 2022, while the finalised number of unintentional drug-induced deaths is projected to be 1,769 for 2021 and 2,039 for 2022.

The number of drug-induced suicides – presented in more detail in the following chapter – has increased by 48.4%, from 287 in 2002 to 426 in 2022.[32]

[30] Australian estimated resident population data are available from ABS (2023). *National, state and territory population, December 2022.* Australian Bureau of Statistics.
[31] Further information on the status of the data is available in Appendix 1 – technical specifications.
[32] Prior to 2006, when the ABS moved to the online National Coronial Information System, suicide deaths may have been undercounted.

Figure 4. Number of unintentional drug-induced deaths and drug-induced suicides compared with all (total) drug-induced deaths, 2002-2022



Note: Data to the right of the dotted line (2020 and 2021 data) are preliminary, and likely to rise. Data for projecting drug-induced suicides were not available.

6. *Intentional drug-induced deaths 2002-2022*

This chapter presents data on **intentional drug-induced deaths**, referred to as **drug-induced suicides**. 'Drug-induced suicide' deaths include intentional self-inflicted poisoning by exposure to a range of drug types including drugs approved for pharmaceutical use, illicit drugs and/or alcohol.[33]

Drug-induced suicides make up a small proportion of drug-induced deaths in Australia. Due to the variety of factors that influence determinations of intent, drug-induced suicides may be underreported. The below case study is an example of the complex, intersecting factors which can contribute to a determination of intentional drug-induced death.

Case study: David

David* was 52 when he died. David experienced multiple co-morbidities of obesity, cardiovascular disease and obstructive sleep apnoea. He also experienced chronic facial pain, which, combined with obstructive sleep apnoea affected his mood and ability to cope with the pain. This had resulted in David leaving his profession as a tattoo artist.

In the two years prior to his death, David was prescribed oxycodone, antidepressants, Amitriptyline (used to treat neuropathic pain) and Zoloft (an anti-depressant) and was expected to undergo dental work alleviate his facial pain. In the two weeks prior to his death, David's partner described his appearance as pale, that his depression was worsening due to ongoing pain, and that he believed he had become a burden on his partner.

After David failed to return home, a search was undertaken. He was found in his RV in bushland, without phone reception. Paramedics found over-the-counter medication containing pain relief and antihistamines (paracetamol, codeine and doxylamine) nearby. A letter written by David was later found in the vehicle indicating the facial pain was unbearable and his medications were becoming ineffective.

Toxicological analysis found Amitriptyline, Doxylamine, Ketamine, Midazolam (benzodiazepine), paracetamol, sertraline and pseudoephedrine and tetrahydrocannabinol in his system.

[33] There is no systematic definition to differentiate intentional from unintentional death, and coroners may not make a finding on intent for various reasons. Care should therefore be taken in interpreting figures relating to intentional self-harm. For more information on the coding of suicide, see ABS (2023). *Deaths due to intentional self-harm (suicide).*

The coroner found David died of an intentional polypharmacy drug overdose in the context of poor health.

*Not his real name

As seen in Table 2, the highest numbers of drug-induced suicides in 2022 were reported in Queensland (109 deaths), followed by NSW[34] (97 deaths) and Victoria (95 deaths).

Table 2. Number of drug-induced suicides by state or territory, 2002-2022

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
QLD	72	65	66	61	64	76	69	75	63	75	87	104	106	132	97	121	117	118	101	117	109
NSW	88	81	67	63	53	89	92	88	86	100	140	107	115	125	124	137	131	124	129	119	97
VIC	75	67	52	58	52	57	59	90	63	78	63	82	107	103	104	111	110	108	95	97	95
WA	18	23	20	21	15	37	30	47	51	38	55	38	55	50	57	59	54	54	47	51	49
SA	19	34	18	27	30	25	32	24	24	27	25	34	39	42	37	44	32	43	37	37	41
TAS	9	5	8	12	7	8	7	11	10	8	11	12	15	13	21	12	9	22	17	18	19
ACT	4	6	1	5	5	4	1	7	3	5	5	4	10	7	1	15	9	17	22	17	15
NT	2	0	0	2	1	4	3	0	2	3	0	1	6	3	4	2	2	0	4	2	1

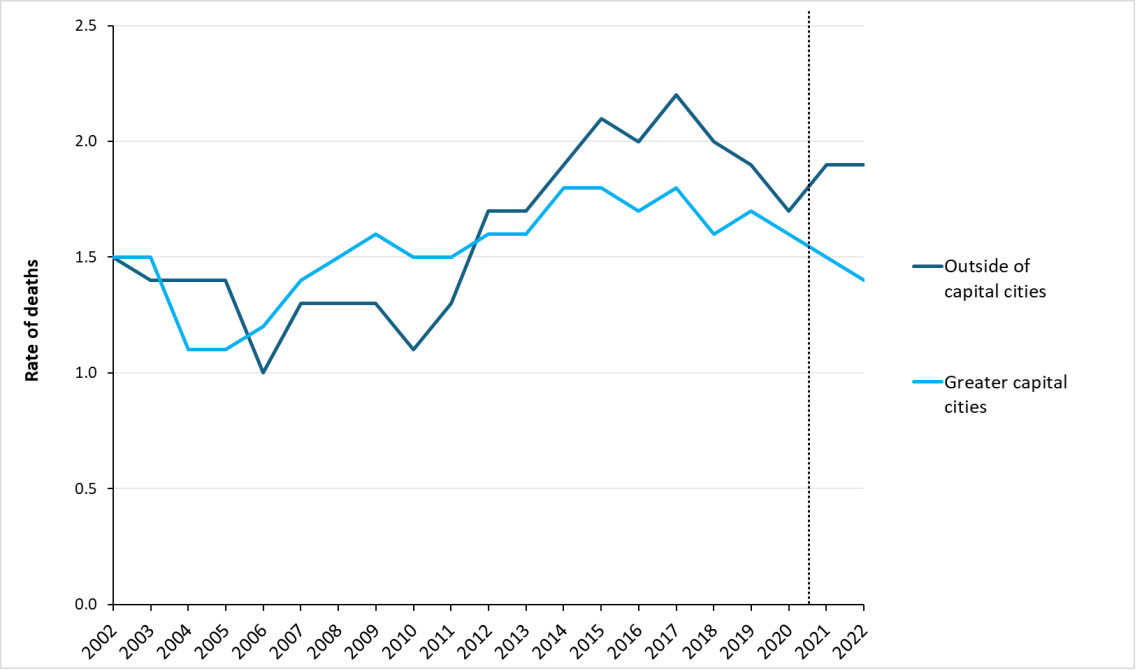
Note: 2021 and 2022 data are preliminary, and likely to rise.

[34] The implementation of JusticeLink in the NSW coronial system in 2012 significantly improved the quality of NSW data in the National Coronial Information System. There has therefore been an increase in the number of drug-induced suicides registered since 2012, coupled with fewer cases of deaths of undetermined intent.

As shown in Figure 5, from 2006 to 2011 the rate of drug-induced suicides was proportionally higher in capital city areas than in regional Australia; the regions overtook capital city areas, however, in 2012. Since then, the rate of drug-induced suicides has increased by 11.8% in the regions, while the rate in capital cities has remained relatively stable.

Preliminary data suggest the rate of drug-induced suicide outside of capital cities is increasing: in 2022, there were 1.9 drug-induced suicides per 100,000 people in rural and regional areas, compared with 1.4 per 100,000 in the capital cities.

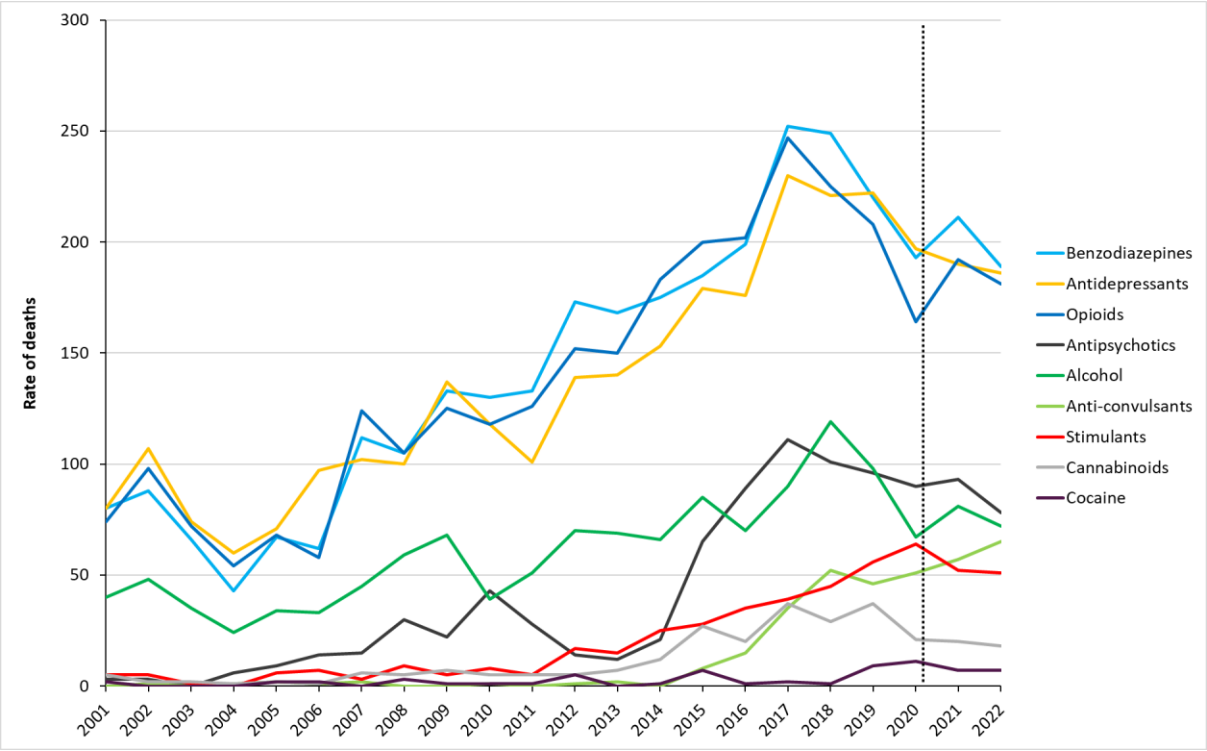
Figure 5. Drug-induced suicides by regionality, 2002-2022, rate per 100,000 population



Note: Data to the right of the dotted line (2021 and 2022 data) are preliminary, and likely to rise.

The trends in the number of drug-induced suicides (Figure 6) are similar to those seen for all drug-induced deaths. However, there is a clear demarcation in these data that was less apparent in the data for all drug-induced deaths. For drug-induced suicides benzodiazepines, anti-depressants and opioids were far more commonly involved in drug-induced suicides than other drug types. Anti-psychotics were the next most frequently reported drugs involved in drug-induced suicides, rising sharply since 2014. The remaining drug types, including alcohol, were less likely to be involved in drug-induced suicides.

Figure 6. Number of drug-induced suicides by drug type, 2002-2022



Note: Data to the right of the dotted line (2021 and 2022 data) are preliminary, and likely to rise.

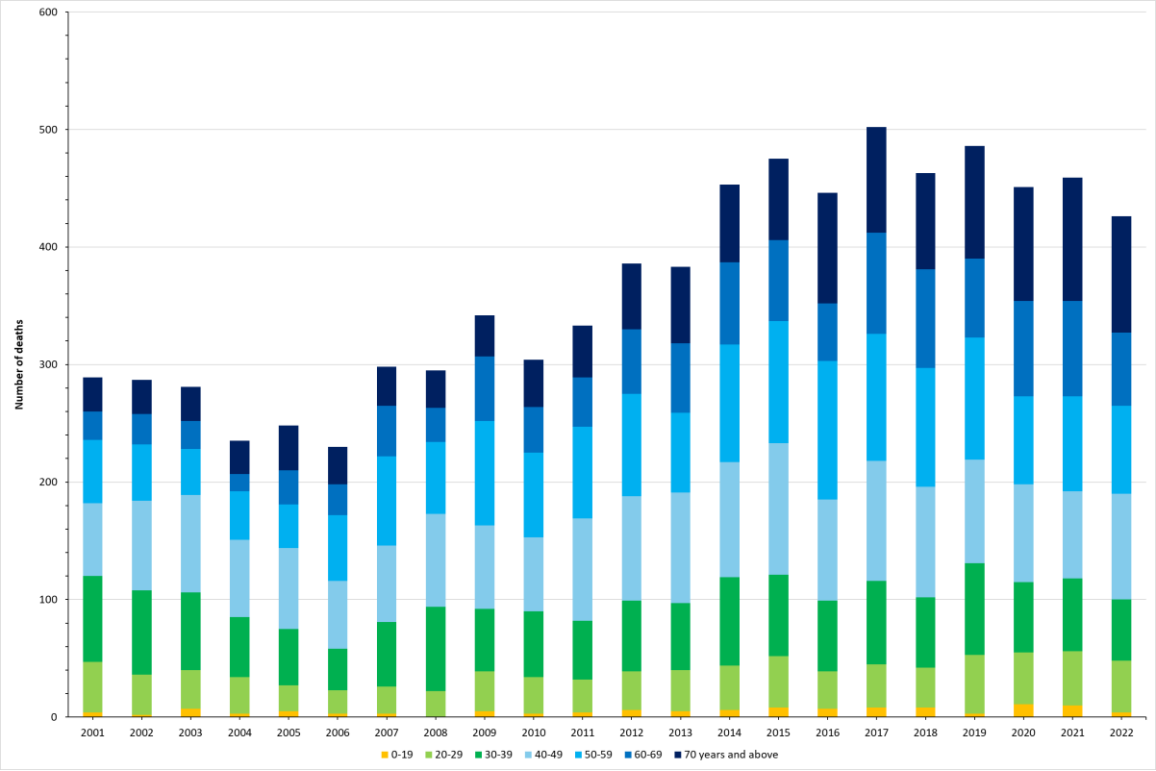
6.1. Demographic patterns in drug-induced suicides

There are distinct age-related patterns in the number of drug-induced suicides in Australia, as shown in Figure 7. In 2022, people aged 70 and above accounted for the highest proportion of drug-induced suicides, with one in five such deaths (23.2% or 99). Drug-induced suicides among this cohort have risen significantly over time from 29 in 2002 to 99 in 2022, with an average annual increase of 15%. Drug-induced suicides among people aged 60-69 have increased at a similar pace, from 26 in 2002 to 62 in 2023. Together, these two groups accounted for almost two in five (37.8%) of all drug-induced suicides in 2022.

Increases in drug-induced suicides are also seen among people aged 50-59 (from 56 in 2006 to 754 in 2022) and 40-49 (from 58 in 2006 to 90 in 2022).

People below the age of 30 accounted for 11.3% of drug-induced suicides recorded in 2022.

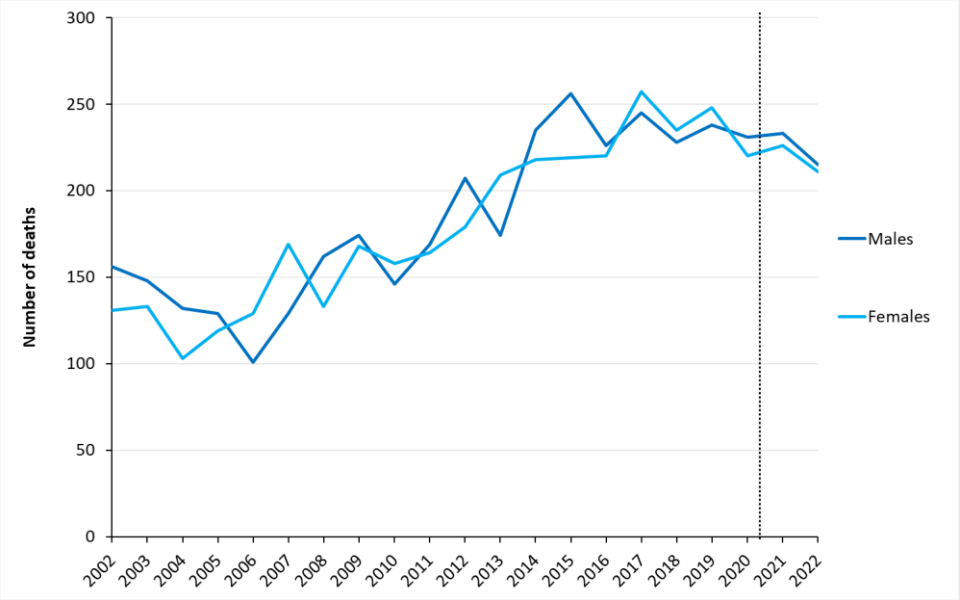
Figure 7. Number of drug-induced suicides by age group, 2002-2022



Note: Data to the right of the dotted line (2021 and 2022 data) are preliminary, and likely to rise.

Unlike unintentional drug-induced deaths, which are seen among males far more commonly than females, trends in drug-induced suicides are very similar for males and females. Figure 8 shows that the number of such deaths increased at about the same pace for both groups. Among males, the number of drug-induced suicides has more than doubled, from a low of 101 in 2006 to 215 in 2022. Similarly, the number of such deaths among females has increased from 103 in 2004 to 211 in 2022.

Figure 8. Number of drug-induced suicides by sex, 2002-2022



Note: Data to the right of the dotted line (2021 and 2022 data) are preliminary, and likely to rise.

As shown in Table 3, during the period 2018-2022 the rate of drug-induced suicide was higher among people born in Australia than those born in any of the other regions. People born in Asia reported the lowest rate of drug-induced suicide in each of the five-year periods.

Table 3. Drug-induced suicides by region of birth, 2003-2007 to 2018-2022, rate per 100,000 population

	2003-2007	2008-2012	2013-2017	2018-2022
Australia	1.3	1.6	2.1	2.0
Oceania and Antarctica (excl. Australia)	1.2	1.3	1.8	1.3
Europe	1.4	1.5	1.5	1.8
Africa and the Middle East	np	0.8	1.2	0.9
Asia	0.4	0.7	0.6	0.4
Americas	np	np	1.4	1.2

Note: np (not available for publication) means that a value could not be calculated due to the low number of deaths. Data are aggregated over five-year periods.

Over the coming chapters, the report focuses on trends in, and characteristics of, unintentional drug-induced deaths.

7. *Unintentional drug-induced deaths 2002-2022*

This chapter presents data on trends in **unintentional drug-induced deaths**, analysed by factors of interest such as region, drug type and various demographics characteristics. 'Unintentional drug-induced death' is defined as drug-induced deaths determined to be unintentional by legal rulings, and excludes suicide, homicide or deaths with undetermined intent.

Unintentional drug-induced deaths can occur in a variety of circumstances. The below case study presents circumstances of an unintentional drug-induced death in the context of a public event where multiple legal and illicit drugs were consumed.

Case study: Nicholas

Nicholas* was 22 years old when attending a four-day camping festival with friends. While not known to use illegal substances regularly, Nicholas was known to have previously consumed cocaine and 'pills'.

On the first day of the festival, temperatures were at least 40 degrees Celsius and Nicholas and his friends were drinking alcohol throughout the day. Nicholas was observed to consume a small rock thought to be MDMA.

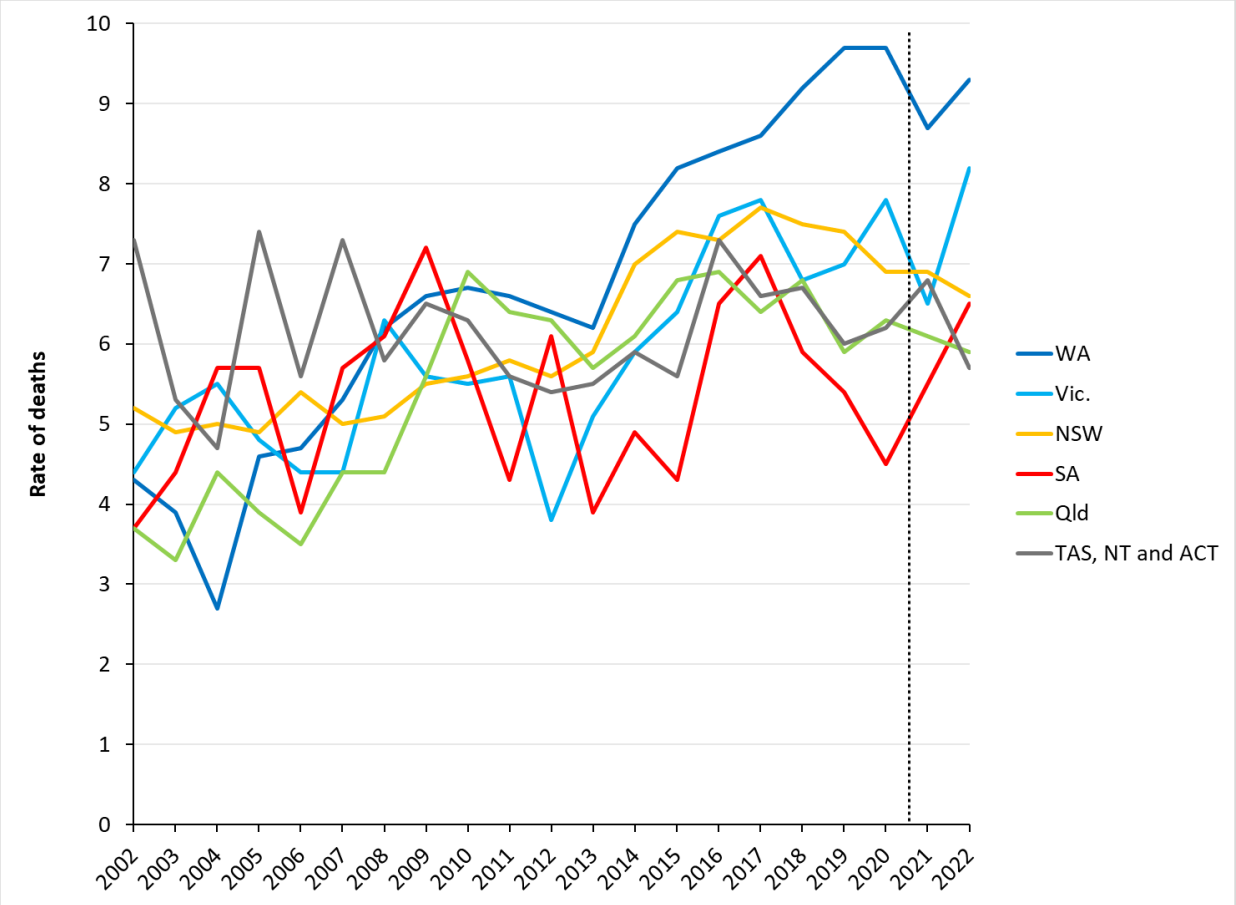
Around 6pm on the same day Nicholas was found unconscious by an unknown person who alerted festival staff. He was transported to on-site medical centre by festival staff. His body temperature was recorded as 43.4 degrees Celsius. He was combative towards the people trying to treat him, which was out of character. The treating doctor determined that Nicholas was to be transported by ambulance to hospital. En route, Nicholas went into cardiac arrest.

Tests taken on admission to hospital and postmortem detected the presences of alcohol, benzodiazepines, ketamine (administered during resuscitation efforts), 3,4-Methylenedioxymethylamphetamine (MDMA) and cannabinoids in his blood. The alcohol, cannabinoids and benzodiazepine levels were all low and likely had minimal or no role in Nicholas' death. The level of MDMA fell within the reported lethal range. Nicholas was found to have died following the consumption of an unknown dose of MDMA.

*not his real name

As shown in Figure 9, notable increases in the rates of unintentional drug-induced deaths can be seen in Western Australia, Victoria and South Australia. Western Australia has experienced a significant increase in the rate of unintentional drug-induced deaths since 2004, from 2.7 deaths per 100,000 population to 9.3 per 100,000 population in 2022. It has had the highest rate of unintentional drug-induced deaths in Australia since 2011. The greatest increase in recent years, though, has been observed in Victoria, where rates of unintentional drug-induced deaths increased from 3.8 per 100,000 in 2012 to 8.2 per 100,000 in 2022. These data are also provided as numbers of unintentional drug-induced deaths, rather than rates, in Table 4.

Figure 9. Unintentional drug-induced deaths by state, 2002-2022, rate per 100,000 population



Note: Data to the right of the dotted line (2021 and 2022 data) are preliminary, and likely to rise. Numbers of deaths cannot be reliably converted to rates per 100,000 in Tasmania, Northern Territory, and the Australian Capital Territory due to low numbers; they are therefore presented as an aggregate.

Table 4. Number of unintentional drug-induced deaths by state or territory, 2002-2022

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
NSW	343	328	337	332	370	349	357	397	404	426	412	448	533	568	574	605	592	594	561	568	557
VIC	216	255	276	243	226	231	335	306	303	315	217	299	352	379	467	487	433	455	514	427	544
QLD	134	123	166	153	140	179	184	243	302	286	287	261	286	318	329	306	337	295	324	313	321
WA	82	75	53	91	96	111	135	150	153	157	155	152	190	207	215	221	240	262	266	246	262
SA	55	68	88	88	63	94	98	115	95	74	104	65	84	77	112	124	104	98	84	102	117
ACT	17	22	15	24	11	22	22	18	20	16	12	23	21	16	28	27	28	22	30	37	34
TAS	35	20	21	36	30	32	28	40	28	36	30	27	38	31	47	36	34	34	30	26	29
NT	20	10	12	16	16	23	12	12	20	9	20	12	11	18	12	16	18	19	17	21	13

Note: 2021 and 2022 data are preliminary, and likely to rise.

When considering unintentional drug-induced deaths in 2022 by the usual residence of the deceased, the rate of deaths ranged from 5.9 deaths per 100,000 people in outside Greater Adelaide to 9.1 deaths per 100,000 in Greater Perth (Table 5). In NSW, Victoria, Queensland, and South Australia, the rate of unintentional drug-induced deaths was higher outside the capital city. For Australia overall, there were 6.9 unintentional drug-induced deaths per 100,000 people both outside of capital city areas and within capital cities.

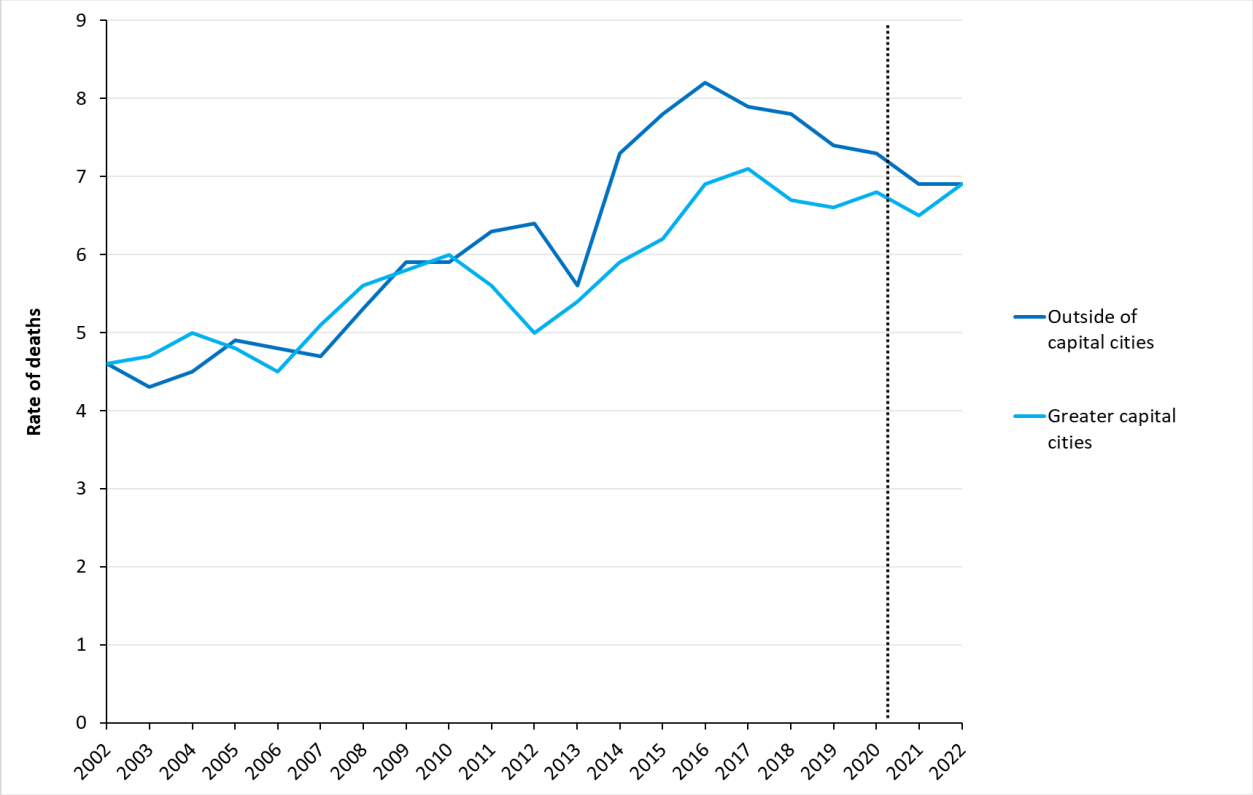
Table 5. Unintentional drug-induced deaths by usual residence in 2022

Region of usual residence	Number	Rate (per 100,000)
New South Wales		
Greater Sydney	317	5.9
Rest of New South Wales	236	7.7
Victoria		
Greater Melbourne	401	7.8
Rest of Victoria	127	8
Queensland		
Greater Brisbane	152	5.8
Rest of Queensland	162	5.7
Western Australia		
Greater Perth	204	9.1
Rest of Western Australia	29	8.2
South Australia		
Greater Adelaide	95	6.9
Rest of South Australia	22	4.8
Tasmania, Northern Territory, Australian Capital Territory (combined)		
Greater Hobart, Darwin, Australian Capital Territory	54	6.2
Rest of Tasmania and Northern Territory	22	4.4
Australia		
Greater capital cities total	1,223	6.9
Rest of states total	623	6.9

Note: Individual rates are not available for Tasmania, Northern Territory, and the Australian Capital Territory. Rate are presented as age-standardised for the region.

As shown in Figure 10, from 2002 to 2010, the rates of unintentional drug-induced deaths were very similar between the greater capital cities and the remainder of the states and territories. Since 2011, when the rates began to diverge, the rate of unintentional drug-induced deaths in rural and regional Australia has increased from 6.3 to 8.2 deaths per 100,000 people, before gradually declining. In 2022, there were 6.9 unintentional drug-induced deaths per 100,000 people in both rural and regional areas. Greater detail on these geographic trends is provided in Chapter 8.

Figure 10. Unintentional drug-induced deaths by regionality, 2002-2022, rate per 100,000 population



Note: Data to the right of the dotted line (2021 and 2022 data) are preliminary, and likely to rise.

Providing greater detail for the non-capital city areas, Table 6 shows the number and rate of unintentional drug-induced deaths for inner regional areas, outer regional areas and remote or very remote areas in Australia. Inner regional areas reported the highest rate of unintentional drug-induced deaths over the five-year period 2018-2022 (714 deaths per 100,000 people), while the lowest rate was seen in outer regional and remote or very remote areas (6.6 per 100,000 people).

Table 6. Unintentional drug-induced deaths by remoteness area, 2012-2022, number and rate per 100,000 population

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2018-2022 (number)	2018-2022 (rate)
Major cites	847	895	1,022	1,098	1,209	1,289	1,228	1,246	1,312	1,247	1,338	6,377	6.8
Inner regional	230	226	320	305	347	341	359	310	314	293	329	1,590	7.1
Outer regional	114	117	117	154	182	149	127	162	137	141	149	713	6.6
Remote or very remote	28	27	35	43	27	22	35	29	35	38	31	163	6.6

Note: 2021 and 2022 data are preliminary, and likely to rise.

As shown in Table 7, the rate of unintentional drug-induced deaths was highest during each of the five-year periods among people born in Australia. People born in Asia had the lowest rate of unintentional drug-induced deaths in each period.

The rate of unintentional drug-induced deaths among people born in Australia has increased considerably over time compared with other regions, from 5.1 deaths per 100,000 population in 2003-2007 to 8.8 in 2018-2022.

Table 7. Unintentional drug-induced deaths by region of birth, 2003-2007 to 2018-2022, rate per 100,000 population

	2003-2007	2008-2012	2013-2017	2018-2022
Australia	5.1	6.6	8.2	8.8
Oceania and Antarctica (excl. Australia)	4.1	5.1	5.2	5.5
Europe	4.5	4.8	5.6	5.9
Africa and the Middle East	2.9	2.6	3.1	3.8
Asia	1.7	1.5	1.4	1.4
Americas	4.6	5	4.9	4

Table 8 shows the rate of unintentional drug-induced deaths associated with different drug types for people born in different world regions. There are some notable differences across region of birth. For example, while opioids as a broad drug class have the highest death rate for all regions of birth, pharmaceutical opioids are associated with the highest rate of death for all regions of birth except Asia and Europe, for which heroin is the opioid with the highest death rate.

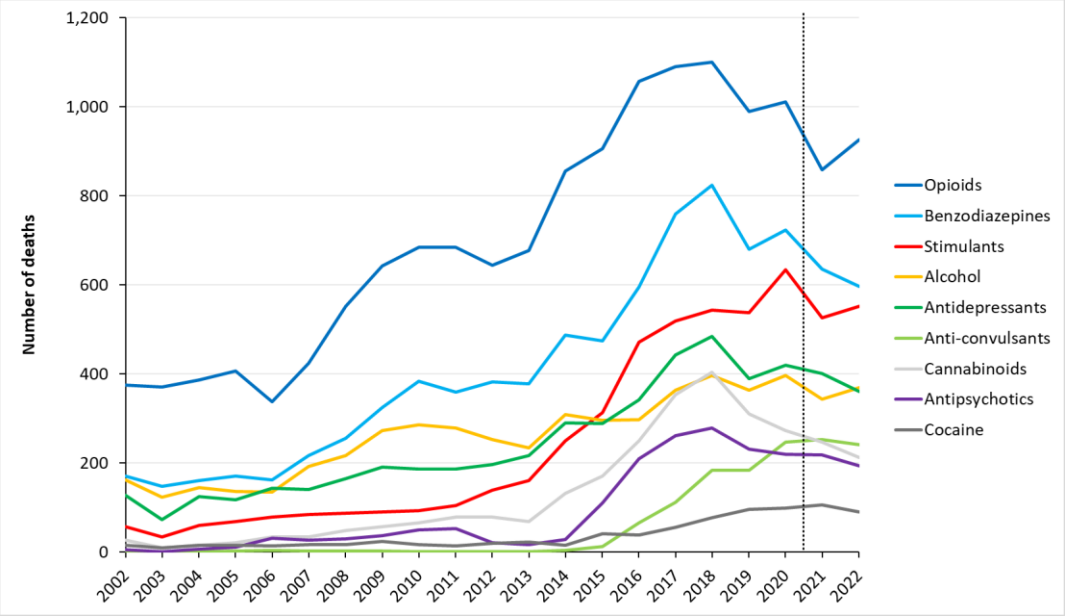
Table 8. Unintentional drug-induced deaths by drug type and region of birth, 2018-2022, rate per 100,000 population

	Australia	Oceania and Antarctica	Europe	Africa and the Middle East	Asia	Americas
All Opioids	5.2	2.5	3.1	1.8	0.6	1.8
Heroin	2.3	1.2	1.6	0.7	0.4	np
Oxycodone, morphine, codeine	1.8	0.9	1.6	0.7	0.1	np
Methadone	1.2	0.6	0.5	np	0.1	np
Fentanyl, pethidine, tramadol	1	0.5	0.6	0.4	0.1	np
Pharmaceutical opioids	2.5	1.3	1.5	1	0.2	1
Cannabinoids	1.6	1	0.8	0.5	0.1	np
Benzodiazepines	3.7	1.8	2.3	1.2	0.4	1.3
Anti-depressants	2.2	0.9	1.4	0.7	0.2	np
Anti-psychotics	1.3	0.5	0.6	0.4	0.2	np
Stimulants	3	1.9	1.6	1	0.4	0.8
Alcohol	1.8	1.2	1.4	0.9	0.4	0.9

Note: np (not available for publication) means that a value could not be calculated due to the low number of deaths. Data are aggregated over the five-year period. 'Oceania and Antarctica' data exclude Australia. 'Americas' includes North and South America, Central America and the Caribbean.

A full analysis of deaths by drug type is provided in Chapter 7. However in summary, it can be said that the trends in the number of unintentional drug-induced deaths (Figure 11) mirror those among all drug-induced deaths (seen in Figure 2). Opioids, benzodiazepines, and stimulants have the highest overall involvement in unintentional drug-induced deaths, and all have increased substantially over the past 15 years. There has also been a substantial increase in the number of unintentional drug-induced deaths due to anti-depressants, although the rise has been steadier. While alcohol related deaths have trended upwards since 2009, this appears to be stabilising.

Figure 11. Number of unintentional drug-induced deaths by drug type, 2002-2022



Note: Data to the right of the dotted line (2021 and 2022 data) are preliminary, and likely to rise.

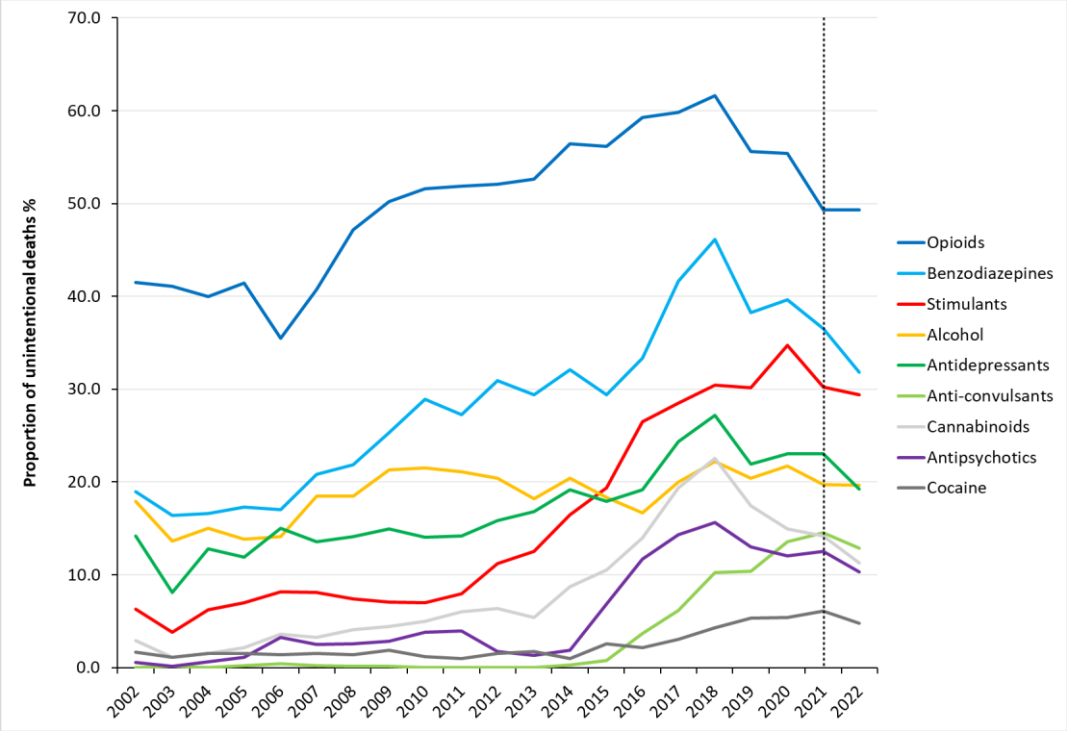
Figure 12 presents the number of unintentional drug-induced deaths involving each drug type as a proportion of the total number of unintentional drug-induced deaths each year.

Opioids contributed to the highest proportion of unintentional drug-induced deaths in 2022 (49.3%). Their relative contribution to these deaths has fluctuated over time, from 41.5% of unintentional drug-induced deaths in 2002 to a high of 61.6% in 2018, before decreasing to 49.3% in 2022. Benzodiazepines, on the other hand, were involved in approximately one-third (31.8%) of unintentional drug-induced deaths in 2022 – up from 18.9% of all deaths in 2002.

The largest increases over time in the proportion of unintentional drug-induced deaths were seen for stimulants, anti-convulsants, anti-psychotics. In 2022, stimulants were involved in more than one quarter (29.4%) of such deaths; in 2002, this was only 6.3%.

Anti-convulsants were involved in 12.8% of such deaths in 2022 compared with none in 2002. Anti-psychotics were found to be involved in 0.6% of unintentional drug-induced deaths in 2022, compared to 0.6% in 2002. While the proportion of unintentional drug-induced deaths that involved these drug types remains low, and are often involved in poly-substance deaths, the increase over time is substantial.

Figure 12. Unintentional drug-induced deaths by drug type, 2002-2022, proportion of unintentional deaths (%)



Note: Data to the right of the dotted line (2021 and 2022 data) are preliminary, and likely to rise. The percentages do not sum to 100% as more than one drug type may have been detected.

7.1. Demographic patterns in unintentional drug-induced deaths

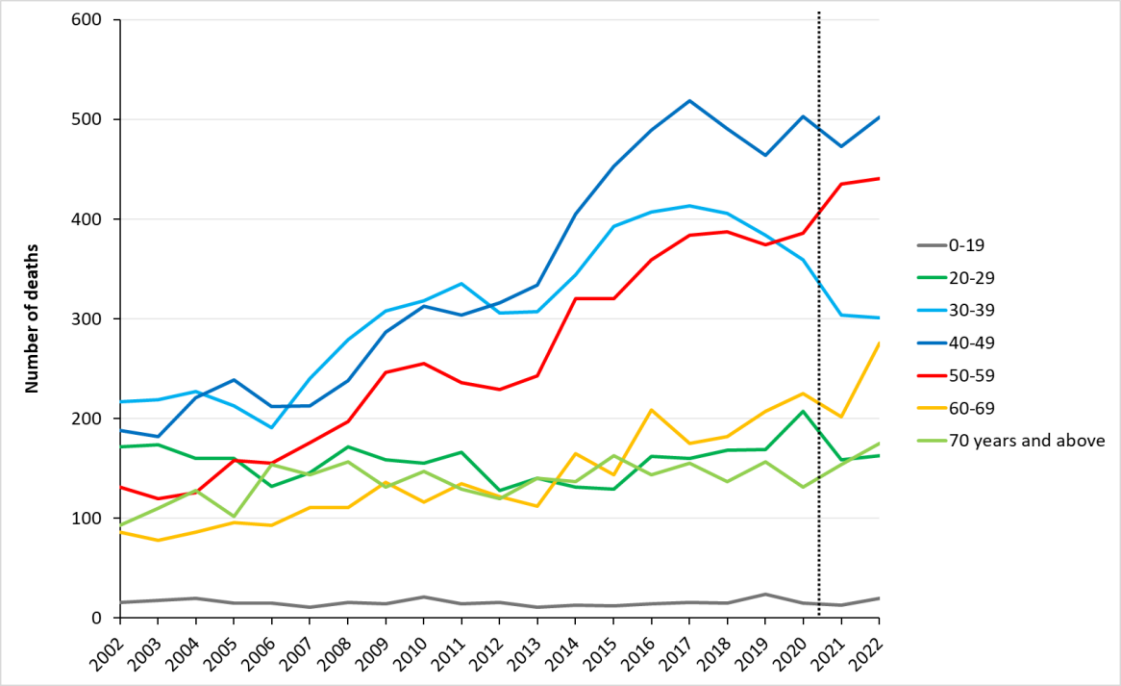
There are distinct age-related patterns of harms in unintentional drug-induced deaths, as shown in Figure 13.

Since 2002, deaths in the 40-49, 50-59 and 60-69 age groups have all increased substantially, with the greatest increase observed in those aged 50-59 (from 131 in 2002 to 441 in 2022, an increase of 236.6%). Deaths among those aged 60-69 have more than tripled, from 86 in 2002 to 276 in 2022 – an increase of 220.9%. The highest number of deaths is seen in the 40-49 age group, with 502 unintentional drug-induced deaths in 2022, accounting for 26.7% of all unintentional drug-induced deaths (an increase of 167.0% since 2002).

Deaths among people aged 19 and below have increased from 16 deaths in 2002 to 20 deaths in 2022 – an increase of 25%.

In contrast, deaths in the 20-29 age group have decreased, from 172 in 2002 to 163 in 2021, a decrease of 5.2%. There were also fewer deaths among those aged 30 and under, accounting for 9.7% of all unintentional deaths, while one in four deaths (24.0%) was among those aged 60 and above.

Figure 13. Number of unintentional drug-induced deaths by age group, 2002-2022

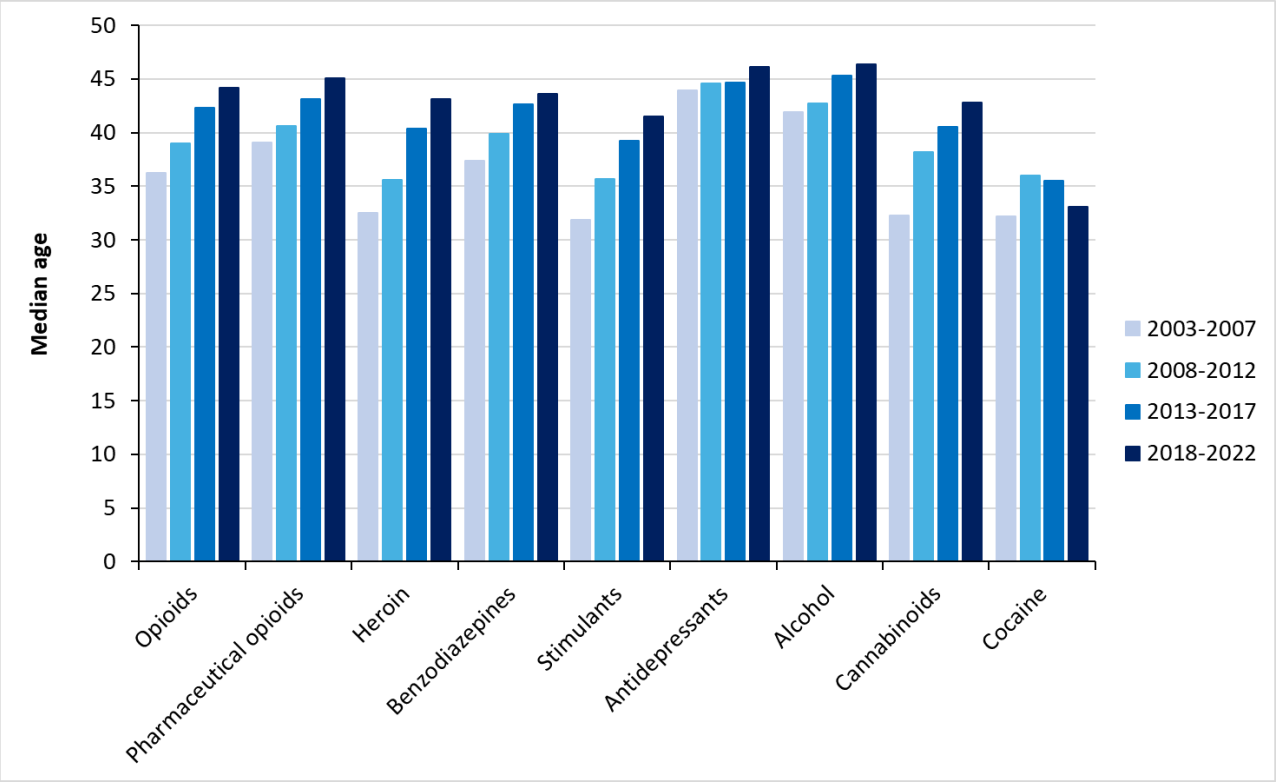


Note: Data to the right of the dotted line (2021 and 2022 data) are preliminary, and likely to rise.

Figure 14 shows the median age of unintentional drug-induced deaths for different types of drugs over four periods since 2001. For each drug type except cocaine, there is a clear pattern of increasing median age at death over the two decades. The largest increases in median age have occurred for drug-induced deaths involving cannabinoids (with the median age increasing from 32.3 years in 2002-2006 to 42.8 years in 2018-2022) and heroin (increasing from a median age of 32.5 years to 43.1 years).

The highest median ages at death in 2018-2022 were seen for alcohol (46.4 years of age) and anti-depressants (46.1 years), while the lowest was recorded for cocaine (33.1 years).

Figure 14. Unintentional drug-induced deaths, by drug type and median age, 2003-2022

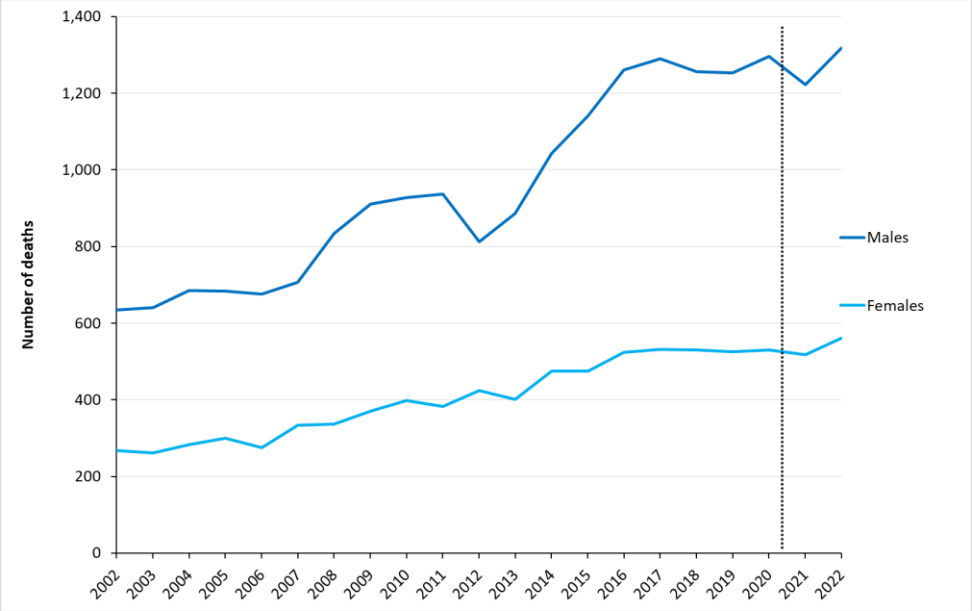


Note: Data are aggregated over the five-year periods.

Unintentional drug-induced deaths remain more common for males than females, though long-term trends are increasing for both sexes (Figure 15).[35] Males typically account for around two-thirds of unintentional drug-induced deaths but the number of deaths for men has increased more rapidly than it has for women over the past ten years. Since 2013, the number of unintentional deaths among males increased by 48.6%, from 886 in 2012 to 1,317 in 2022. During the same period, the number of deaths among females increased by 39.9%, from 401 to 561.

In 2022, males accounted for 72.54% of unintentional drug-induced deaths.

Figure 15. Number of unintentional drug-induced deaths by sex, 2002-2022



Note: Data to the right of the dotted line (2021 and 2022 data) are preliminary, and likely to rise.

The rate of unintentional drug-induced death has been higher for Indigenous Australians than non-Indigenous Australians over the entire period for which data are presented in this report (Figure 16).[36] Aboriginal and Torres Strait Islander people represented 3.8% of the total Australian population, Rates of death for non-Indigenous Australians have gradually increased from 2002 to

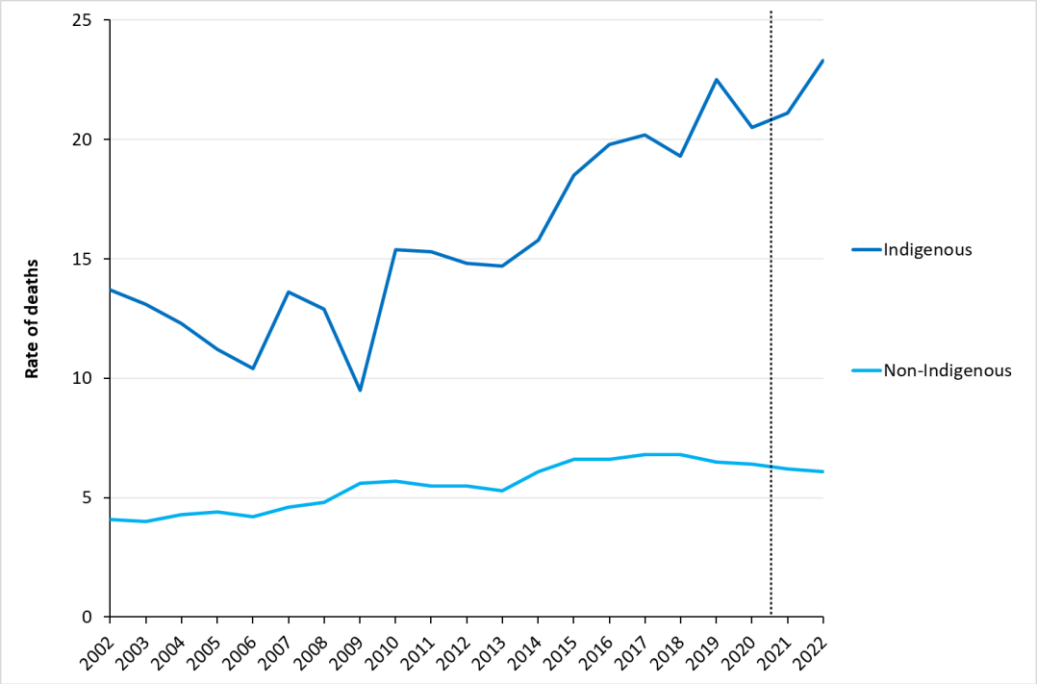
[35] The ABS data publication only reports 'male' and 'female'. Sex not stated may be included in totals. For more information on reporting sex and gender in causes of death statistics, please refer to the classifications section of the Causes of Death, Australia methodology, 2022.

[36] Data on Indigenous status are only reported for NSW, Qld, WA, SA and the NT as these are the only states with an appropriate level of Indigenous identification and sufficient number of Indigenous deaths for the ABS to include the data in their causes of death analysis.

2022 (from 4.1 to 6.1 deaths per 100,000 population). For Indigenous Australians, the rate of death showed a downward trend until 2009, but increased between 2009 and 2022, from 9.5 to 23.3 deaths per 100,000 population, an increase of 145.3%.

These rate calculations may, however, be more variable due to smaller overall numbers of deaths among Indigenous Australians.[37]

Figure 16. Unintentional drug-induced deaths by Indigenous status, 2002-2022, rate per 100,000 population (NSW, Qld, SA, WA, NT)



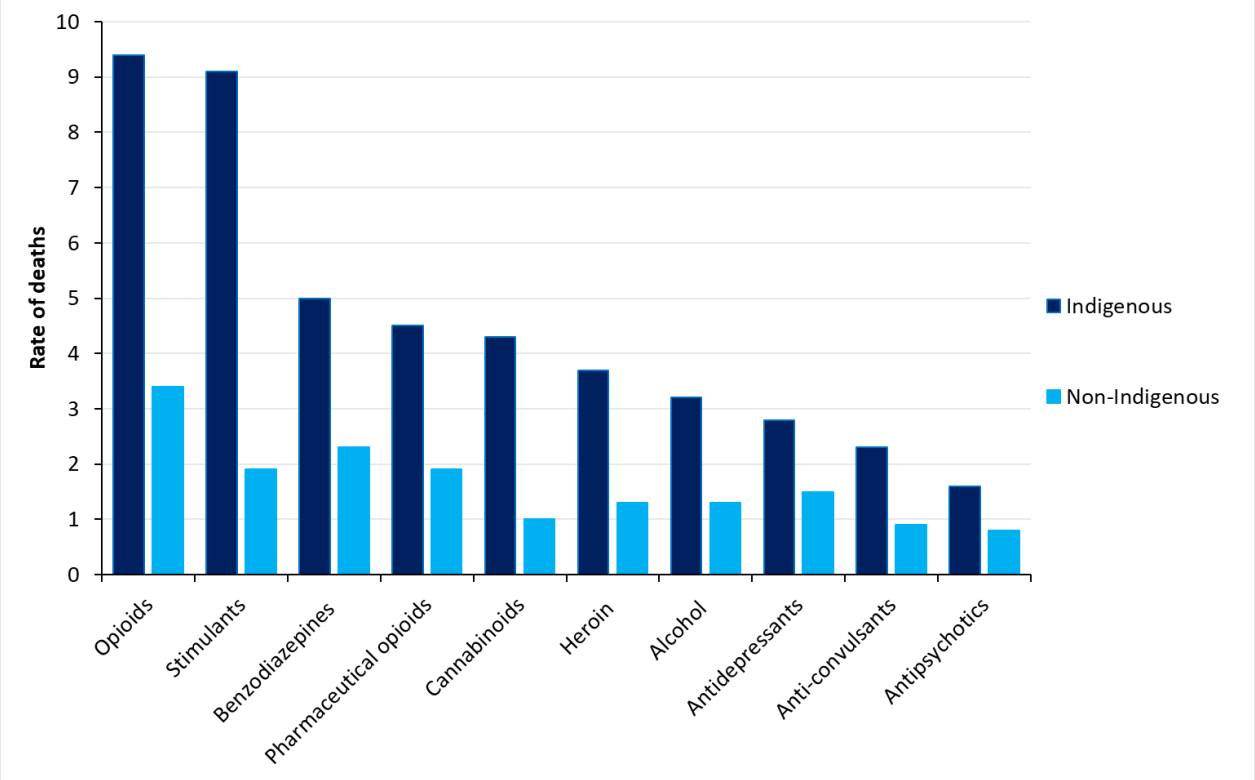
Note: Data to the right of the dotted line (2021 and 2022 data) are preliminary, and likely to rise.

[37] In 2022, information from the cause of death process including the Medical Certificate of Cause of Death (MCCD) and coronial information was made available to the ABS by the NSW Registry of Births, Deaths and Marriages as a secondary source for determining the Indigenous status of the deceased. This brings the derivation in line with all other states and territories with the exception of Victoria. Use of this additional source has led to improved recording of Indigenous status. This change has introduced a break in time series in Aboriginal and Torres Strait Islander death statistics in NSW and Australia. Therefore caution should be used when making comparisons with previous years. For more information on this change and the impacts refer to Technical Note: The impact of using two sources for deriving the Indigenous status of deaths in NSW in 2022.

In the five-year period to 2022, the rate of unintentional drug-induced death was higher for Indigenous people in the five jurisdictions in every drug type category (Figure 17). The difference was most pronounced for stimulants, with a rate of 9.1 deaths per 100,000 Indigenous people compared with 1.9 per 100,000 non-Indigenous people. The difference between cohorts was also large for opioids, with a rate of 9.4 per 100,000 Indigenous people compared with 3.4 per 100,000 non-Indigenous people.

These data are presented aggregated across the five-year period, as annual counts are too small to enable reliable calculations.

Figure 17. Unintentional drug-induced deaths by drug type and Indigenous status, 2018-2022, rate per 100,000 population (NSW, Qld, SA, WA, NT)

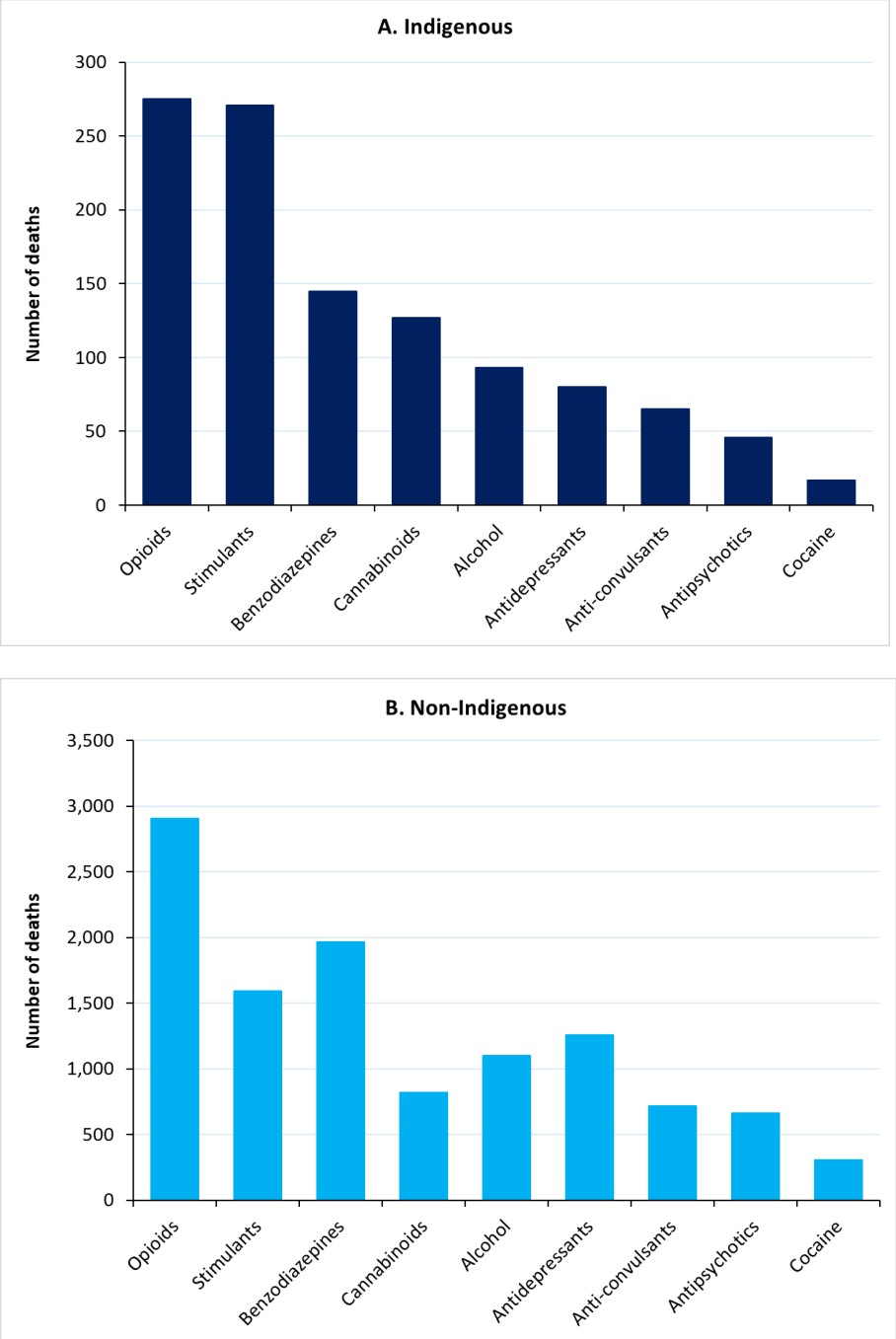


Note: Data are aggregated over the five-year period.

During the five years from 2018 to 2022, there were 599 unintentional drug-induced deaths among Indigenous people and 5,618 among non-Indigenous people in those states for which data are available (Figure 18). Opioids are the largest group of drugs identified in unintentional drug-induced deaths for both groups, contributing to almost half of these deaths (45.9%) among Indigenous people and half (51.8%) among non-Indigenous people during the five years. However, there are some notable differences between the two cohorts. For Indigenous people, the next most common drug involved in unintentional drug-induced deaths is stimulants is almost equal to opioids, contributing to 45.2% of deaths, followed by benzodiazepines (24.2%). The reverse is observed among non-Indigenous people: benzodiazepines are the next most common drug involved in unintentional drug-induced deaths during this period, contributing to one-third (35.0%) of all deaths, followed by stimulants (28.4%).

Compared with deaths involving non-Indigenous people, unintentional drug-induced deaths among Indigenous people were more likely to involve cannabinoids (21.2% among non-Indigenous people compared with 14.6% among Indigenous people), less likely to involve anti-depressants (13.4% compared with 22.4%), and slightly less likely to involve alcohol (15.5% compared with 19.6%).

Figure 18. Number of unintentional drug-induced deaths by drug type and Indigenous status, 2018-2022 (NSW, Qld, SA, WA, NT)

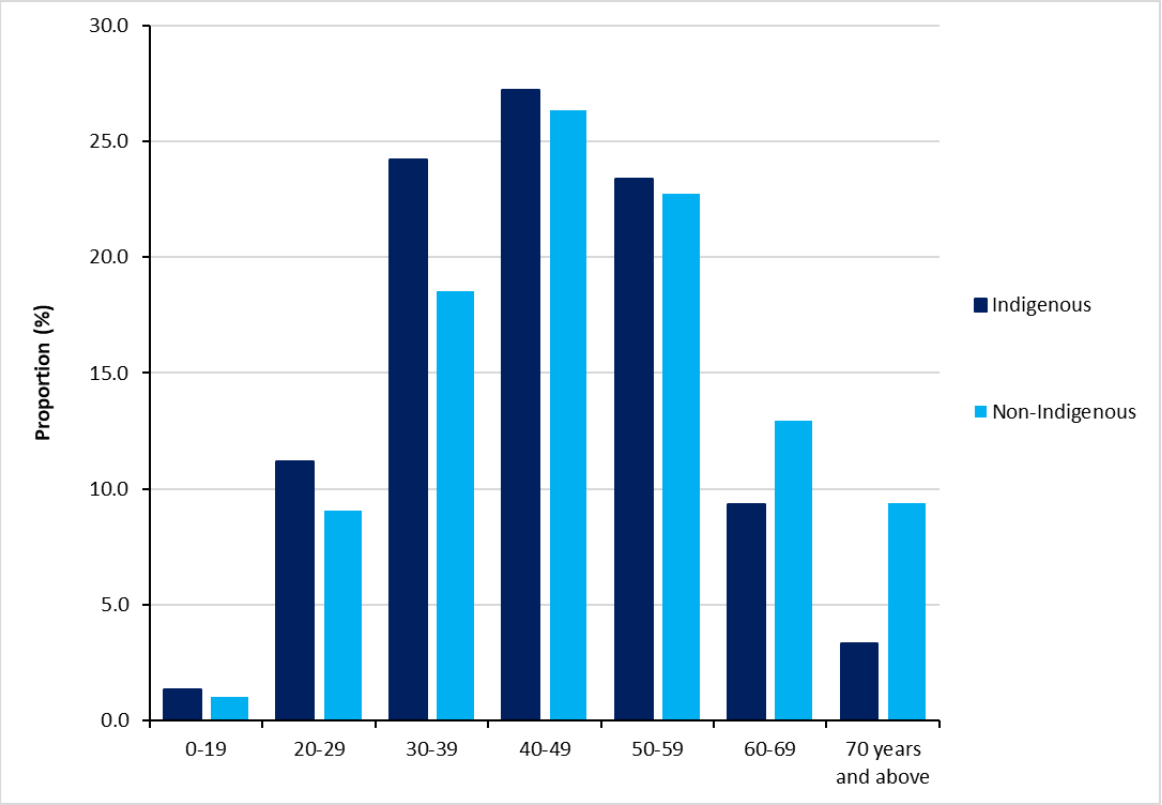


Note: Data are aggregated over the five-year period.

The age distribution of unintentional drug-induced deaths by Indigenous status shows that a higher proportion of deaths occurs in those aged less than 40 among Indigenous people compared with non-Indigenous people. For Indigenous people, 35.4% of deaths were seen among people aged 20 to 39, with 12.7% among people aged 60 and older. Among non-Indigenous people, 27.6% of deaths were among those aged 20 to 39, with 22.3% among those aged 60 and older (Figure 19).

The different age distributions of unintentional drug-induced deaths for the two cohorts likely reflect the younger age profile of the Indigenous Australian population as a whole.[38]

Figure 19. Age distribution (%) of unintentional drug-induced deaths by Indigenous status, 2018-2022 (NSW, Qld, SA, WA, NT)



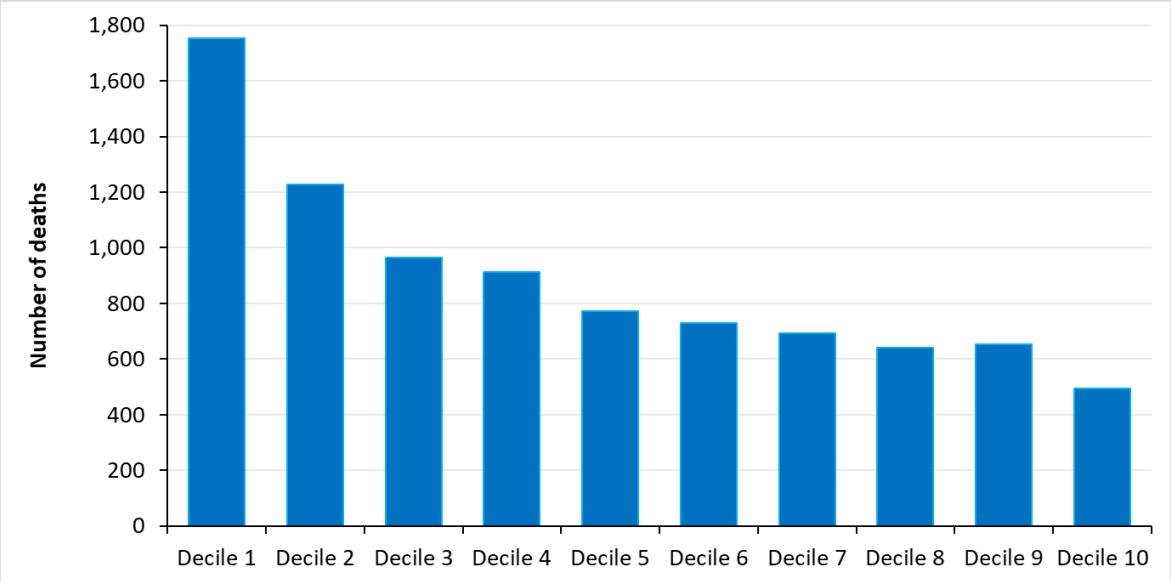
Note: Data are aggregated over the five-year period.

[38] As at June 2021 the median age of Aboriginal and Torres Strait Islander people was 24.0 years, compared with 37 years of all Australians. See ABS Census information, Snapshot of Australia.

While unintentional drug-induced deaths occur in all socio-economic areas of usual residence, there is a clear socio-economic gradient visible in Figure 20.

In the aggregated data from 2018 to 2022, 1,752 unintentional drug-induced deaths occurred in the most disadvantaged areas (Decile 1 of socioeconomic advantage), compared with 493 deaths in the most advantaged areas (Decile 10 of socioeconomic advantage). The most disadvantaged areas (Decile 1) accounted for almost one in five such deaths (19.4%), compared with one in 20 such deaths (5.5%) in the most advantaged areas (Decile 10).

Figure 20. Number of unintentional drug-induced deaths by socio-economic status of area of usual residence, 2018-2022



Note: Decile 1 is the most disadvantaged area and Decile 10 is the most advantaged. SEIFA IRSAD: Socio-Economic Indexes for Areas (SEIFA) using the Index of Relative Socio-Economic Advantage and Disadvantage (IRSAD). Data are aggregated over the five-year period.

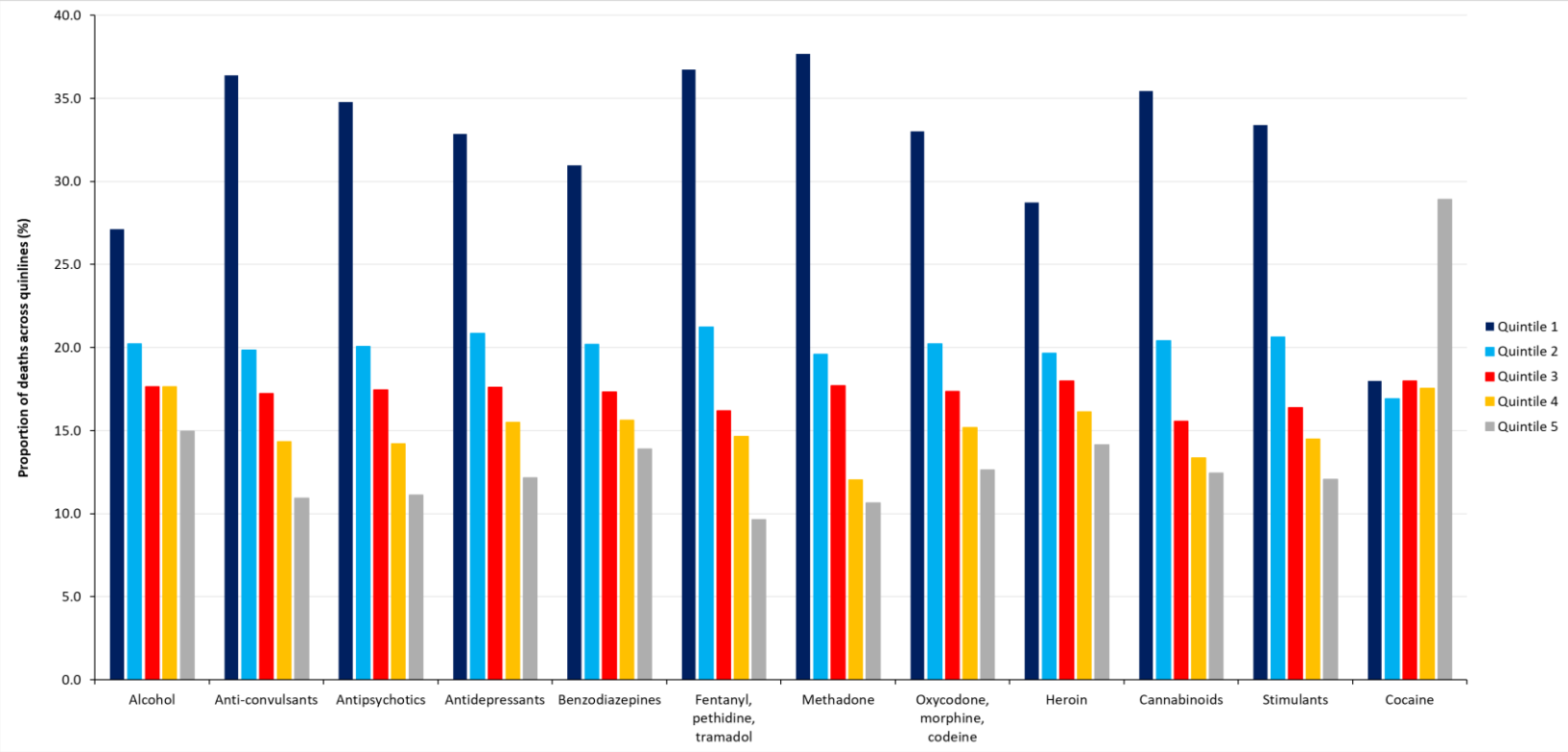
There are substantial differences across drug types in the relationship between drug-induced deaths and socio-economic status of areas of usual residence, as shown in Figure 21. Social economic data are presented in quintiles, dividing the total into five equal groups.[39] Quintile 1 represents the most disadvantaged areas in terms of socio-economic status, while Quintile 5 represents the most advantaged.

There is a clear relationship between drug-induced death and socio-economic status of the area of usual residence. For all drug types except cocaine, the highest proportion of deaths occurs in the most disadvantaged areas (Quintile 1). The greatest disparity in deaths across areas is seen for methadone, which has the highest proportion of people in the most disadvantaged areas (Quintile 1 – 37.7%) and the second lowest proportion in the most advantaged areas (Quintile 5 – 10.6%).

In contrast to the other drug types, for cocaine, as the socio-economic status of the area increases from disadvantaged to more advantaged, the proportion of drug-induced deaths in each quintile generally increases, with 18.0% of unintentional drug-induced deaths involving cocaine being observed in the most disadvantaged areas (Quintile 1), compared with one-quarter of deaths (28.9%) in the most advantaged areas (Quintile 5).

[39] This means that the lowest quintile (Quintile 1) aggregates data for SEIFA IRSAD Deciles 1 and 2, Quintile 2 aggregates data for SEIFA IRSAD Deciles 3 and 4, and so on.

Figure 21. Unintentional drug-induced deaths by drug type and socio-economic status of area, percentage distribution across quintiles, 2018-2022



Note: Quintile 1 is the most disadvantaged and Quintile 5 is the most advantaged. SEIFA IRSAD: Socio-Economic Indexes for Areas (SEIFA) using the Index of Relative Socio-Economic Advantage and Disadvantage (IRSAD). Data are aggregated over the five-year period.

7.2. *Poly-substance use in unintentional drug-induced deaths*

Poly-substance use is common and most drug-induced deaths are caused by a combination of drugs and are not simply the result of exposure to a single drug. The fatal overdose data used to produce this report identify the involvement of drugs that were determined to have contributed to a person's death, however, do not necessarily indicate the primary cause of death. For example, the below case study illustrates the way that multiple drug intoxication can contribute to unintentional death.

Case study: Christine

Christine* was 61 years old when she died. She had a history of chronic neck and back pain, diabetes, asthma, depression and colitis of the bowel. These conditions had necessitated ongoing prescription drug therapy. Prior to retirement, Christine was employed as a nurse. She was an engaged patient and had demonstrated capacity to monitor her own health and understand the responsible consumption of her medications.

To manage these conditions, Christine was prescribed Tapentadol, an opioid analgesic and Diazepam, a benzodiazepine. She was first prescribed pain medication in 2009 (8 years prior to her death).

Due to increasing pain, on the morning of her death Christine's doctor administered morphine and prescribed morphine dydrochloride (an orally administered morphine) to be taken if required throughout the day. The coronial investigation found her prescribing doctor was unaware Christine had already consumed an opioid that day. She returned home in the care of her husband and was put to bed. Christine's doctor and husband spoke throughout the day to monitor her condition. She did not wake, and around midnight her husband contacted emergency services as he was unable to detect her breathing. When paramedics arrived, Christine was in cardiac arrest and transferred and admitted to hospital.

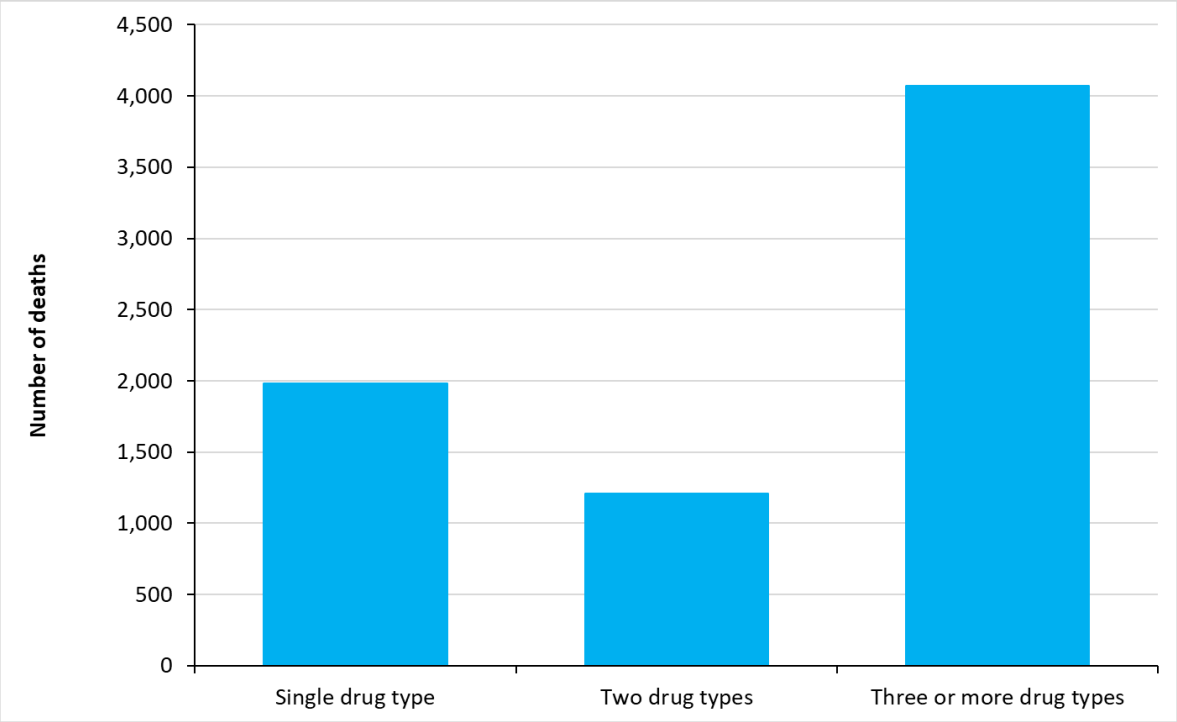
Blood tests taken on admission to hospital found morphine and tapendatol above expected levels in Christine's system. The tapendatol was found to be in potentially lethal range. Christine was found to have died from multiple drug (tapentadol, morphine, diazepam, citalopram) intoxication.

*not her real name

Figure 22 shows that deaths associated with multiple drug types have been far more common than those associated with a single type of drug. Over the five years to 2022, more than two-thirds of all unintentional drug-induced deaths involved two or more drug types (72.7%), with less than one-third (27.5%) involving one drug type only.

While these data show deaths by the number of drug types detected, they are not able to identify the specific drugs within each type. It is therefore possible that a death due to a single drug type actually involves multiple drugs within that type. For example, a death involving opioids as a single drug type may actually involve oxycodone, fentanyl and heroin.

Figure 22. Number of unintentional drug-induced deaths, single drug type and multiple drug types detected, 2018-2022

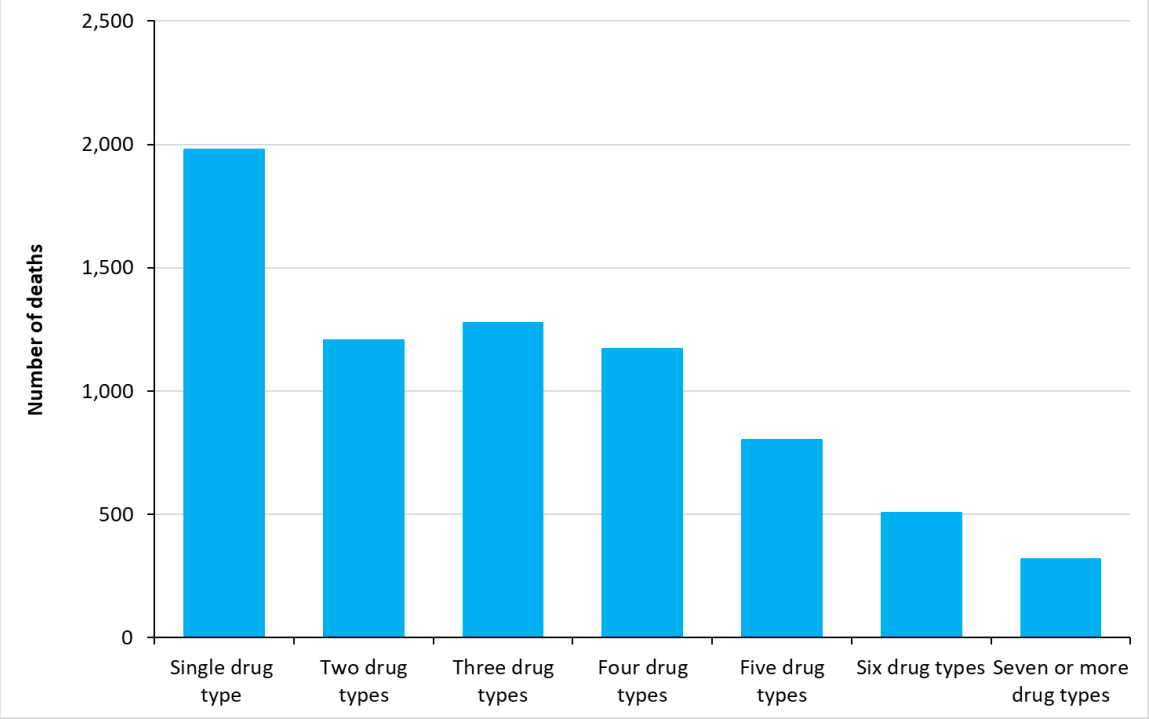


Note: Data are aggregated over the five-year period.

Figure 23 provides more detail about the number of drug types involved in poly-substance drug-induced deaths over the five years to 2022, showing the number of deaths involving four, five, six and seven or more different drug types. While more deaths were associated with a single drug type than any other specific number of drug types, there are nonetheless many deaths that involve multiple types of substances. For example, 319 unintentional drug-induced deaths involved seven or more different types of drugs and 508 involved six types of drugs – together, these accounted for one in ten unintentional drug-induced deaths (11.4%).

Over the five-year period, deaths involving four or more substance types accounted for almost two in five unintentional drug-induced deaths (38.5%).

Figure 23. Number of unintentional drug-induced deaths, by specific number of drug types detected, 2018-2022



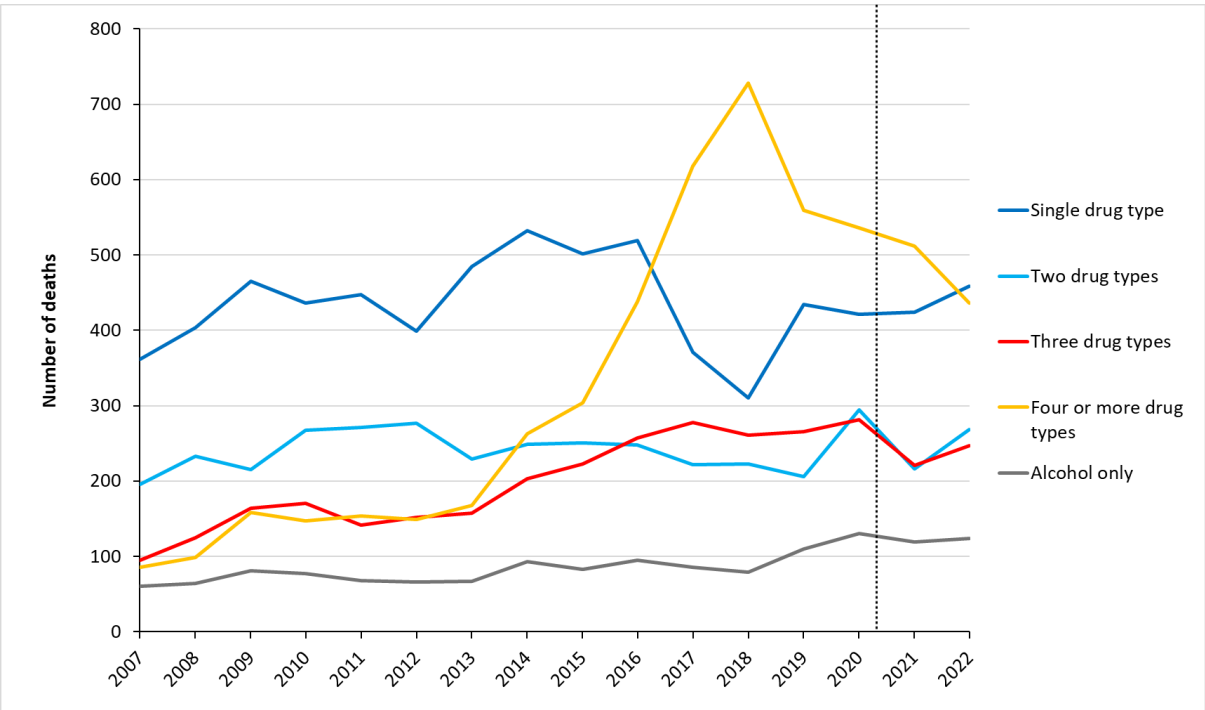
Note: Data are aggregated over the five-year period.

From 2013 to 2018 there was a sharp increase in the number of unintentional drug-induced deaths that involve four or more types of substances. While the number of these deaths decreased from 728 in 2018 to 436 in 2022, it remains far higher than it was in 2013 (Figure 24).

Unintentional drug-induced deaths involving a single drug type decreased substantially from 2016 to 2018, but preliminary data show that these deaths are once again increasing, with 549 deaths recorded in 2022. Deaths involving three drug types have slowly increased from 95 in 2007 to 247 in 2022 and are now at a similar level as those involving two drug types. The number of deaths involving two drug types has remained relatively stable over time, with 268 deaths recorded in 2022. For the first time in the reported period, the number of deaths involving two drug times surpassed the number of deaths involving four or mor drug types. Unintentional drug-induced deaths involving alcohol on its own have remained fairly stable.

From 2017 to 2020, there were more unintentional deaths involving four or more substance types than single drug types. Preliminary data from 2022 suggest a reversal in this trend, with a higher number of deaths involving a single drug type for the year.

Figure 24. Number of unintentional drug-induced deaths, by number of drug types detected, 2007-2022

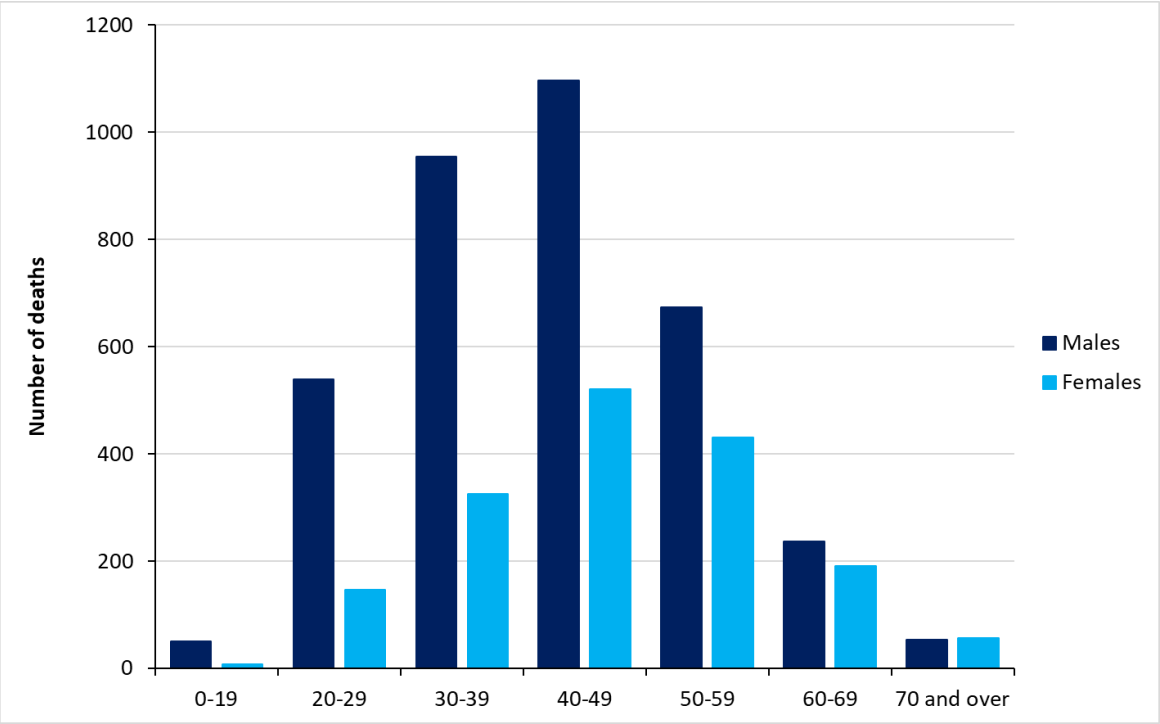


Note: Data to the right of the dotted line (2021 and 2022 data) are preliminary, and likely to rise. Data are only available from 2007.

There are clear sex differences in the number of unintentional drug-induced deaths involving multiple drug types, although the overall age distribution for the two cohorts is broadly similar. Figure 25 shows that male poly-substance deaths are more likely to be recorded among younger cohorts aged 20 to 39 (41.5% compared with 28.1% for females), while the older cohorts aged 50 and above account for a higher proportion of female poly-substance deaths (40.4% compared with 26.7% for males).

Unintentional poly-substance deaths are most commonly seen in middle age. For both males and females, the most common age group in poly-substance unintentional deaths is the 40-49 group, comprising 30.4% of deaths for males and 31% for females. While the next most common age group for males is 30-39 year olds (accounting for 26.5% of poly-substance deaths), for females the next most common cohort is those aged 50-59 years, who account for one-quarter (25.7%) of such deaths.

Figure 25. Number of unintentional drug-induced deaths with multiple drug types detected, by age and sex, 2018-2022



Note: Data are aggregated over the five-year period.

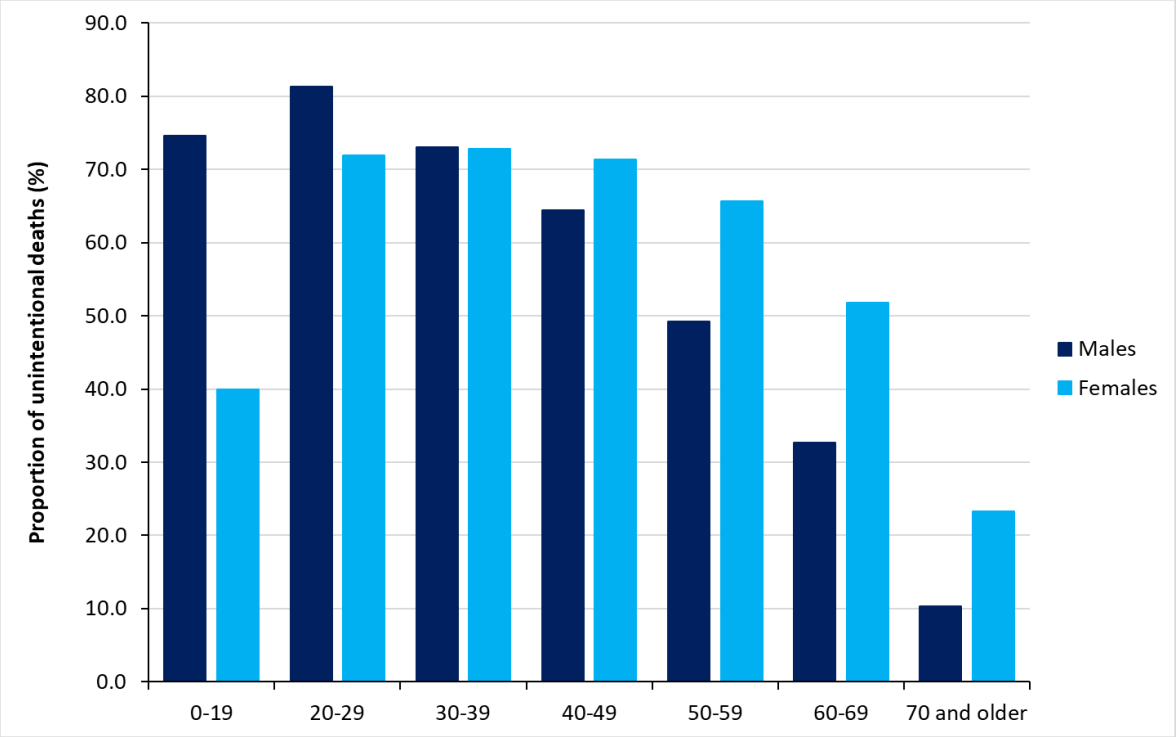
Figure 26 places the age and sex distribution of unintentional poly-substance deaths in the context of all unintentional drug-induced deaths, showing the proportion of unintentional deaths for each age and sex group that was accounted for by poly-substance deaths during the period 2018-2022.

Among males, the age group in which poly-substance deaths accounted for the highest proportion of unintentional deaths was the 20-29 cohort, in which almost four in five unintentional deaths (81.3%) involved multiple drug types. The next highest proportion of unintentional drug-induced deaths that involved multiple drug types were seen among those aged 19 and below (74.6%) and those aged 30-39 (73%).

Among females, the highest proportions of unintentional drug-induced deaths that involved multiple drug types were seen among the 30-39 age group (72.9%), the 20-29 cohort (71.9%) and the 40-49 cohort (71.4%). Around two-thirds of unintentional drug-induced deaths among females over the five-year period involved multiple drug types among those aged 50-59 (65.7%).

Notable sex differences may be seen among the older age cohorts. For those aged 60-69, poly-substance deaths accounted for 32.6% of unintentional drug-induced deaths among males but 51.8% among females. Similarly, these deaths accounted for 10.3% of unintentional drug-induced deaths among males but 23.2% among females for those aged 70 and over.

Figure 26. Unintentional drug-induced deaths that involve multiple drug types, as a proportion of all unintentional drug-induced deaths, by age and sex, 2018-2022



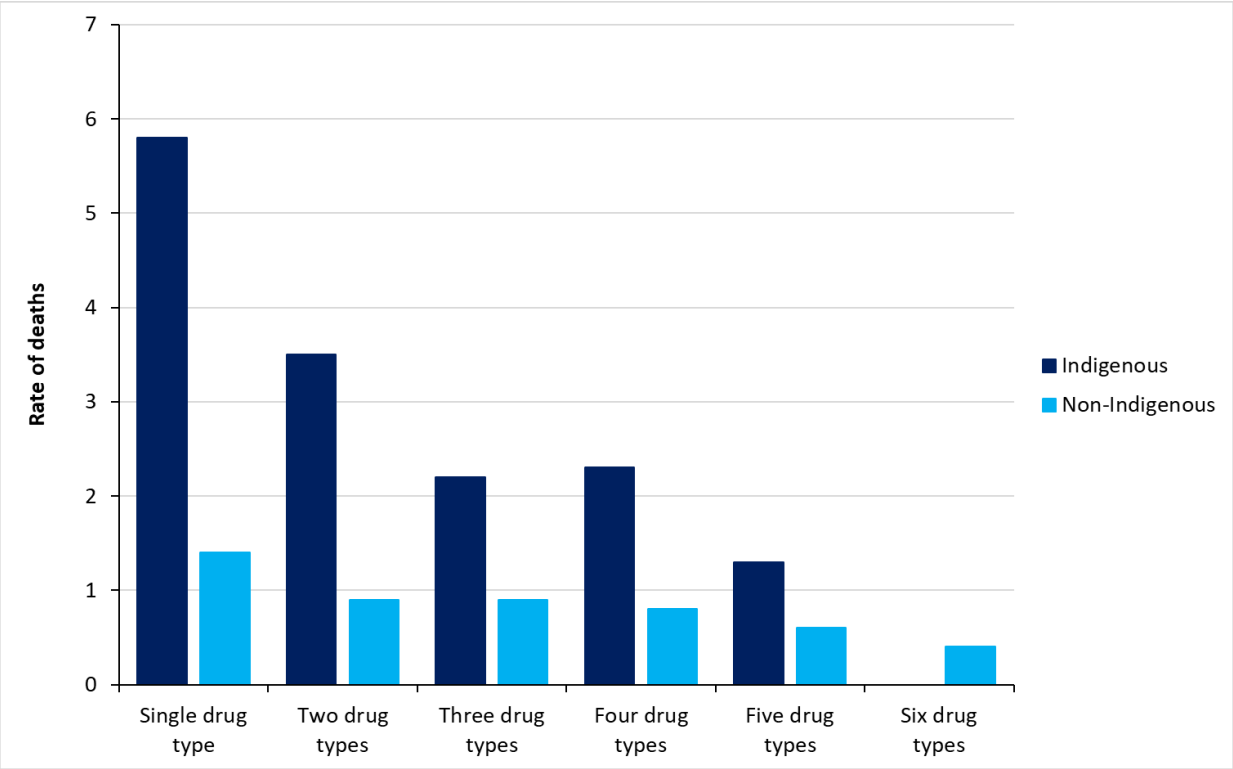
Note: Data are aggregated over the five-year period.

There are notable differences in the rate of unintentional poly-substance deaths (drug-induced death involving multiple drug types) among Indigenous and non-Indigenous Australians (Figure 27). In the five years to 2022, Indigenous Australians recorded a higher rate of unintentional poly-substance deaths compared with non-Indigenous Australians. The difference was most pronounced for unintentional drug-induced deaths involving two drug types (with 3.5 deaths per 100,000 Indigenous Australians compared with 0.9 deaths per 100,000 non-Indigenous Australians), three drug types (2.2 deaths compared with 0.9 deaths per 100,000, respectively) and four drug types (2.3 deaths compared with 0.8 deaths per 100,000, respectively).

Indigenous Australians also recorded a higher rate of of unintentional drug-induced death involving a single drug type compared with non-Indigenous Australians, with a rate of 5.8 deaths compared with 1.4 deaths per 100,000, respectively.

These data are presented aggregated across the five-year period, as annual counts are too small to enable reliable calculations.

Figure 27: Unintentional drug-induced deaths by Indigenous status, number of drugs present, poly-drug use, 2018-2022, rate per 100,000 (NSW, Qld, SA, WA, NT)



Note: Data are aggregated over the five-year period.

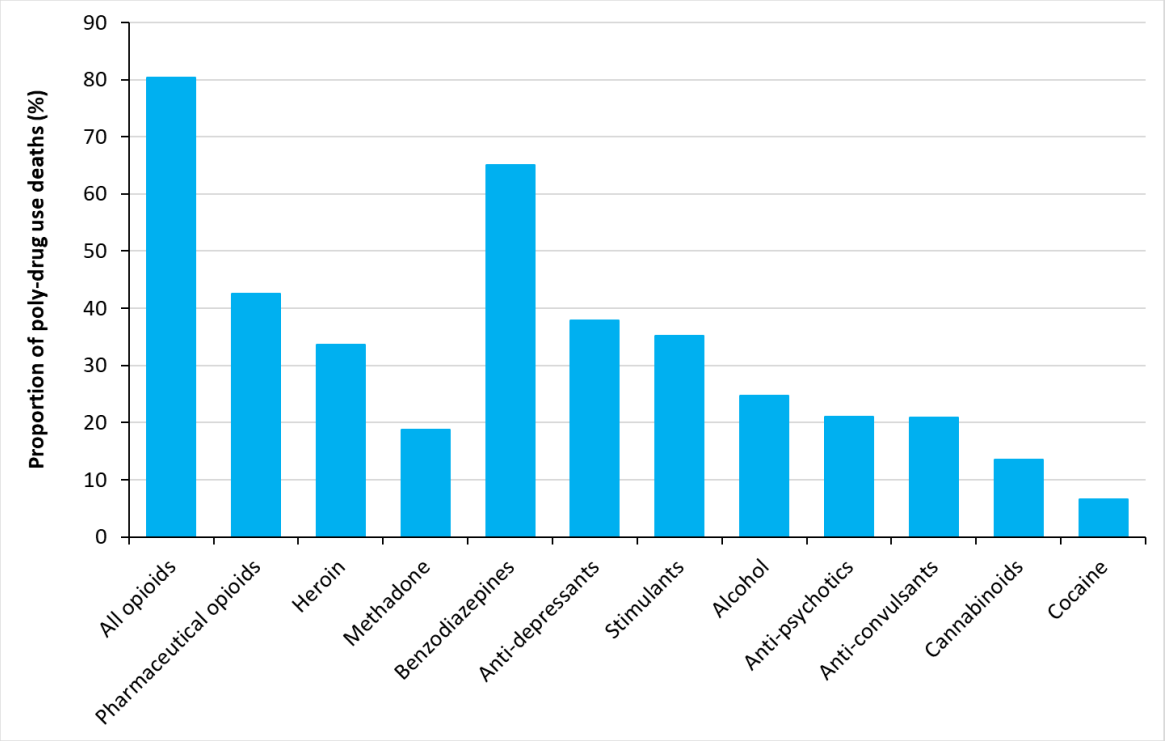
The most common drug type involved in unintentional poly-substance deaths over the five years to 2022 was opioids, which were involved in 80.4% of such deaths. Pharmaceutical opioids were involved in more than two in five (42.5%) poly-substance deaths, heroin was involved in one-third (33.6%) of these deaths and methadone in almost one-fifth (18.8%) of such deaths.

The only other drug type that was involved in more than half of poly-substance deaths was benzodiazepines, which were involved in two-thirds (65.0%) of these deaths.

Anti-depressants (37.9%) and stimulants (35.2%) were each involved in at least one-third of poly-substance deaths, while alcohol was involved in 24.7% of poly-substance deaths. The remaining drug types contributed to one-fifth or fewer of these deaths (Figure 28).

The average number of additional drug types detected in unintentional poly-substance deaths high, ranging from 3.74 other drug types for poly-substance deaths involving heroin to 5.1 other drug types for poly-substance deaths involving anti-psychotics.

Figure 28. Proportion of unintentional drug-induced deaths with multiple drug types detected, by drug type involved, 2018-2022



Note: Data are aggregated over the five-year period.

Table 9 shows the range of drug types involved in unintentional poly-substance deaths.

A number of key findings on pharmaceutical drugs and unintentional poly-substance details are outlined in Table 9:

- Among unintentional poly-substance deaths involving **pharmaceutical opioids**, seven out of ten (72.3%) also involved benzodiazepines and 45.8% involved anti-depressants.
- Among unintentional poly-substance deaths involving **methadone**, almost three-quarters (73.9%) also involved benzodiazepines, 37.6% involved anti-depressants and 27.2% involved pharmaceutical opioids.
- Among unintentional poly-substance deaths involving **heroin**, 62.5% also involved benzodiazepines, 44.9% involved stimulants, and 26.0% involved anti-depressants.
- Almost half (47.3%) of unintentional poly-substance deaths involving **benzodiazepines** also involved pharmaceutical opioids and 41.9% involved anti-depressants.
- Among unintentional poly-substance deaths involving **anti-depressants**, 71.8% also involved benzodiazepines and more than half (51.3%) also involved pharmaceutical opioids.
- Among unintentional poly-substance deaths involving **stimulants**, more than half also involved benzodiazepines (54.8%) and heroin (52.8%), and one third also involved pharmaceutical opioids (31.1%).
- Among unintentional poly-substance deaths involving **alcohol**, three in five (61.8%) involved benzodiazepines, 35.8% involved anti-depressants, and 33.9% involved pharmaceutical opioids.
- Among unintentional poly-substance deaths involving **cannabinoids**, almost two thirds (65.0%) involved benzodiazepines, 45.4% also involved stimulants and 39.9% involved pharmaceutical opioids.
- Among unintentional poly-substance deaths involving **anti-psychotics**, 72.6% also involved benzodiazepines, 51.6% involved anti-depressants, and 43.1% involved pharmaceutical opioids.
- Among unintentional poly-substance deaths involving **anti-convulsants and neuropathic pain modulators**, 68.7% involved benzodiazepines, 56.6% involved anti-depressants and 54,4% also involved pharmaceutical opioids.
- Among unintentional poly substance deaths involving **cocaine**, more than half (54.8%) also involved benzodiazepines, and 43.5% also involved stimulants.

Table 9. Unintentional poly-substance deaths, proportion (%) of each drug type where additional drug types were detected, by additional drug type, 2018-2022

	Drug type as a proportion of all poly-drug use deaths involving:										
	Pharmaceutical opioids	Methadone	Heroin	Benzo-diazepines	Anti-depressants	Stimulants	Alcohol	Cannabinoids	Anti-psychotics	Anti-convulsants	Cocaine
	%	%	%	%	%	%	%	%	%	%	%
Involving pharmaceutical opioids	-	27.2	18.3	47.3	51.3	31.1	33.9	39.9	43.1	54.4	28.5
Involving methadone	12.0	-	12.4	21.4	18.6	17.6	10.8	22.9	19.9	14.6	6.3
Involving heroin	14.4	22.2	-	32.3	23.1	52.8	27.7	36.8	27.3	22.4	34.6
Involving benzodiazepines	72.3	73.9	62.5	-	71.8	54.8	61.8	65.0	72.6	68.7	54.8
Involving anti-depressants	45.8	37.6	26.0	41.9	-	24.5	35.8	31.6	51.6	56.6	16.7
Involving stimulants	25.7	33.0	44.9	29.7	22.7	-	18.5	45.4	29.9	21.4	43.5
Involving alcohol	21.2	14.0	21.5	23.5	23.6	12.6	-	19.4	20.4	15.7	29.4
Involving cannabinoids	12.6	16.4	14.8	13.5	11.2	17.4	12.5	-	13.0	11.4	9.2
Involving anti-psychotics	21.2	22.3	17.1	23.4	28.5	17.8	17.2	20.2	-	38.8	8.4
Involving anti-convulsants and neuropathic pain modulators	29.0	29.3	12.1	23.7	27.9	15.5	8.1	17.8	26.0	-	6.9
Involving cocaine	4.4	2.2	6.8	5.5	2.9	8.1	7.5	4.5	2.6	3.6	-

8. *Analysis of specific drug types*

This chapter provides a more detailed analysis of trends for specific drug types; data are presented only for unintentional drug-induced deaths.

8.1. Opioids

Key findings:

- Opioids are the most common drug type associated with unintentional drug-induced deaths in 2022, contributing to half (49.3%) of such deaths (or 926), more than double the number in 2002 (375 deaths).
- Since 2002, the number of unintentional drug-induced deaths involving heroin has increased (from 90 to 460 in 2022, methadone (from 90 to 193 in 2022), and fentanyl, pethidine, tramadol (from 7 to 178 in 2022).
- From 2018-2022, there were 173 unintentional drug-induced deaths involving pharmaceutical opioids as the sole drug type.
- From 2018-2022, there were 388 unintentional drug-induced deaths involving heroin alone – accounting for almost one fifth (17.9%) of all unintentional drug-induced deaths involving heroin.
- From 2018-2022, seven out of ten (72.3%) unintentional poly-substance deaths involving pharmaceutical opioids also involved benzodiazepines and 45.8% also involved anti-depressants.
- Since 2018, the number of unintentional opioid-related deaths has increased 15.9%, while the number of patients dispensed opioids decreased 13.5% in the same period.
- From 2018-2022, 62.5% of unintentional poly-substance deaths involving heroin also involved benzodiazepines and 44.9% also involved stimulants.
- People aged 50 and over accounted for one in three (36.3%) unintentional drug-induced deaths involving pharmaceutical opioids in the five years to 2022, while those aged under 30 accounted for 13.7% of these deaths.
- People aged 50 and over accounted for 28.1% of unintentional drug-induced deaths involving heroin during the five years to 2022, while those aged under 30 accounted for 13.5% of these deaths.
- Unintentional deaths involving opioids among females were slightly more likely to involve pharmaceutical opioids (60.5% of such deaths) than heroin (30.7%).

- Unintentional deaths involving opioids among males were equally likely to involve heroin (50.2%) and pharmaceutical opioids (44.7%).

'Opioids' is a broad group that as presented in this report includes pharmaceutical opioids (that can be further differentiated into **synthetic opioids** (fentanyl, pethidine and tramadol), and **semi-synthetic and natural opioids** (oxycodone, morphine, and codeine), heroin, methadone and opium. Given that the type of opioid may be related to the characteristics of the people who died, demographic factors are presented by opioid type where possible.

The data cannot distinguish between the illicit or licit use of pharmaceutical opioids. Additionally, the raw data are grouped in such a way that information is not available on individual drugs within the various categories.

Data on opioid prescribing

Opioid medications are prescribed to treat chronic or severe pain; as of 2020, there were 10 opioids approved for use in Australia, along with more than 126 different formulations.[40] Australia reports a relatively high prevalence of pharmaceutical opioid use compared with other countries. In a recent study comparing per capita pharmaceutical opioid consumption (based on global pharmaceutical sales data) across 66 countries, Australia ranked sixth highest behind Canada, Switzerland, Germany, Spain, and Denmark.[41]

In Australia in 2021-22, approximately 13.3 million opioid prescriptions[42] were dispensed for pain relief under the Pharmaceutical Benefits Scheme (PBS) to almost 3.0 million patients nationwide, a decrease of almost 700,000 opioid prescriptions from 2020-21. This equates to 10,386 patients per 100,000 population receiving a cumulative total of 45,083 prescriptions for an opioid. Oxycodone was the most common type of opioid prescribed in Australia (with approximately 4.7 million prescriptions dispensed to 1.1 million patients), followed by codeine (approximately 3.4 million scripts dispensed to 1.5 million patients) and tramadol (approximately 1.7 million scripts dispensed to 406,404 patients).[43]

[40] Dunlop, A. J., Lokuge, B., & Lintzeris, N. (2021). Opioid prescribing in Australia: too much and not enough. *The Medical Journal of Australia*, *215*(3), 117.
[41] Ju, C., Wei, L., Man, K. K., Wang, Z., Ma, T. T., Chan, A. Y., et al. (2022). Global, regional, and national trends in opioid analgesic consumption from 2015 to 2019: a longitudinal study. *The Lancet Public Health*, *7*(4), e335-e346.
[42] These data include opioid prescriptions for the treatment of chronic pain; they do not include prescriptions for the treatment of opioid use disorder.
[43] Australian Institute of Health and Welfare (2024). *Alcohol, tobacco & other drugs in Australia: Pharmaceuticals.*

Data on opioid consumption

Australia's National Wastewater Analysis Program reporting estimates that Australians consumed approximately 80 milligrams (mg) of oxycodone (or 4 doses) and 0.8 mg of fentanyl (or 4 doses) per 1,000 people per day from August 2020 to October 2022.[44]

The AIHW's National Drug Strategy Household Survey, which collects information from Australians on their drug use, estimates that in 2022-23:

- approximately 2.2% of Australians used a prescription opioid for illicit or non-medical purposes;
- approximately 1.2% of the population reported recent heroin use.[45]

Estimates obtained via wastewater analysis suggest that Australians consumed almost 150 mg of heroin (or 7 doses) per 1,000 people per day, from August 2020 to October 2022.[46]

Opioid-related mortality

There were 926 unintentional drug-induced deaths involving opioids in 2022, with a rate of 3.7 deaths per 100,000 population.

Opioids (collectively) were involved in 49.3% of all unintentional drug-induced deaths; they are the group of drugs most commonly identified in unintentional drug-induced deaths. This is predominantly due to heroin and the oxycodone, morphine, codeine group (Figure 29).

In 2022, there were 460 unintentional drug-induced deaths involving heroin (representing 49.7% of unintentional drug-induced deaths involving opioids) and 289 involving oxycodone, morphine, codeine (31.2% of unintentional drug-induced deaths involving opioids). There were an additional 193 deaths involving methadone (20.8% of unintentional drug-induced deaths involving opioids) and 178 unintentional drug-induced deaths involving the fentanyl, pethidine, tramadol group (19.2% of unintentional drug-induced deaths involving opioids).[47] The rate of death was higher for heroin (1.8 deaths per 100,000 population) and oxycodone, morphine, codeine (1.1 deaths per 100,000

[44] Australian Criminal Intelligence Commission (2023). *National Wastewater Drug Monitoring Program: Report 18.* Canberra: ACIC.
[45] Here 'opioids' refers to painkillers/pain-relievers and opioids, excludes over-the-counter medications such as paracetamol and aspirin. Australian Institute of Health and Welfare (2024). *National Drug Strategy Household Survey 2022-23*.
[46] Australian Criminal Intelligence Commission (2023). *National Wastewater Drug Monitoring Program: Report 18.* Canberra: ACIC.
[47] Percentages sum to more than 100% as one person may have multiple opioids in their system at death, such that they are counted in more than one opioid category.

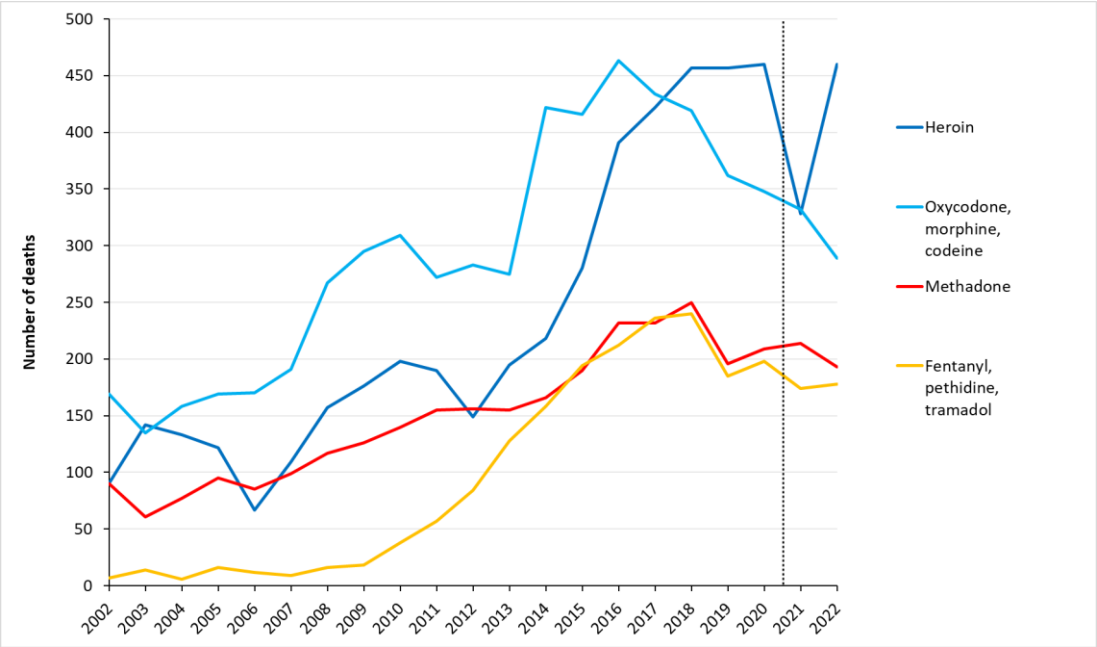
population), compared with methadone (0.8 deaths per 100,000 population) and fentanyl, pethidine, tramadol (0.7 deaths per 100,000 population). As a group, pharmaceutical opioids were involved in 43.6% of unintentional drug-induced deaths involving opioids in 2022, with 404 deaths. There were no reported deaths involving opium in 2022.

The number of unintentional drug-induced deaths involving opioids has more than doubled since 2002, increasing from 375 to 926 in 2022. Over the same period, deaths involving heroin increased by more than 411% (from 90 in 2002 to 460 in 2022), deaths involving methadone almost doubled (from 106 to 193 in 2022) and deaths involving fentanyl, pethidine, and tramadol increased by 493% (from 30 to 178 in 2022). The number of deaths involving heroin decreased from 460 in 2020 to 328 in 2021 before increasing to 460 in 2022.[48]

While the number of unintentional drug-induced deaths involving oxycodone, morphine, codeine increased steadily to a high of 463 deaths in 2016, it has continued to fall since then to 289 in 2022. This reduction may be due in part to the increased difficulty in accessing codeine following the rescheduling of over-the-counter codeine as a Schedule 4 medicine from 1 February 2018.

[48] Research has found that Australian heroin and methamphetamine markets were impacted by interruptions to global and local supply chains as a result of COVID-19 pandemic in 2020 followed by sharp increases in 2022. See Price O, Man N, Sutherland R, Bruno R, Dietze P, Salom C, Agramunt S, Grigg J, Degenhardt L, Peacock A. (2023) Disruption to Australian heroin, methamphetamine, cocaine and ecstasy markets with the COVID-19 pandemic and associated restrictions. Int J Drug Policy.

Figure 29. Number of unintentional drug-induced deaths by opioid type, 2002-2022



Note: Data to the right of the dotted line (2021 and 2022 data) are preliminary, and likely to rise.

There are markedly different jurisdictional trends in rates per 100,000 population, by opioid type (Figure 30).[49] For heroin (Figure 30A), the highest rates of unintentional drug-induced deaths have predominantly occurred in Victoria, with a sharp increase from 2012 onwards. In 2021 there was a decrease resulting in a rate of 2.1 deaths per 100,000 population, before a sharp increase to 3.1 deaths per 100,000 population in 2022. The rate in Western Australia has also been increasing substantially, such that the state had the second highest rate in 2022, with 2.7 deaths per 100,000 population.[50]

There has been high variability in the rates of unintentional drug-induced deaths involving oxycodone, morphine, codeine (Figure 30B). While Western Australia continues to have a higher rate than other jurisdictions, most states and territories appear to be seeing a drop in such deaths. Since

[49] Rates for these figures are calculated based on the Australian Bureau of Statistics' Estimated Resident Population data in each state or territory for the June quarter of each year.
[50] The smaller population size in Western Australia means that there is more uncertainty in the estimates for that state.

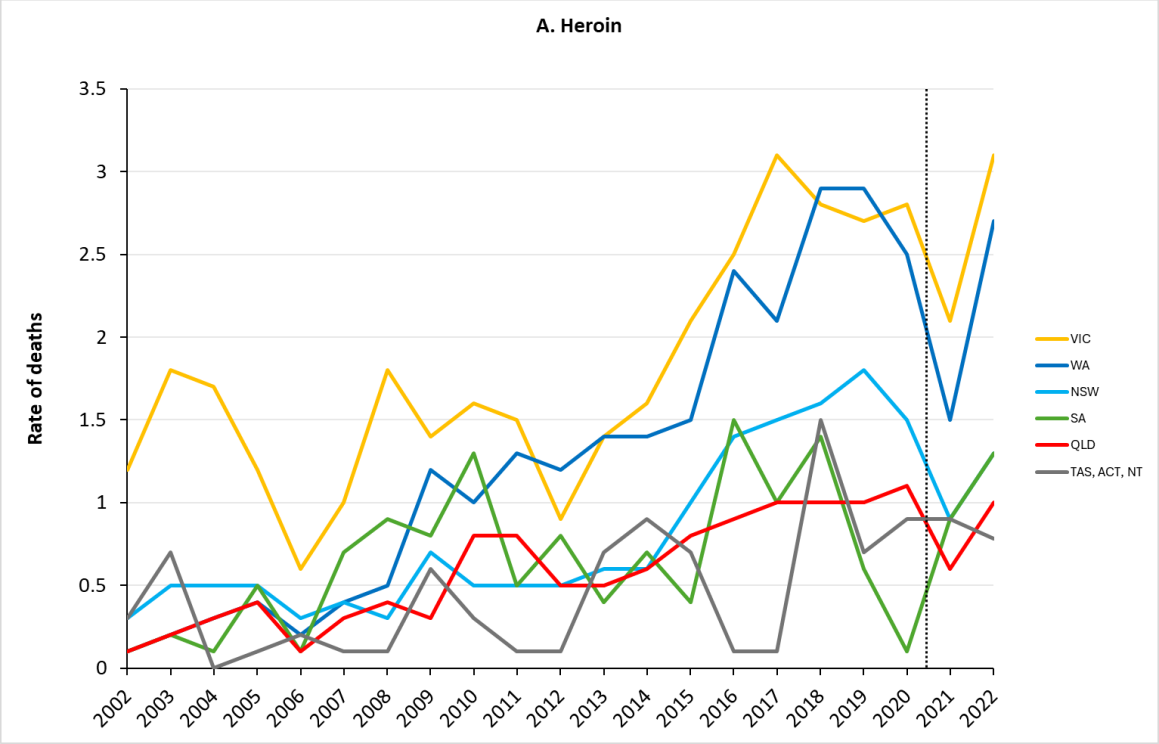
2019 there has been a sharp increase in deaths involving oxycodone, morphine, codeine in South Australia from 0.1 deaths per 100,000 population to 1.2 deaths per 100,000 population.

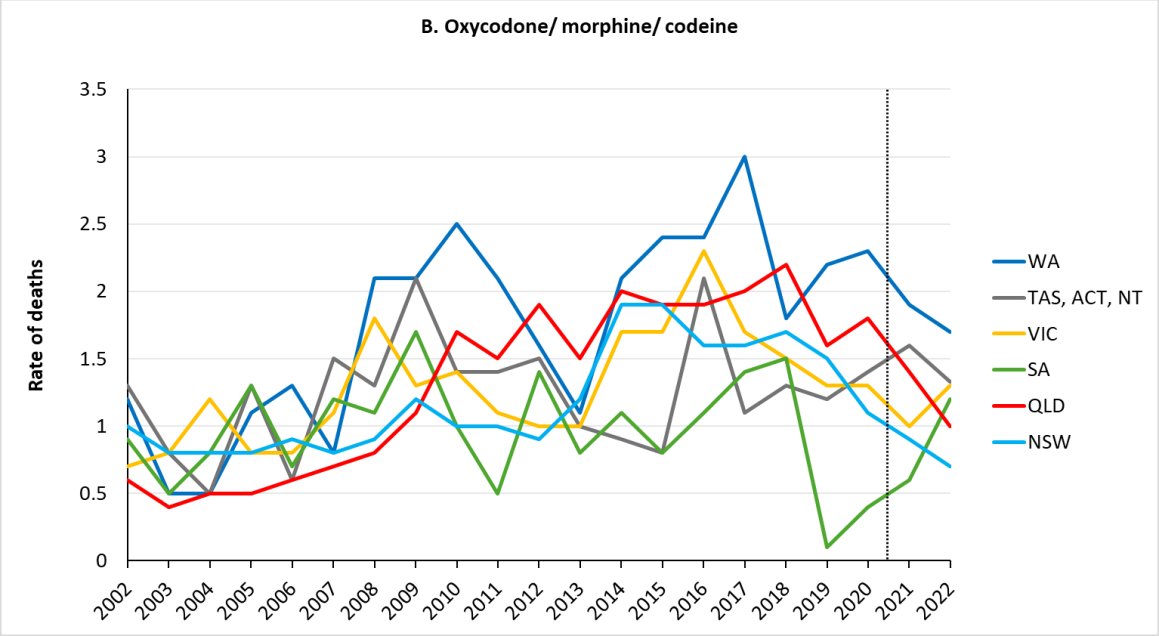
For methadone (Figure 30C), the rates of unintentional drug-induced death are lower than for heroin or oxycodone, morphine, codeine. Despite substantial variability (and uncertainty) in the rates due to small numbers, the overall trend appears to be increasing in Victoria, which had the highest rate of unintentional drug-induced deaths involving methadone in 2022 (1.1 deaths per 100,000 population). While New South Wales had previously seen a spike in its rate of unintentional drug-induced deaths involving methadone, there was a drop from 1.1 per 100,000 population in 2020 to 0.9 in 2022.

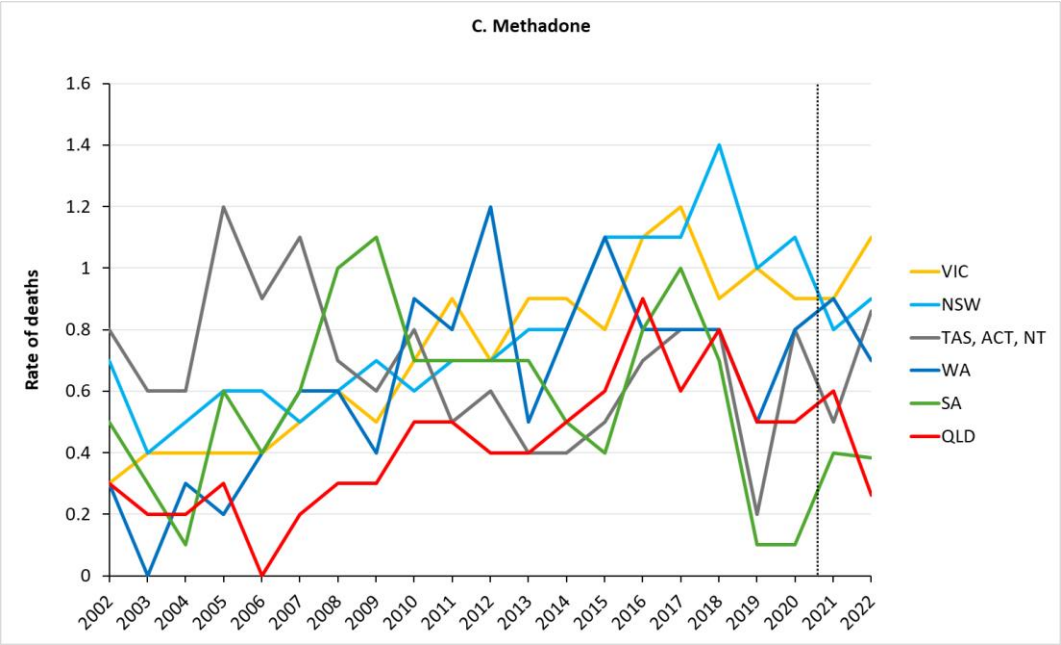
For fentanyl, pethidine, tramadol (Figure 30D), higher rates of deaths in recent years have been observed in Western Australia, with 2.1 deaths per 100,000 population.[51] The rate was less than 1 per 100,000 population in all other dates (ranging from 0.3 in New South Wales to 0.8 in TAS/ACT/NT).

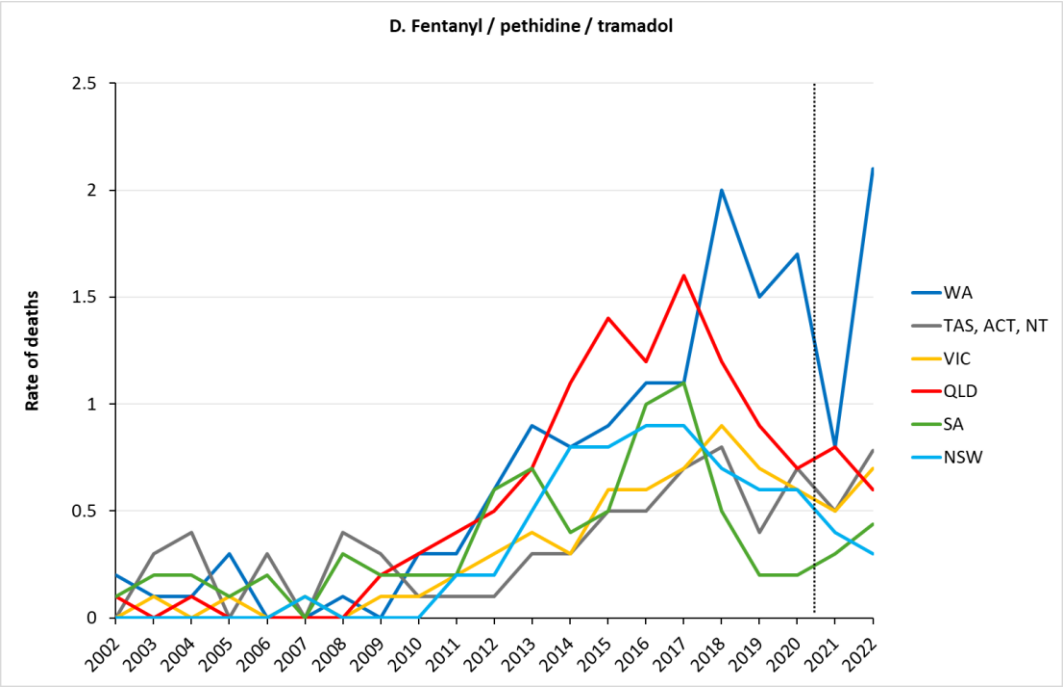
[51] The smaller population size in Western Australia means that there is more uncertainty in the estimates for that state.

Figure 30. Unintentional drug-induced deaths by state for each opioid type, 2002-2022, rate per 100,000 population









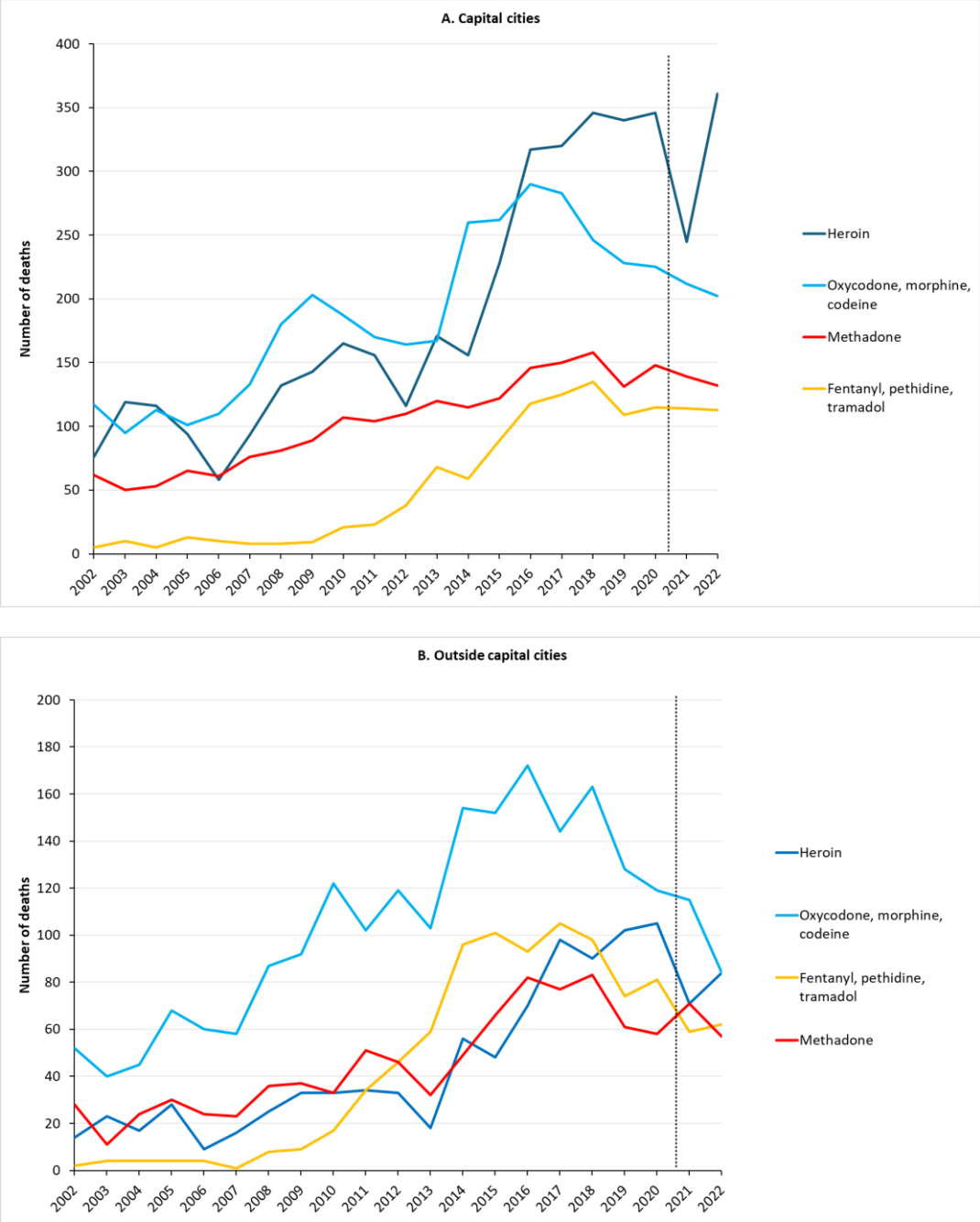
Note: Data to the right of the dotted line (2021and 2022 data) are preliminary, and likely to rise. Numbers of deaths cannot be reliably converted to rates per 100,000 in Tasmania, Northern Territory, and Australian Capital Territory due to low numbers and are therefore presented as an aggregate.

Unintentional drug-induced deaths involving opioids are increasing overall, however, there are differences between regional/rural and metropolitan areas in the most common types of opioids involved (Figure 31).

In the capital cities (Figure 31A), the number of unintentional drug-induced deaths involving heroin has increased overtime (from 76 deaths in 2002 to 361 in 2022). Since 2016, the number of deaths involving heroin has exceeded those involving oxycodone, morphine, codeine (with 202 deaths in 2022).

In rural and regional areas (Figure 31B), for the first time there was the same number of unintentional drug-induced deaths involving heroin as oxycodone, morphine, codeine (84 deaths each). Like trends observed in capital cities, the number of deaths involving heroin in regional and rural areas has increased from 14 deaths in 2002 to 84 in 2022, while the number of deaths involving oxycodone, morphine, codeine increased gradually from 52 in 2002 to 84 in 2022. The number of deaths involving fentanyl, pethidine, tramadol has steadily increased from 2002 (from only 2 in 2002 to 62 in 2022).

Figure 31. Number of unintentional drug-induced deaths by opioid type, 2002-2022, within (A) and outside of (B) capital cities



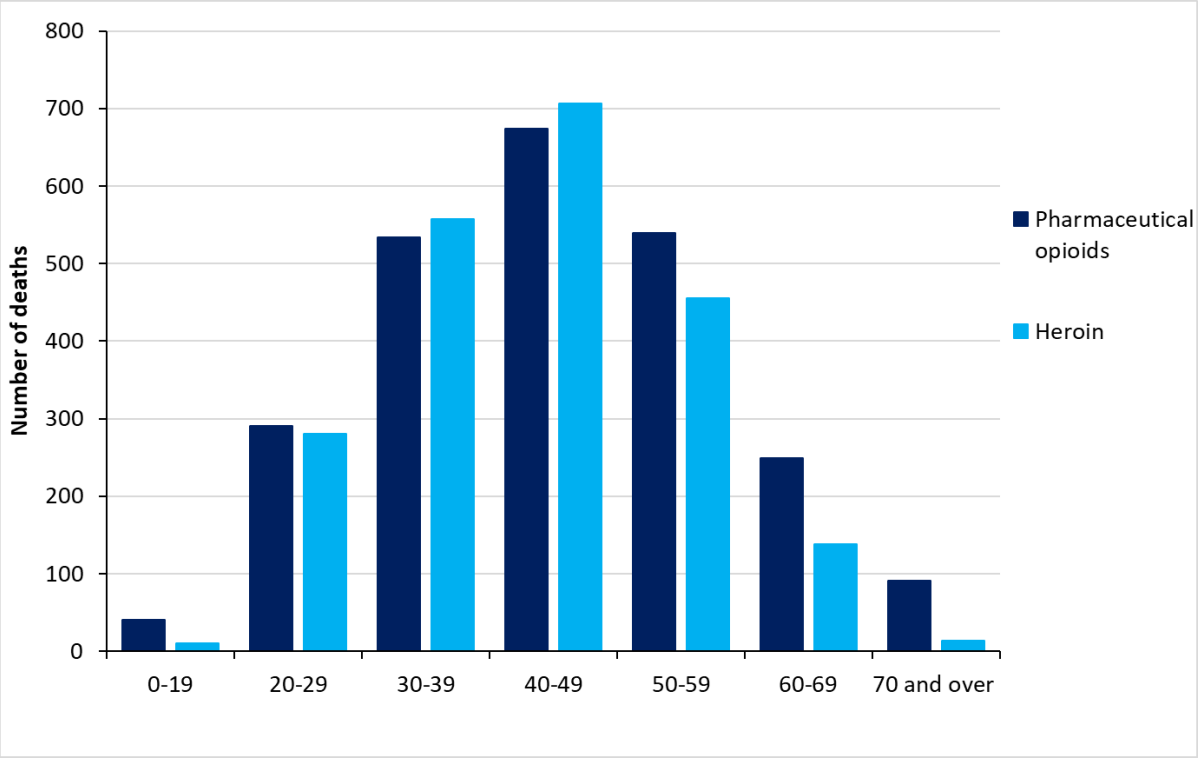
Note: Data to the right of the dotted line (2021 and 2022 data) are preliminary, and likely to rise.

Older age groups are more prevalent in unintentional drug-induced deaths involving pharmaceutical opioids than those involving heroin (Figure 32). In the period 2018 to 2022, the most common age group for unintentional deaths involving heroin was 40-49 (with 707 deaths, or 32.7% of unintentional drug-induced deaths involving heroin), although the number of these deaths in the 30-39 cohort was also high (557 deaths). The 40-49 age group also reported the most unintentional drug-induced deaths involving pharmaceutical opioids (with 674 deaths, or 27.9% of unintentional deaths involving these drugs).

Approximately one-third (36.3%) of unintentional drug-induced deaths involving pharmaceutical opioids were observed in people aged 50 and above: 22.3% among the 50-59 age group (539 deaths) and 14.1% among people aged 60 and above (340 deaths).

In comparison, around one in four (28.1%) unintentional drug-induced deaths involving heroin were observed in people aged 50 and above: 21.0% among the 50-59 age group (455 deaths) and 7.0% among people aged 60 and above (152 deaths).

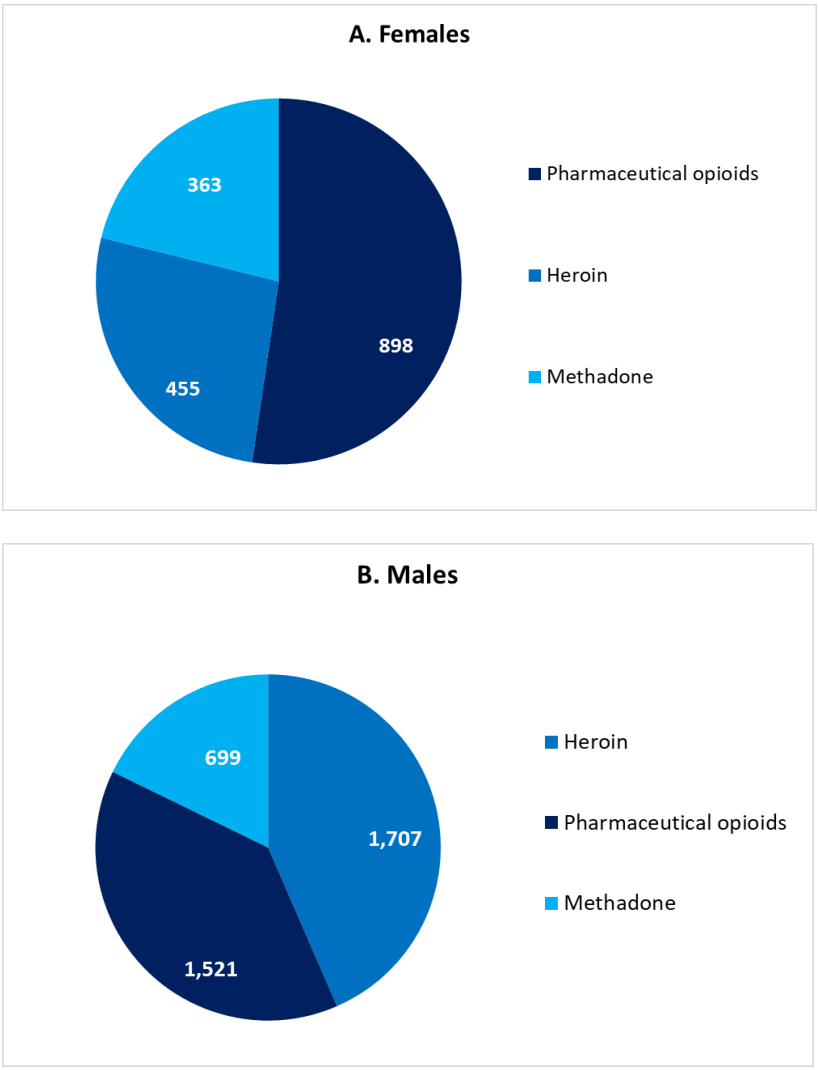
Figure 32. Number of unintentional drug-induced deaths by opioid type and age group, 2018-2022



Note: Data are aggregated over the five-year period.

As shown in Figure 33, pharmaceutical opioids contribute to a significant number of unintentional drug-induced deaths involving opioids among both males and females. Females had a higher proportion of unintentional drug-induced deaths involving pharmaceutical opioids than males (60.5% among females, compared with 44.7% among males), while males had a higher proportion of unintentional drug-induced deaths involving heroin (50.2% among males, compared with 30.7% among females). Methadone was associated with about one in four unintentional drug-induced deaths involving opioids among females (24.5%) and one in five of such deaths among males (20.6% for males).

Figure 33. Number of unintentional drug-induced deaths by opioid type and sex, 2018-2022

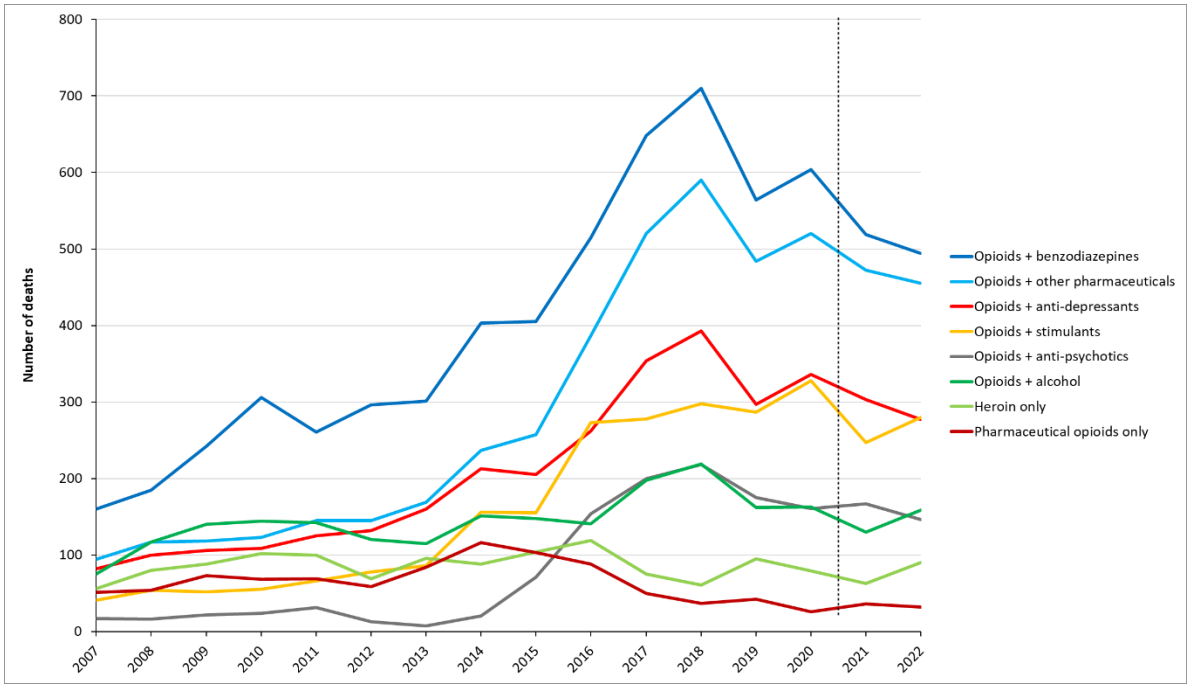


Note: Data are aggregated over the five-year period.

Unintentional drug-induced deaths involving opioids predominantly occur in a poly-drug context, as shown in Figure 34. The most common combination of drugs is opioids with benzodiazepines, and this category of poly-drug use has nearly trebled, from 160 deaths in 2007 to 494 in 2022. The combination of opioids with a broad range of other pharmaceuticals accounts for the second-highest number of unintentional drug-induced deaths involving opioids (455 deaths in 2022). In contrast, the number of unintentional deaths has remained relatively stable for the sole use of heroin, the sole use of pharmaceutical opioids, or the combination of opioids with alcohol.

In the five years to 2022, there were 173 unintentional drug-induced deaths involving pharmaceutical opioids as the sole drug type. In the same period, there were 388 unintentional drug-induced deaths involving heroin alone. The number of unintentional drug-induced deaths involving pharmaceutical opioids alone has decreased from a high of 116 such deaths in 2014 to 32 deaths in 2022.

Figure 34. Number of unintentional drug-induced deaths involving opioids by sole-drug and poly-drug use categories, 2007-2022



Note: Data to the right of the dotted line (2021 and 2022 data) are preliminary, and likely to rise. 'Other pharmaceuticals' is a broad group that includes anti-convulsants, anti-depressants, anti-psychotics, sedatives and hypnotics, and anaesthetics, but excludes opioid analgesics and benzodiazepines. 'Pharmaceutical opioids' includes oxycodone, morphine, codeine, fentanyl, pethidine, tramadol, tapentadol, buprenorphine and hydromorphone.

8.2. Benzodiazepines

Key findings:

- Benzodiazepines remain the second most common drug type associated with unintentional drug-induced deaths in 2022, contributing to 31.8% of unintentional drug-induced deaths (597 such deaths).
- The proportion of unintentional drug-induced deaths involving benzodiazepines has almost doubled from 18.9% in 2002 to 31.8% in 2022.
- From 2018-2022, there were only 28 unintentional drug-induced deaths involving benzodiazepines as the sole drug type, accounting for less than 1% of all unintentional drug-induced deaths involving benzodiazepines.
- From 2018-2022, almost half (47.3%) of unintentional poly-substance deaths involving benzodiazepines also involved pharmaceutical opioids and 41.9% involved anti-depressants.
- Benzodiazepines were the drug type most commonly found in poly-drug deaths that involved pharmaceutical drugs: they appeared in 73.9% of poly-drug deaths involving methadone, 72.6% of poly drug deaths involving anti-psychotics, and 72.3% of poly-drug deaths involving pharmaceutical opioids.
- People aged 50 and above accounted for almost three in ten (30.6)% unintentional drug-induced deaths involving benzodiazepines during the five years to 2022, while those aged under 30 accounted for 14.3% of such deaths.
- Males accounted for two-thirds (66.2%) of the unintentional drug-induced deaths involving benzodiazepines during the five years to 2022.

Benzodiazepines are a class of drugs prescribed for problems relating to anxiety and sleep. In 2021-22, there were approximately 4.8 million benzodiazepine prescriptions dispensed to 1.3 million patients under the PBS, at a rate of 16,977 prescriptions per 100,000 population.[52] Over the last decade, 'novel' benzodiazepines (a term referring to a subset of new psychoactive substances that includes pharmaceutical benzodiazepines not available for use in Australia, and illicitly manufactured benzodiazepines) have become increasingly prevalent in the illicit drug market in Australia.[53] Novel benzodiazepines often have a higher potency compared with prescription benzodiazepines; they

[52] Australian Institute of Health and Welfare (2024). *Alcohol, tobacco & other drugs in Australia: Pharmaceuticals.*

[53] Bade, R., Ghetia, M., White, J. M., & Gerber, C. (2020). Determination of prescribed and designer benzodiazepines and metabolites in influent wastewater. *Analytical Methods* 28, 3637-3644.

have been detected in drug-induced deaths in Australia since 2015.[54] The data presented here cannot distinguish between the use of pharmaceutical or novel benzodiazepines.

There were 597 unintentional drug-induced deaths involving benzodiazepines in 2022, with a rate of 2.3 deaths per 100,000 population. Benzodiazepines were detected in one-third (31.8%) of all unintentional drug-induced deaths; they are the second-most common drug group identified, behind opioids.

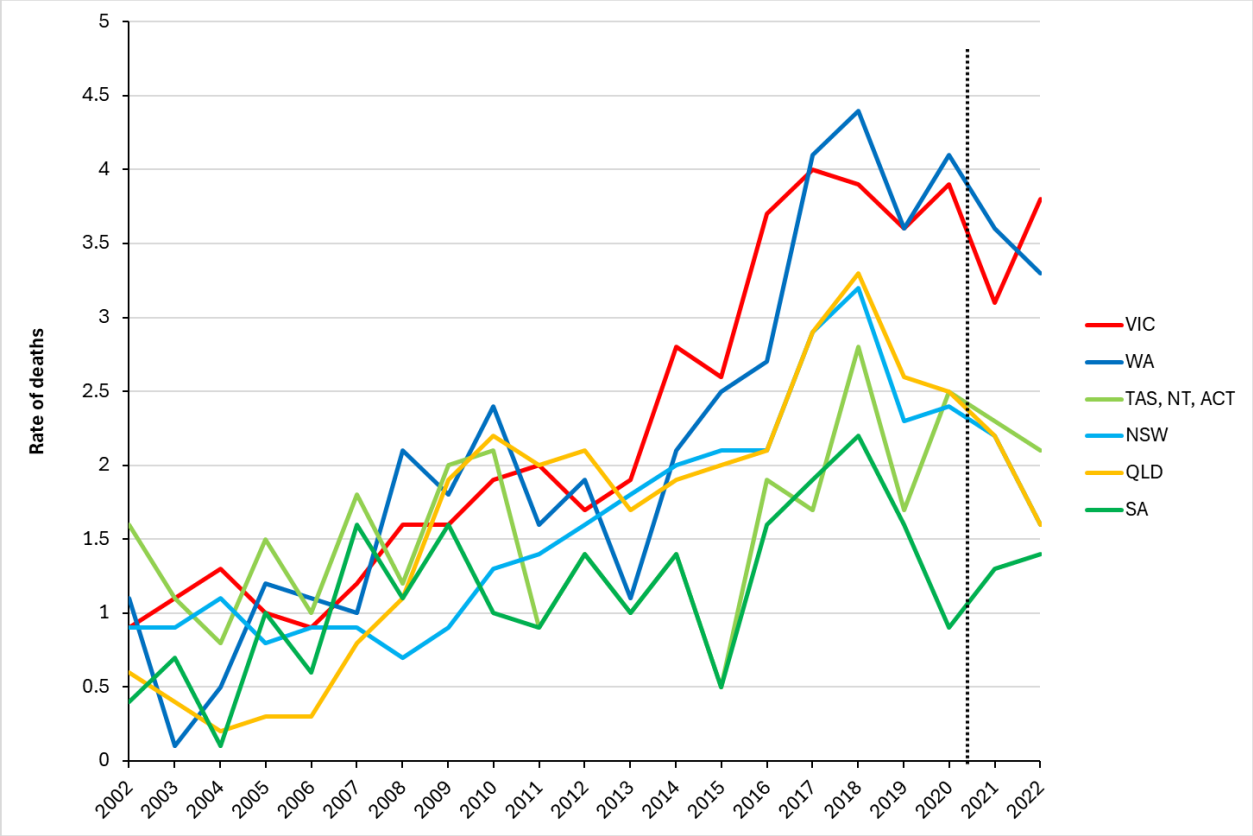
Unintentional deaths involving benzodiazepines primarily occurred in a poly-substance context: in the five years to 2022, there were only 28 unintentional drug-induced deaths involving benzodiazepines as the sole drug type, accounting for less than 1% of all unintentional drug-induced deaths involving benzodiazepines. From 2018-2022, almost half (47.3%) of unintentional poly-substance deaths involving benzodiazepines also involved pharmaceutical opioids and 41.9% involved anti-depressants. Benzodiazepines were the drug type most commonly found in poly-drug deaths that involved pharmaceutical drugs: they appeared in 73.9% of poly-drug deaths involving methadone, 72.6% of poly drug deaths involving anti-psychotics, and 72.3% of poly-drug deaths involving pharmaceutical opioids.

As shown in Figure 35,[55] rates of unintentional drug-induced deaths involving benzodiazepines have risen sharply since 2012 in Victoria (from 1.7 to 3.8 deaths per 100,000 population in 2022), and Western Australia (from 1.9 to 3.3 deaths per 100,000 population). While this steep increase is not replicated in other states, a more gradual rise has occurred in both New South Wales and Queensland. The combined rate of unintentional drug-induced deaths involving benzodiazepines in Tasmania, the ACT and the Northern Territory has also increased since 2012 (from 1.4 to 2.1 deaths per 100,000 population in 2022).

[54] Darke, S., Peacock, A., Duflou, J., Farrell, M., & Lappin, J. (2022). Characteristics of fatal 'novel' benzodiazepine toxicity in Australia. *Forensic Science International*, *331*, 111140.

[55] Rates for these figures are calculated based on the Australian Bureau of Statistics' Estimated Resident Population data in each state or territory for the June quarter of each year.

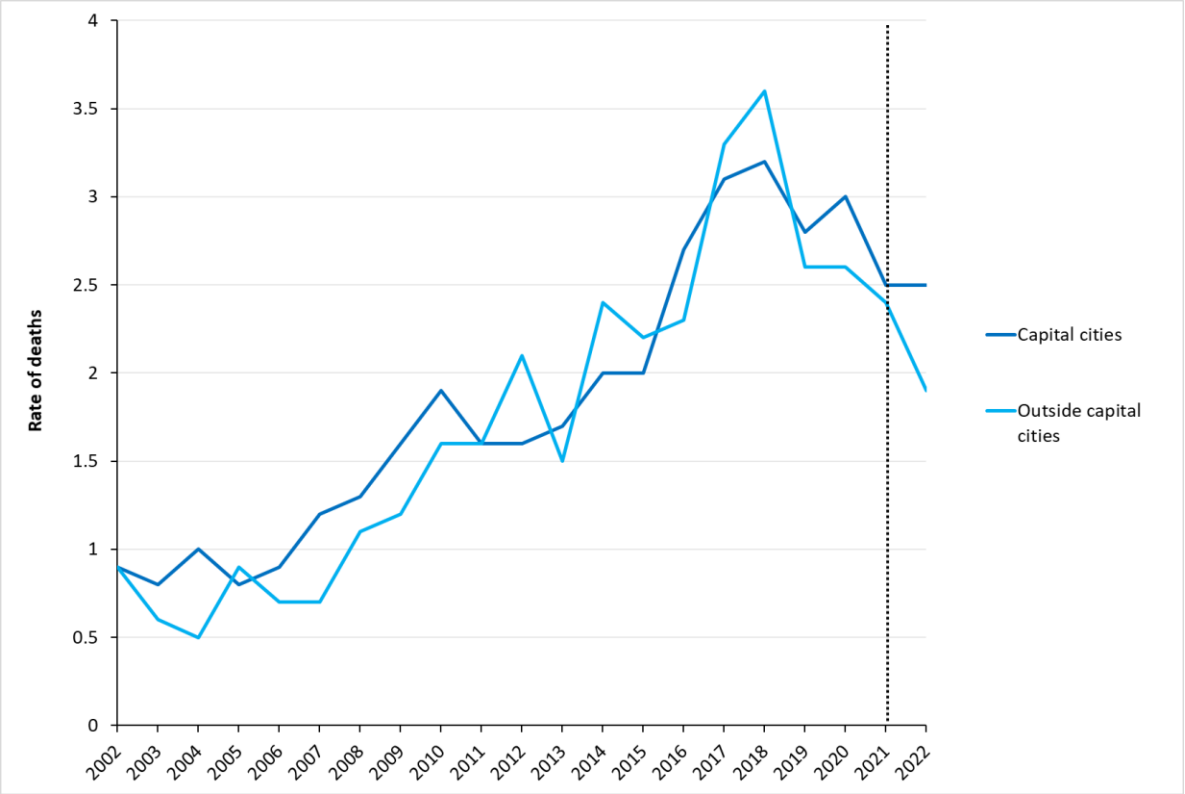
Figure 35. Unintentional drug-induced deaths involving benzodiazepines by state and territory, 2002-2022, rate per 100,000 population



Note: Data to the right of the dotted line (2021 and 2022 data) are preliminary, and likely to rise. Numbers of deaths cannot be reliably converted to rates per 100,000 in Tasmania, Northern Territory, and Australian Capital Territory due to low numbers and are therefore presented as an aggregate.

Unintentional drug-induced deaths involving benzodiazepines were increasing both within and outside of capital cities, with broadly comparable rates over time up to 2018. In 2022, the rate of unintentional drug-induced deaths involving benzodiazepines decreased to 2.5 deaths per 100,000 population within capital cities and 1.9 deaths per 100,000 population outside of capital cities (Figure 36). While preliminary data suggest the rate of unintentional drug-induced deaths involving benzodiazepines has decreased in recent years within capital cities (from a peak of 3.2 deaths per 100,000 population in 2018 to 2.5 in 2022) and outside of capital cities (from 3.6 deaths per 100,000 in 2018 to 1.9 in 2022), both rates have increased considerably since 2002.

Figure 36. Unintentional drug-induced deaths involving benzodiazepines by regionality, 2002-2022, rate per 100,000 population

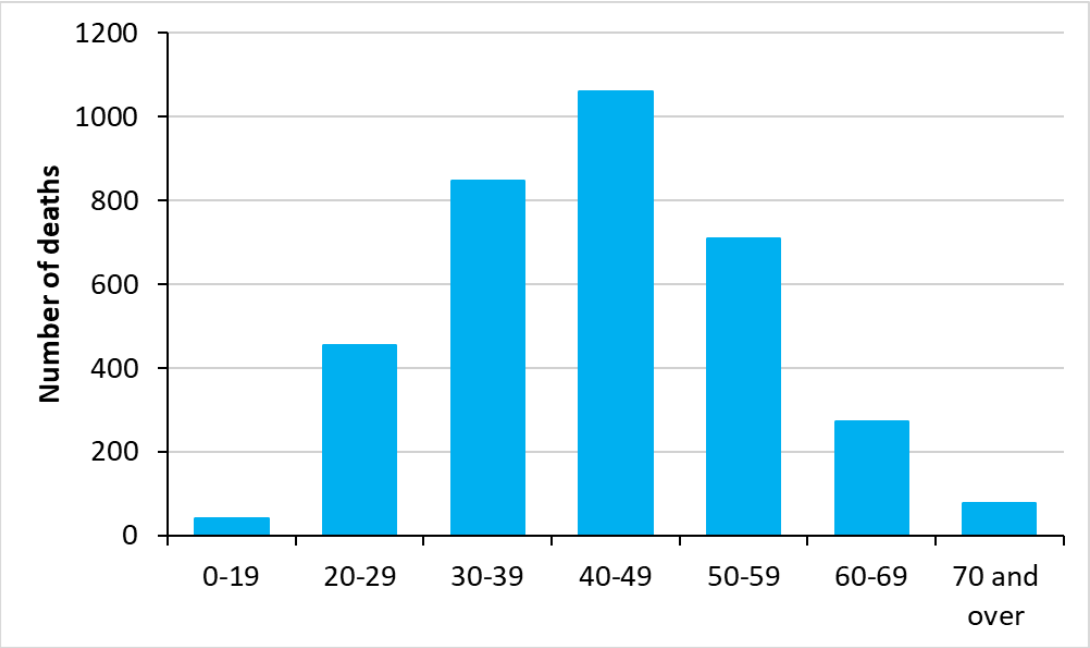


Note: Data to the right of the dotted line (2021 and 2022 data) are preliminary, and likely to rise.

The number of unintentional drug-induced deaths involving benzodiazepines over the period 2018 to 2022 was highest among people aged 40-49 (accounting for 28.9% of unintentional drug-induced deaths involving benzodiazepines), followed by those aged 30-39 (23.1% of unintentional drug-induced deaths involving benzodiazepines), as shown in Figure 37.

One third (30.6%) of unintentional drug-induced deaths involving benzodiazepines during this period involved people aged 50 and above: 20.4% among the 50-59 age group (709 deaths) and 7.89% among people aged 60 and above (350 deaths).

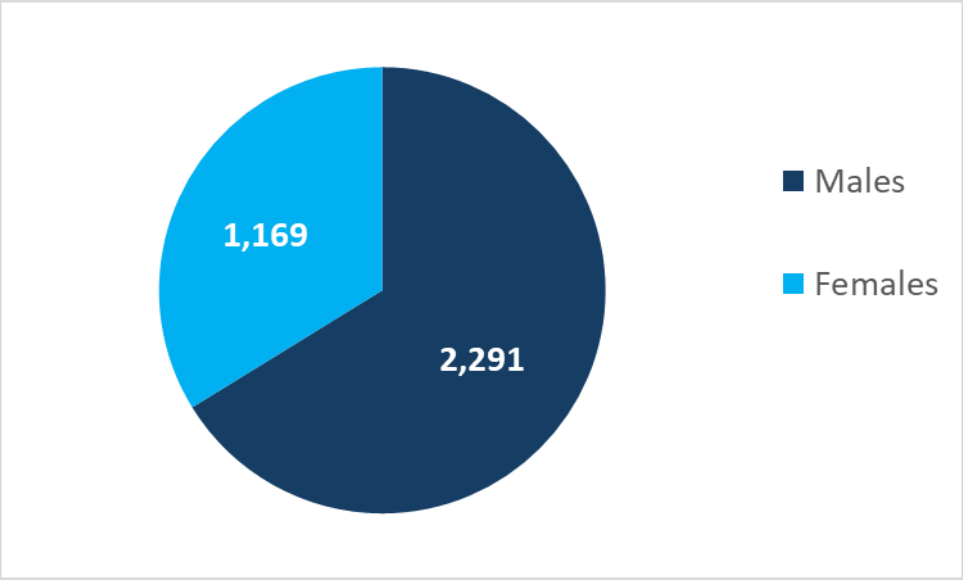
Figure 37. Number of unintentional drug-induced deaths involving benzodiazepines by age group, 2018-2022



Note: Data are aggregated over the five-year period.

Males accounted for two thirds (66.2%, 2,291 deaths) of unintentional drug-induced deaths involving benzodiazepines over the period 2018-2022. There were with 1,169 deaths among females over the same period – as shown in Figure 38.

Figure 38. Number of unintentional drug-induced deaths involving benzodiazepines by sex, 2018-2022



Note: Data are aggregated over the five-year period.

8.3. Stimulants

Key findings:

- Stimulants contributed to 29.4% of unintentional drug-induced deaths in 2022 (552 such deaths), increasing from just 6.3% in 2002.
- The number of unintentional drug-induced deaths involving stimulants has increased ten-fold in the past two decades, from 57 deaths in 2002 to 552 in 2022.
- From 2018-2022, there were 471 unintentional drug-induced deaths involving stimulants as the sole drug type, accounting for one fifth (20.2%) of all unintentional drug-induced deaths involving stimulants.
- From 2018-2022, 54.8% of unintentional poly-substance deaths involving stimulants also involved benzodiazepines, 42.8% also involved heroin, and 31.1% also involved pharmaceutical opioids.
- People aged 50 and older accounted for 15.4% of the unintentional drug-induced deaths involving stimulants during the five years to 2022, while those aged under 30 accounted for 19.2% of these deaths.
- Males accounted for 62.4% of the unintentional drug-induced deaths involving stimulants during the five years to 2022.

This group includes methamphetamine (including 'ice'), amphetamine (including prescription stimulant medications used to treat attention deficit hyperactivity disorder and narcolepsy), and ecstasy (MDMA).

Methamphetamines, amphetamines and MDMA

Methamphetamine accounts for more than 80% of all illicit stimulant use in Australia: it is the second most consumed illicit drug after cannabis.[56] The 2022-2023 National Drug Strategy Household Survey found approximately 200,000 people in Australia had used methamphetamine and amphetamine in the previous 12 months.[57] Australians are estimated to have consumed 40 doses per 1,000 people per day.[58] Australia has a large methamphetamine market compared with

[56] Australian Criminal Intelligence Commission (2023). *National Wastewater Drug Monitoring Program: report 19*.
[57] Australian Institute of Health and Welfare (2024). *National Drug Strategy Household Survey 2022-2023*.

[58] Australian Criminal Intelligence Commission (2023). *National Wastewater Drug Monitoring Program: Report 19.* Canberra: ACIC.

other countries. In a recent study comparing stimulant consumption in 25 countries spanning Europe, Asia and Oceania, Australia reported the third highest methamphetamine consumption on a per capita basis.[59] In contrast, the National Drug Strategy Household Survey found 2.1% (400,000 people) in Australia used ecstasy in the previous 12 months.[60]

Prescribing rates for amphetamines have increased in Australia since 2016-17. Approximately 2.5 million stimulant prescriptions were dispensed to approximately 365,00 patients under the PBS in 2021-22. On average, the number of stimulant prescriptions dispensed in Australia has increased by 16% each year since 2014-15.[61] Research suggests that prescription stimulant medications are becoming increasingly prevalent among stimulant-related poisonings and hospitalisations.[62]

Stimulants-related mortality

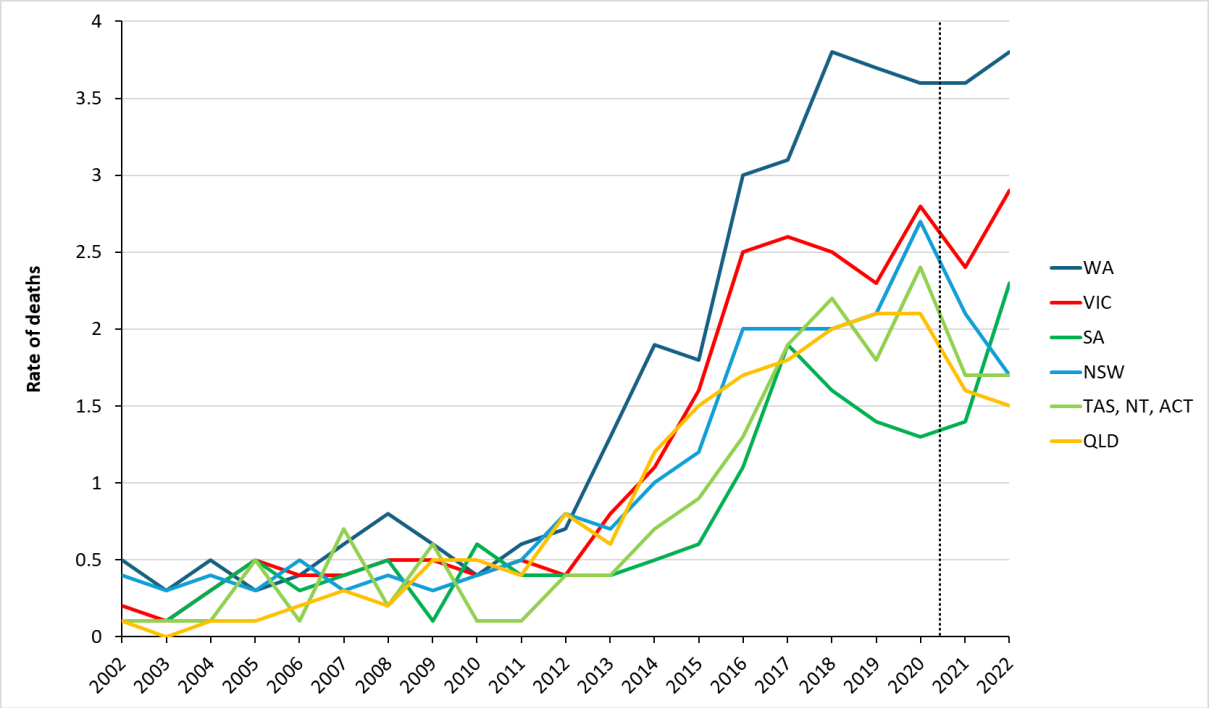
There were 552 unintentional drug-induced deaths involving stimulants in 2022, with a rate of 2.2 deaths per 100,000 population. Stimulants were detected in 29.4% of all unintentional drug-induced deaths. Their involvement in unintentional drug-induced deaths has risen substantially over time: in 2002, there were 57 stimulant-related unintentional drug-induced deaths. Stimulants were the third-most commonly detected drug in these deaths in 2022.

In the five years to 2022, there were 471 unintentional drug-induced deaths involving stimulants as the sole drug type, accounting for one-fifth (20.2%) of all unintentional drug-induced deaths involving stimulants.

The rates of unintentional drug-induced deaths involving stimulants are generally increasing in all states and territories (Figure 39).[63] The highest rate of death involving stimulants in 2022 occurred in Western Australia, increasing from 0.5 deaths per 100,000 population in 20002 to 3.8 deaths per 100,000 population in 2022.

[59] Australian Criminal Intelligence Commission (2023). *National Wastewater Drug Monitoring Program: report 19*.
[60] Australian Institute of Health and Welfare (2024). *National Drug Strategy Household Survey 2022-2023*.
[61] Australian Institute of Health and Welfare (2022). *Mental health-related prescriptions.*
[62] Martin, C., Harris, K., Wylie, C., & Isoardi, K. (2023). Rising prescription stimulant poisoning in Australia: a retrospective case series. *Toxicology Communications*, *7*(1), 2174689.
[63] Rates for these figures are calculated based on the Australian Bureau of Statistics' Estimated Resident Population data in each state or territory for the June quarter of each year.

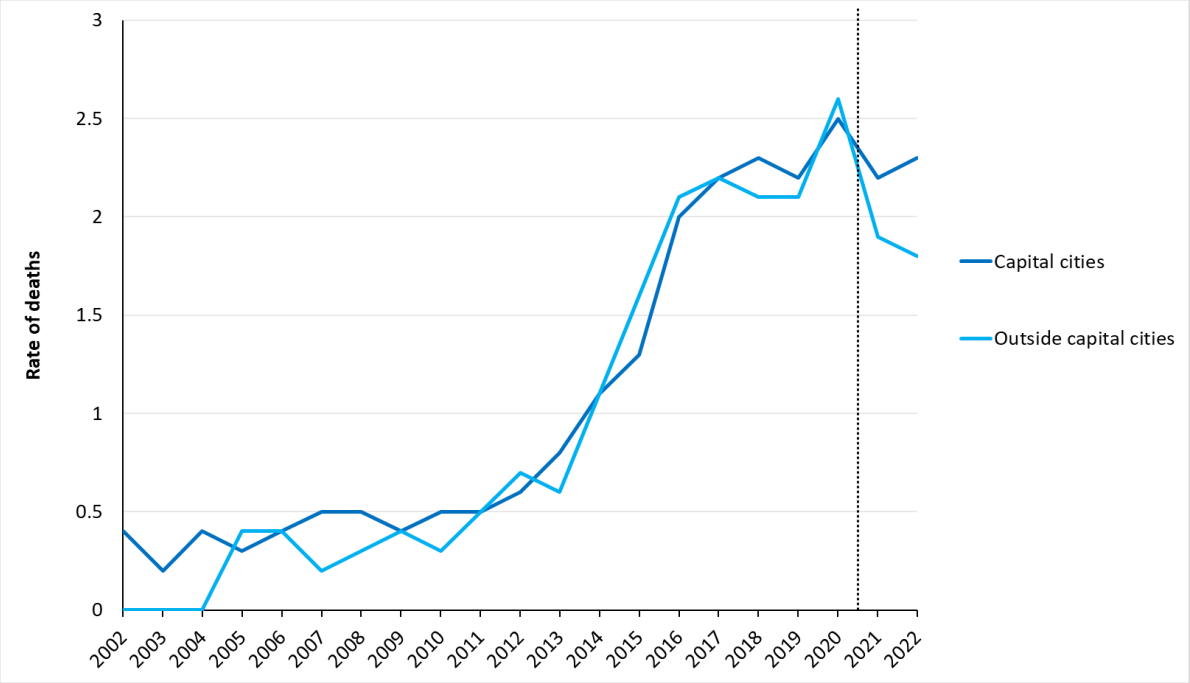
Figure 39. Unintentional drug-induced -deaths involving stimulants by state and territory, 2002-2022, rate per 100,000 population



Note: Data to the right of the dotted line (2021 and 2022 data) are preliminary, and likely to rise. Numbers of deaths cannot be reliably converted to rates per 100,000 in Tasmania, Northern Territory, and Australian Capital Territory due to low numbers and are therefore presented as an aggregate.

Unintentional drug-induced deaths involving stimulants are increasing both within and outside of capital cities (Figure 40). The rates for the two regions have been tracking closely since 2011, before beginning to diverge in 2021. From 2011 to 2022, the rates of unintentional drug-induced deaths involving stimulants increased within capital cities (from 0.5 to 2.3 deaths per 100,000 population) and outside of capital cities (from 0.5 to 1.8 deaths per 100,000).

Figure 40. Unintentional drug-induced deaths involving stimulants by regionality, 2002-2022, rate per 100,000 population

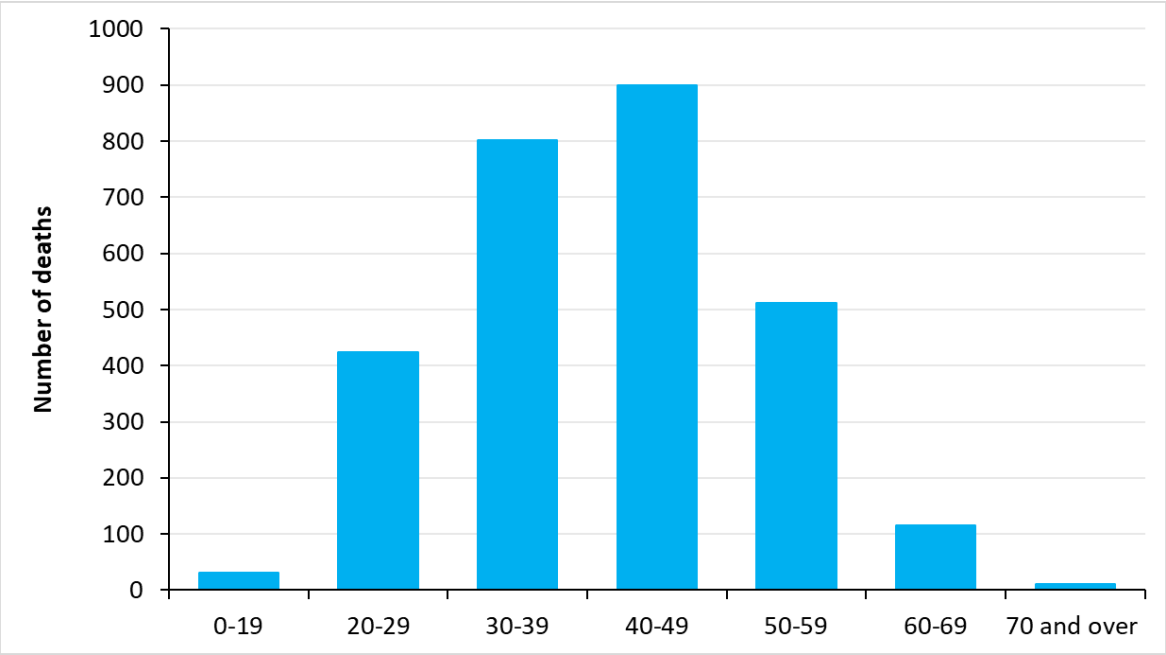


Note: Data to the right of the dotted line (2021 and 2022 data) are preliminary, and likely to rise.

The number of unintentional deaths involving stimulants over the period 2018 to 2022 was highest among people aged 40-49 (accounting for 27.14% of deaths involving stimulants), followed by people aged 30-39 (accounting for 24.18%), as shown in Figure 41.

While young people aged under 30 accounted for 13.74% of unintentional drug-induced deaths involving stimulants over the five years (with 455 such deaths), there were 638 such deaths among people aged 50 and older, representing almost one in five (19.26%) unintentional drug-induced deaths involving stimulants.

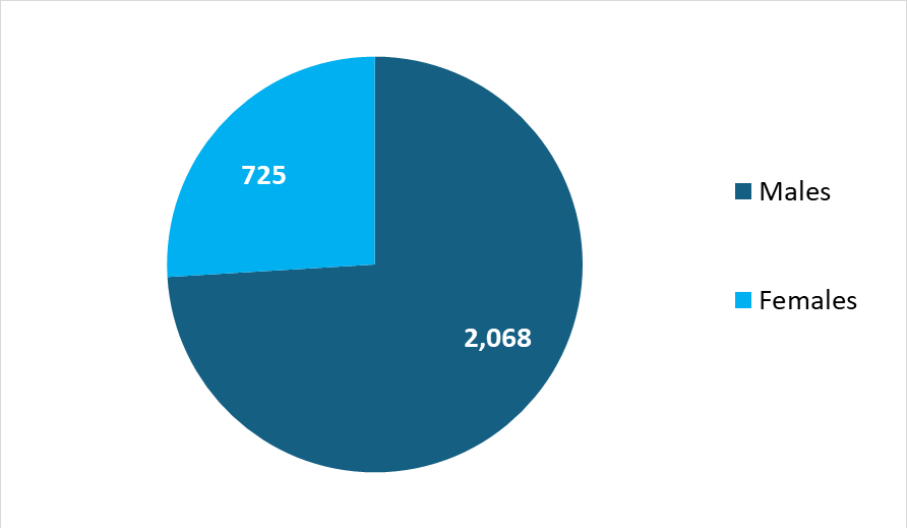
Figure 41. Number of unintentional drug-induced deaths involving stimulants by age group, 2018-2022



Note: Data are aggregated over the five-year period.

There were almost three times more unintentional drug related deaths involving stimulants among males (2,068 deaths) than among females (725 deaths) over the five-year period (Figure 42).

Figure 42. Number of unintentional drug-induced deaths involving stimulants by sex, 2018-2022



Note: Data are aggregated over the five-year period.

8.4. Alcohol

Key findings:

- Alcohol contributed to 19.6% of unintentional drug-induced deaths in 2022 (369 such deaths).
- The proportion of unintentional drug-induced deaths involving alcohol has remained relatively stable compared with other drug types, accounting for 17.9% of unintentional deaths in 2002 compared with 19.6% in 2022.
- From 2018-2022, there were 562 unintentional drug-induced deaths involving alcohol as the sole drug type, accounting for one third (30.1%) of all unintentional deaths involving alcohol.
- From 2018-2022, 61.7% of unintentional poly-substance deaths involving alcohol also involved benzodiazepines and 36.2% also involved anti-depressants.
- People aged 50 and over accounted for 38.9% of the unintentional deaths involving alcohol during the five years to 2022, while those aged under 30 accounted for 9.3% of these deaths.
- Males accounted for 71.8% of the unintentional drug-induced deaths involving alcohol during the five years to 2022.

Alcohol is a central nervous system depressant, and when mixed with other depressants in a poly-drug setting, can exacerbate effects and lead to respiratory depression (slow and/or ineffective breathing).[64]

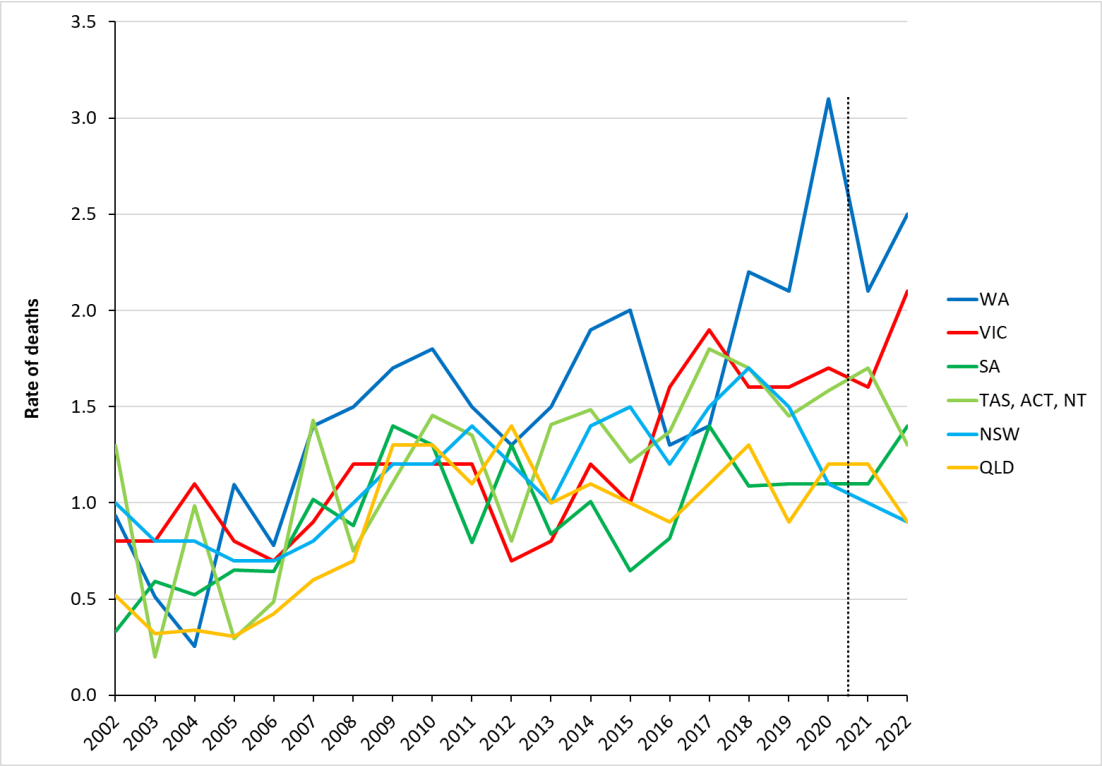
The consumption of alcohol is widespread in Australia. The 2022-2023 National Drug Strategy Household Survey found one in three (31%) of Australians aged 14 and over had consumed alcohol in ways that put their health at risk the previous 12 months.[65] From August 2020 to October 2022, Australians are estimated to have consumed 15 litres of ethanol per 1,000 people per day – or between approximately 1,100 to 1,250 standard drinks per 1,000 people per day.[66]

There were 369 unintentional drug-induced deaths involving alcohol in 2022, accounting for almost one-fifth (19.6%) of all unintentional drug-induced deaths, or 1.4 deaths per 100,000 population. Alcohol was the fourth-most common drug detected in these deaths in 2022.

[64] ABS (2018). *Drug induced deaths in Australia: A changing story*. Australian Bureau of Statistics.
[65] Australian Institute of Health and Welfare (2024). *National Drug Strategy Household Survey 2022-2023*.
[66] Australian Criminal Intelligence Commission (2023). *National Wastewater Drug Monitoring Program: report 19*.

As shown in Figure 43,[67] rates of unintentional drug-induced deaths involving alcohol have increased over time, particularly in Western Australia, where they have increased from 0.9 deaths per 100,000 population in 2002 to 2.5 deaths in 2022, and Victoria, which increased from 0.6 deaths per 100,000 in 2001 to 2.1 deaths per 100,000 in 2022. Earlier peaks and volatility in Tasmania, the Australian Capital Territory and the Northern Territory are likely due to small numbers being calculated as a rate with small populations and should be interpreted cautiously.

Figure 43. Unintentional drug-induced deaths involving alcohol by state and territory, 2002-2022, rate per 100,000 population

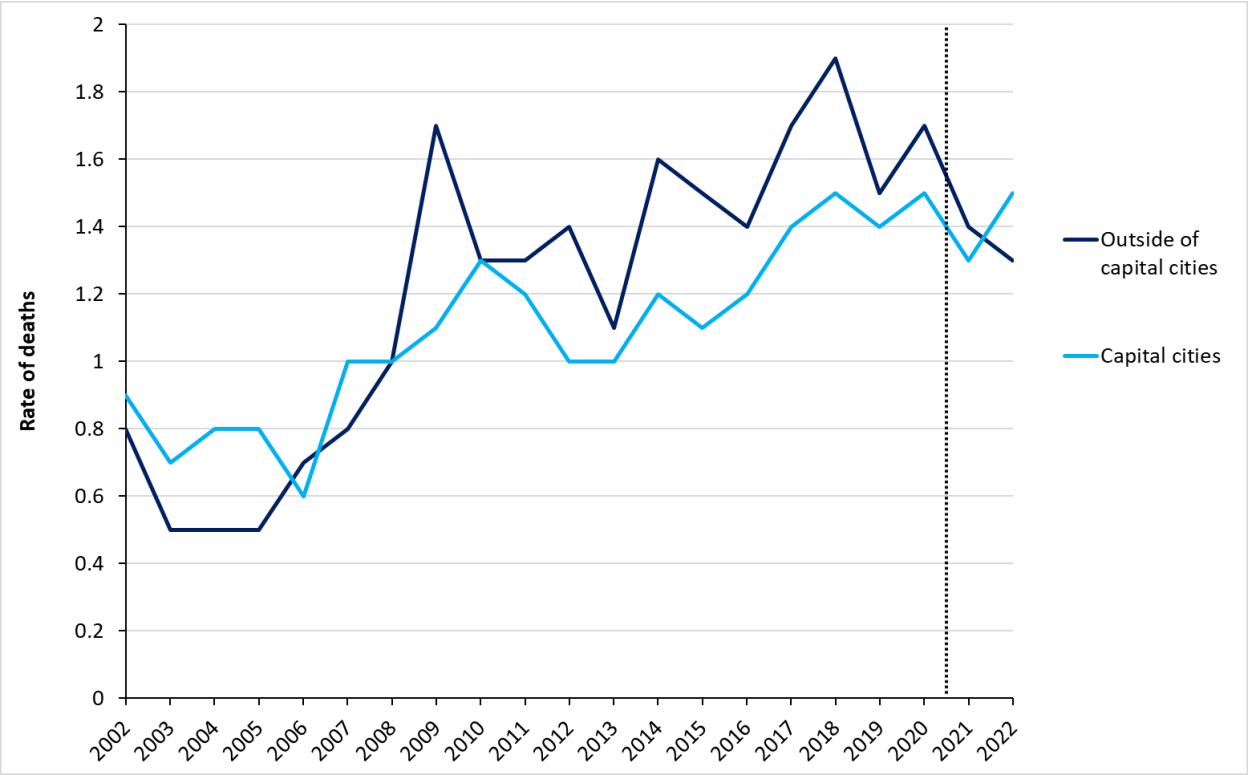


Note: Data right of the dotted line (2021 and 2022 data) are preliminary, and likely to rise. Numbers of deaths cannot be reliably converted to rates per 100,000 in Tasmania, Northern Territory, and Australian Capital Territory due to low numbers and are therefore presented as an aggregate.

[67] Rates for these figures are calculated based on the Australian Bureau of Statistics' Estimated Resident Population data in each state or territory for the June quarter of each year.

As shown in Figure 44, unintentional drug-induced deaths involving alcohol are increasing both within and outside of capital cities. In 2022, the rate of unintentional drug-induced deaths involving alcohol was 1.3 per 100,000 population outside of capital cities, and 1.5 per 100,000 population within capital cities. While preliminary data suggest the rate of deaths outside of capital cities has decreased following a peak of 1.9 deaths per 100,000 in 2018, rates are still substantially higher than in 2002.

Figure 44. Unintentional drug-induced deaths involving alcohol by regionality, 2002-2022, rate per 100,000 population

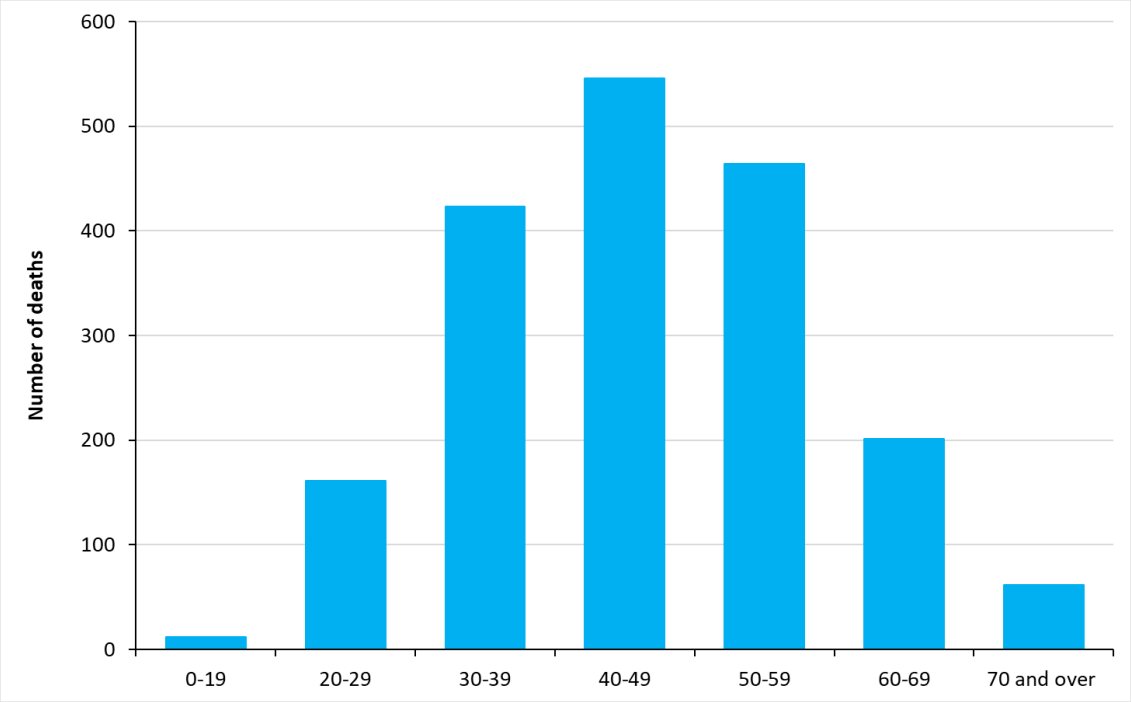


Note: Data to the right of the dotted line (2021 and 2022 data) are preliminary, and likely to rise.

Older age groups are more prevalent in unintentional drug-induced deaths involving alcohol compared with other drug types. As shown in Figure 49, the number of unintentional drug-induced deaths involving alcohol over the period 2018 to 2022 was highest among people aged 40-49 (546 deaths), who accounted for more than one-quarter (29.2%) of these deaths.

More than one-third (38.9%) of all unintentional drug-induced deaths involving alcohol during this period involved people aged 50 and above: 24.8% among the 50-59 age group (464 deaths) and 14.1% among people aged 60 and above (263 deaths). Deaths among people aged under 30 accounted for less than one in ten (9.3%) of the unintentional drug-induced deaths involving alcohol over the five-year period.

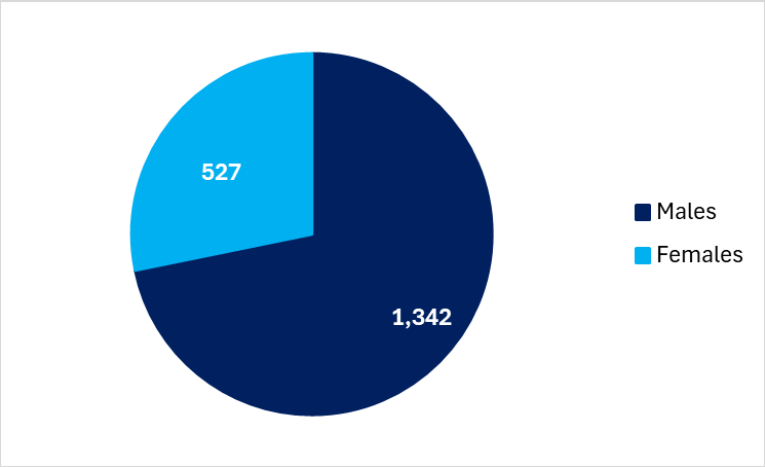
Figure 45. Number of unintentional drug-induced deaths involving alcohol by age group, 2018-2022



Note: Data are aggregated over the five-year period.

As with benzodiazepines and stimulants, males are far more likely than females to experience an unintentional drug-induced death involving alcohol. There were 1,342 deaths among males during the five-year period from 2018 to 2022, accounting for 71.8% of all such deaths, compared with 527 deaths among females (Figure 46).

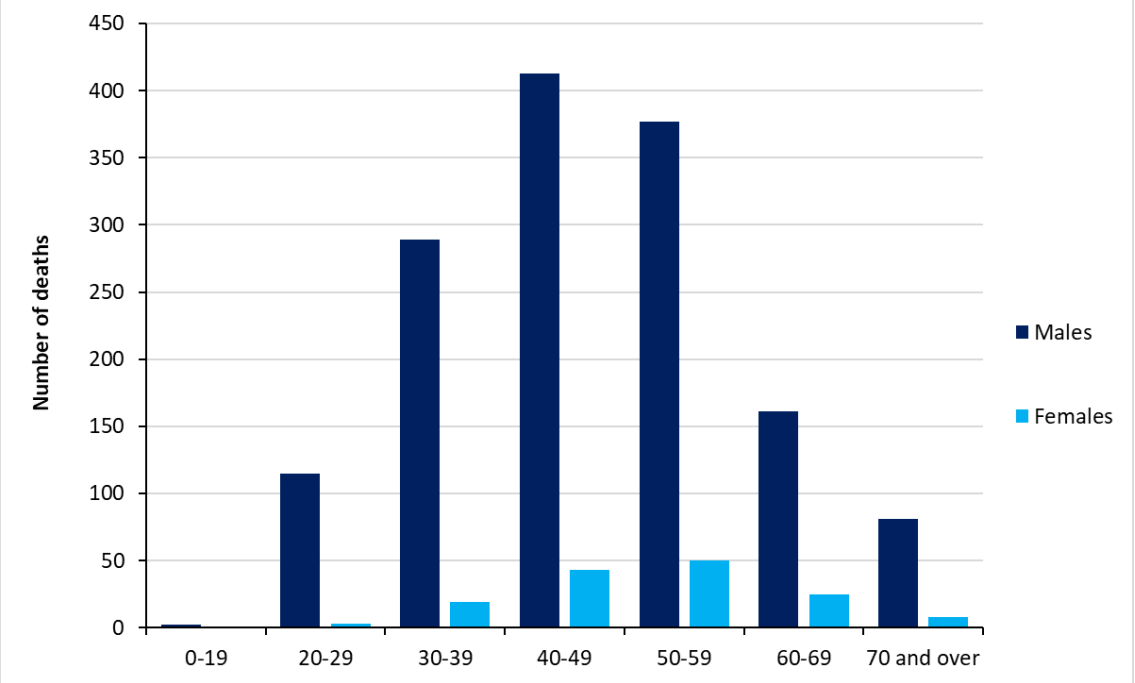
Figure 46. Number of unintentional drug-induced deaths involving alcohol by sex, 2018-2022



Note: Data are aggregated over the five-year period.

Alcohol has a substantially higher proportion of sole-drug deaths than all other drug types. In the five years to 2022, there were 562 unintentional drug-induced deaths involving alcohol as the sole drug type, accounting for more than one-quarter (30.1%) of all unintentional deaths involving alcohol. As shown in Figure 51, the age distribution of these deaths differs slightly between males and females. Among males, the number of unintentional drug-induced deaths involving alcohol alone was highest among the 40-49 (28.7% of such deaths or 413) and 50-59 (26.2% or 377 deaths) age groups. Among females, the number of unintentional drug-induced deaths involving alcohol alone was highest among those aged 50-59 (33.6% or 50 deaths), followed by those aged 40-49 (28.9% or 43 deaths).

Figure 47: Number of unintentional drug-induced deaths involving alcohol only, by age group and sex, 2018-2022



Note: Data are aggregated over the five-year period.

8.5. Anti-depressants

Key findings:

- Anti-depressants contributed to 19.2% of unintentional drug-induced deaths in 2022 (361 such deaths), increasing from 14.2% in 2002.
- From 2018-2022, there were 53 unintentional drug-induced deaths involving anti-depressants as the sole drug type, accounting for 2.6% of all unintentional drug-induced deaths involving anti-depressants.
- From 2018-2022, 71.8% of unintentional poly-substance deaths involving anti-depressants also involved benzodiazepines and 51.3% also involved pharmaceutical opioids.
- People aged 50 and over accounted for 36.8% of the unintentional deaths involving anti-depressants during the five years to 2022, while those aged under 30 accounted for 10.5% of these deaths.
- Males accounted for 56.0% of the unintentional drug-induced deaths involving anti-depressants during the five years to 2022.

Anti-depressants include tricyclic and tetracyclic anti-depressants, monoamine-oxidase-inhibitor anti-depressants, and other unspecified anti-depressants such as selective serotonin reuptake inhibitors.[68]

In 2021-22, approximately 32.7 million anti-depressant prescriptions were dispensed under the PBS, to 3.6 million patients, accounting for 73.7% of all mental health-related prescriptions dispensed nationwide. On average, the number of anti-depressant prescriptions dispensed has increased 4.4% annually from 22.1 million scripts in 2012-13. [69] While the average number of unintentional anti-depressant related deaths has increase an average 7.6% since 2002.

There were 361 unintentional drug-induced deaths involving anti-depressants in 2022, accounting for almost one fifth (19.2%) of all unintentional drug-induced deaths, or 1.4 deaths per 100,000 population. They were the fifth-most common drug detected in these deaths in 2022.

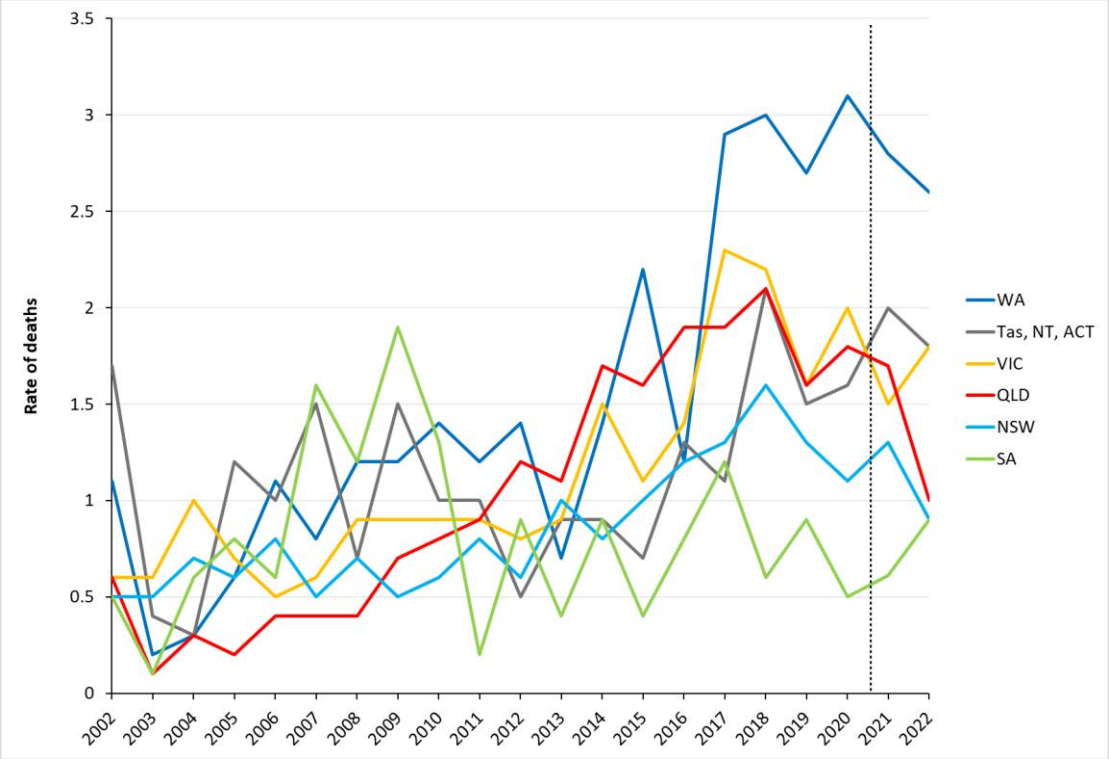
Unintentional drug-induced deaths involving anti-depressants generally occur in a poly-drug context. From 2018-2022, there were 53 unintentional drug-induced deaths involving anti-depressants as the

[68] Anti-depressants vary considerably in toxicity and in the rate of use in the community. However, the data do not allow disaggregation by specific class of anti-depressant.
[69] Australian Institute of Health and Welfare (2024). *Mental health-related prescriptions.*

sole drug type, accounting for 2.6% of all unintentional drug-induced deaths involving anti-depressants.

The rates of unintentional drug-induced deaths involving anti-depressants are highly variable across all states and territories, but appear to be increasing in Western Australia, which has more than doubled from 1.4 deaths per 100,000 population in 2012 to 2.6 in 2022 (Figure 48).[70]

Figure 48. Unintentional drug-induced deaths involving anti-depressants by state and territory, 2002-2022, rate per 100,000 population

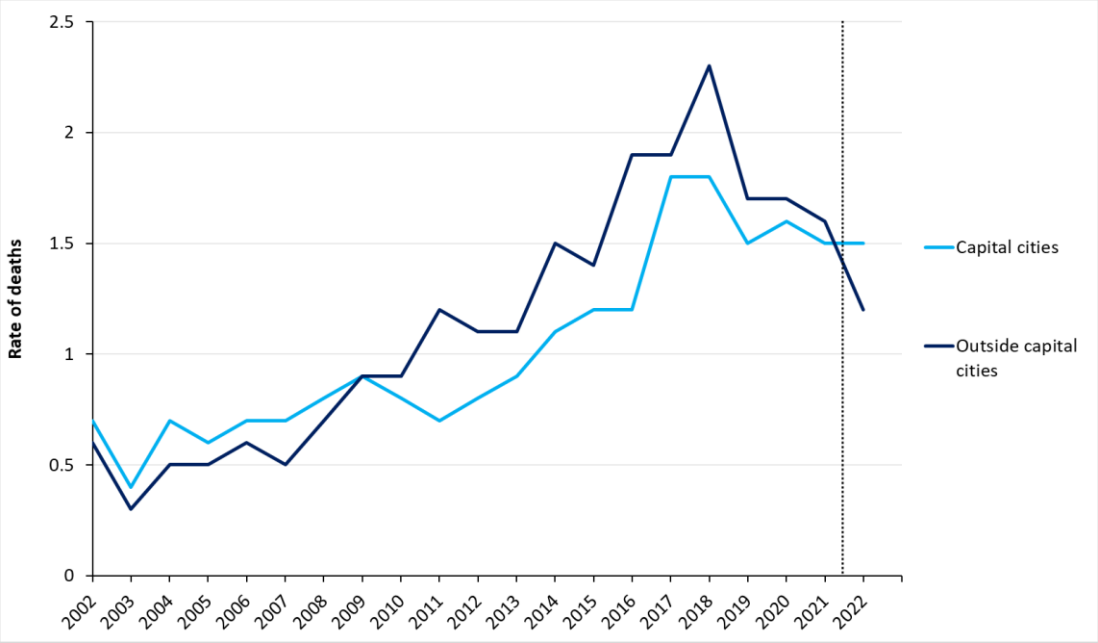


Note: Data to the right of the dotted line (2021 and 2022 data) are preliminary, and likely to rise. Numbers of deaths cannot be reliably converted to rates per 100,000 in Tasmania, Northern Territory, and Australian Capital Territory due to low numbers and are therefore presented as an aggregate.

[70] Rates for these figures are calculated based on the Australian Bureau of Statistics' Estimated Resident Population data in each state or territory for the June quarter of each year.

Unintentional drug-induced deaths involving anti-depressants have increased both within and outside of capital cities, tracking quite similarly over time (Figure 49). While capital cities had higher death rates from 2002 to 2008, rates of unintentional drug-induced deaths involving anti-depressants were higher outside of capital cities between 2010 and 2021. The rate of unintentional drug-induced deaths outside capital cities decreased from a high of 2.3 deaths per 100,000 population in 2018 to 1.2 in 2022, whereas in capital cities the rate decreased from 1.8 to 1.5 deaths per 100,000 population during this period.

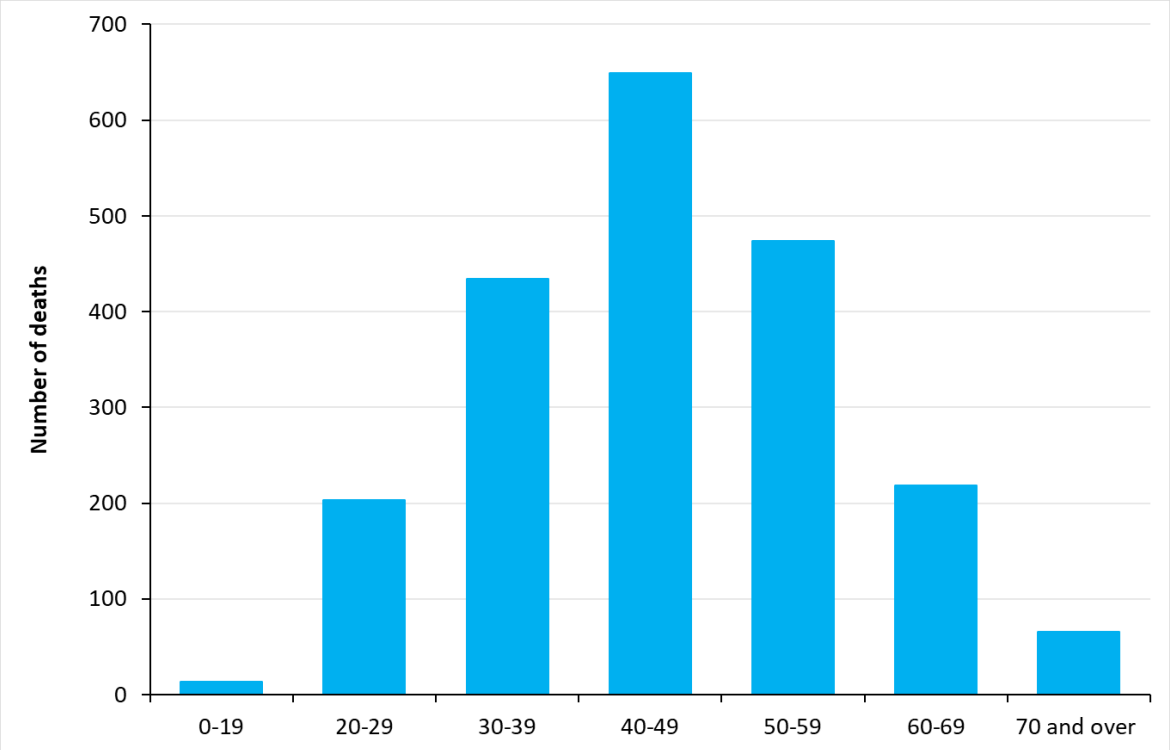
Figure 49. Unintentional drug-induced deaths involving anti-depressants by regionality, 2002-2022 rate per 100,000 population



Note: Data to the right of the dotted line (2021 and 2022 data) are preliminary, and likely to rise.

There is a slightly older age profile for unintentional drug-induced deaths involving anti-depressants than for those involving either benzodiazepines or stimulants. The number of unintentional deaths involving anti-depressants over the period 2018 to 2022 was highest among people aged 40-49 (649 deaths, accounting for 31.6% of deaths involving anti-depressants), followed by those aged 50-59 (474, or 23.0% of these deaths) and those aged 30-39 (434, 21.1% of these deaths). Approximately 13.8% of all unintentional deaths involving anti-depressants were observed among people aged 60 and over, as shown in Figure 50.

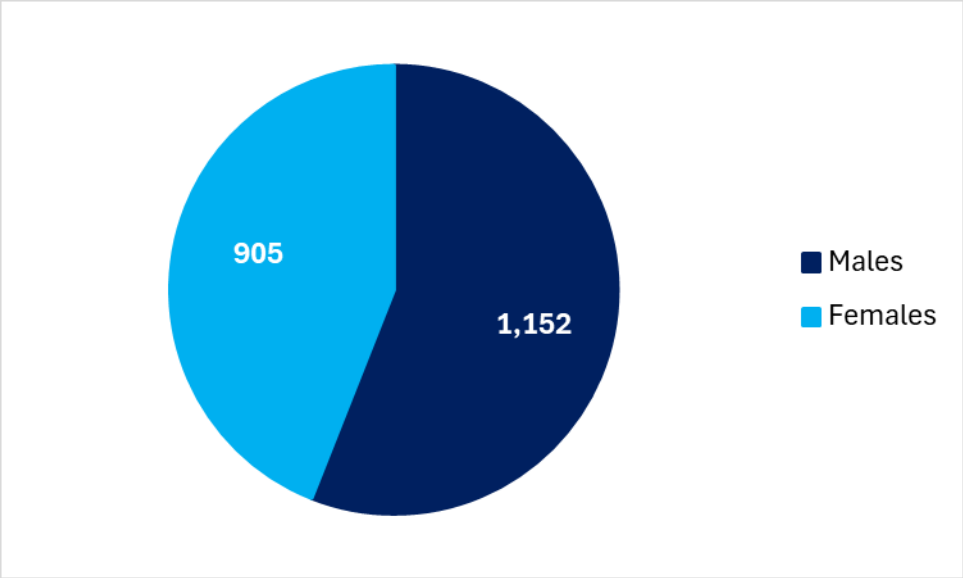
Figure 50. Number of unintentional drug-induced deaths involving anti-depressants by age group, 2018-2022



Note: Data are aggregated over the five-year period.

There is a more even sex distribution for unintentional drug-induced deaths involving anti-depressants than for those involving other drug types. There were 1,152 deaths among males during the five-year period from 2018 to 2022, accounting for 56.0% of all such deaths, compared with 905 deaths among females (Figure 51).

Figure 51. Number of unintentional drug-induced deaths involving anti-depressants by sex, 2018-2022



Note: Data are aggregated over the five-year period.

8.6. Anti-convulsants (and neuropathic pain modulators)

Key findings:

- Anti-convulsants and neuropathic pain modulators contributed to 12.8% of unintentional drug-induced deaths in 2022 (241 such deaths). This has increased from 0% in 2002 to 12.8% in 2022.
- From 2018-2022, there were only five unintentional drug-induced deaths involving anti-convulsants as the sole drug type, accounting for just 0.5% of all unintentional drug-induced deaths involving such drugs.
- From 2018-2022,73.9% of unintentional poly-substance deaths involving anti-convulsants and neuropathic pain modulators also involved benzodiazepines and 50.8% also involved anti-depressants.
- People aged 50 and over accounted for 32.2% of the unintentional deaths involving anti-convulsants and neuropathic pain modulators during the five years to 2022, while people aged under 30 accounted for 11.3% of these deaths.
- Males accounted for 60.5% of the unintentional deaths involving anti-convulsants and neuropathic pain modulators during the five years to 2022.

This group of drugs includes pregabalin and gabapentin. Pregabalin is more commonly prescribed in Australia than gabapentin, and prescribing rates for pregabalin have increased considerably.[71] As some of these anti-convulsants (including pregabalin and gabapentin) were rarely prescribed for the treatment of neuropathic pain before 2012, and rates of deaths were low, data are only presented from 2012 onwards. Although these drugs are classified in the raw data as anti-convulsants, the drugs from this group that are associated with the majority of deaths are commonly prescribed for chronic neuropathic pain and, more commonly, off-label for a range of pain conditions.

In 2021-22, approximately 4.2 million prescriptions for anti-convulsants were dispensed under the PBS to more than 630,000 patients; pregabalin accounted for 96% of these prescriptions. There were 13,877 prescriptions dispensed per 100,000 population for the year, compared with 1,725 prescriptions per 100,000 population in 2012-13. This increase is primarily due to pregabalin prescribing.[72] Research suggests there has been an increase in non-prescribed use of pregabalin in

[71] Australian Institute of Health and Welfare (2024). *Alcohol, tobacco & other drugs in Australia: Pharmaceuticals.*
[72] Australian Institute of Health and Welfare (2024). *Alcohol, tobacco & other drugs in Australia: Pharmaceuticals.*

Australia.[73] In these cases, pregabalin is typically consumed along with other depressants, increasing the risk of respiratory depression and overdose. It is estimated that one in seven Australians prescribed pregabalin has a high risk of misuse.[74]

While the overall number of unintentional drug-induced deaths involving anti-convulsants is low (241 deaths or 1.0 death per 100,000 population in 2022, representing 12.8% of all unintentional drug-induced deaths), the number has increased markedly since 2015 (Figure 52). Indeed, between 2002 and 2014, there were no more than four unintentional deaths involving anti-convulsants each year. In 2015 this increased to 12 deaths, before rising to 112 deaths in 2017, 184 deaths in 2019 and reaching a high of 253 in 2021, before decreasing to 241 in 2022.

This change has been driven by rapid increases in Western Australia (with 1.9 deaths per 100,000 population in 2022), Victoria (with 1.1 deaths per 100,000 population in 2022) and Queensland (with 1.0 death per 100,000 population in 2022).[75] It is possible, however, that an increase has also been occurring in other jurisdictions, but that different practices regarding routine post-mortem toxicological testing mean that such a change has not been detected.

Despite the observed increases in some jurisdictions in the rate of unintentional drug-induced deaths involving anti-convulsants, the death rate remains far lower than for other drug types.

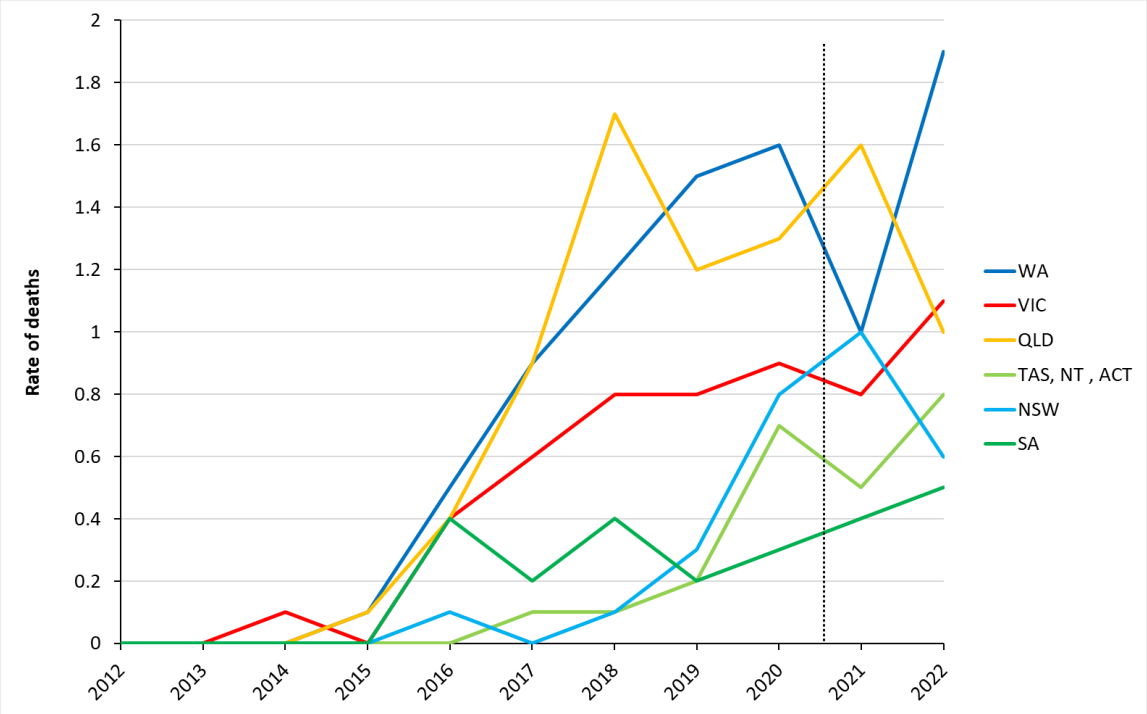
Deaths involving anti-convulsants generally occur in the context of poly-drug use. In the five years to 2022, there were only five unintentional drug-induced deaths involving anti-convulsants as the sole drug type, accounting for just 0.5% of all unintentional drug-induced deaths involving such drugs.

[73] Isoardi, K. Z., Polkinghorne, G., Harris, K., & Isbister, G. K. (2020). Pregabalin poisoning and rising recreational use: a retrospective observational series. *British Journal of Clinical Pharmacology*, *86*(12), 2435-2440; Sutherland, R., Dietze, P. M., Gisev, N., Bruno, R., Campbell, G., Memedovic, S., & Peacock, A. (2020). Patterns and correlates of prescribed and non-prescribed pregabalin use among a sample of people who inject drugs in Australia. *Drug and Alcohol Review*, *39*(5), 568-574.

[74] Cairns, R., Schaffer, A. L., Ryan, N., Pearson, S.-A., & Buckley, N. A. (2018). Rising pregabalin use and misuse in Australia: trends in utilisation and intentional poisonings. *Addiction, 114* (6), 1026-1034.

[75] Rates for these figures are calculated based on the Australian Bureau of Statistics' Estimated Resident Population data in each state or territory for the June quarter of each year.

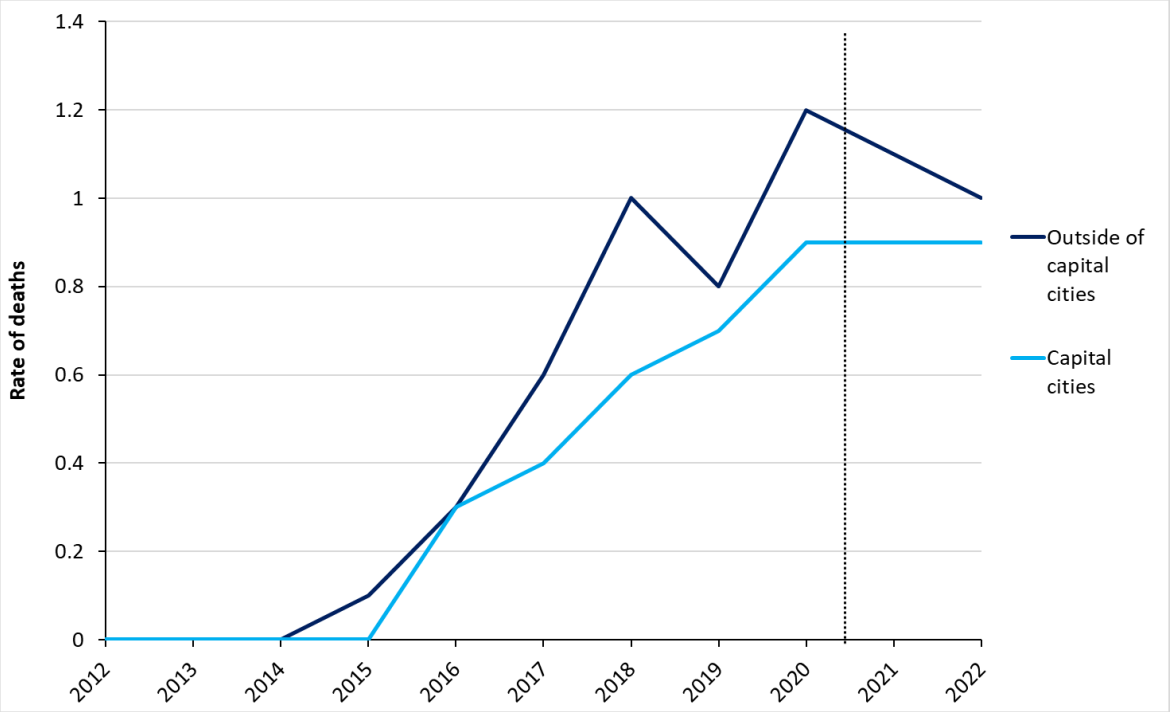
Figure 52. Unintentional drug-induced deaths involving anti-convulsants by state, 2012-2022, rate per 100,000 population



Note: Data to the right of the dotted line (2021 and 2022 data) are preliminary, and likely to rise. Numbers of deaths cannot be reliably converted to rates per 100,000 in Tasmania, Northern Territory, and Australian Capital Territory due to low numbers and are therefore presented as an aggregate.

The increase in unintentional drug-induced deaths involving anti-convulsants since 2015 has occurred in both the capital cities and outside of capital cities (Figure 53). The rate of deaths prior to 2015 was zero in both metropolitan and regional / rural areas; in 2022 the rate of deaths was 0.9 per 100,000 population in capital cities and 1.0 outside of capital cities. While the rate itself is low, the increase is dramatic.

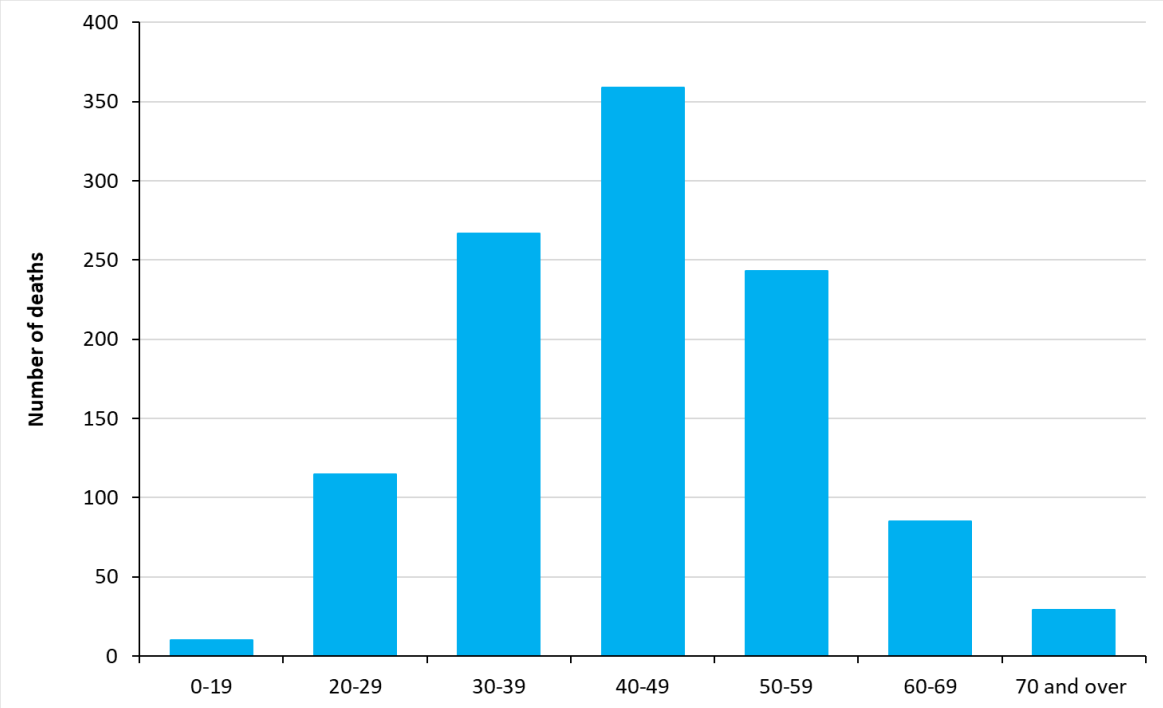
Figure 53. Unintentional drug-induced deaths involving anti-convulsants by regionality, 2012-2022, rate per 100,000 population



Note: Data to the right of the dotted line (2021 and 2022 data) are preliminary, and likely to rise.

The number of unintentional drug-induced deaths involving anti-convulsants over the period 2018 to 2022 was highest among people aged 40-49, who accounted for more than one-third (32.4%) of these deaths. Almost one in four of all unintentional deaths involving anti-convulsants (24.1%) were seen among those aged 30-39, while about one-third (32.2%) deaths were recorded among people aged 50 and over. Deaths among people aged under 30 accounted for 11.3% of the unintentional drug-induced deaths involving anti-convulsants over the five-year period (Figure 54).

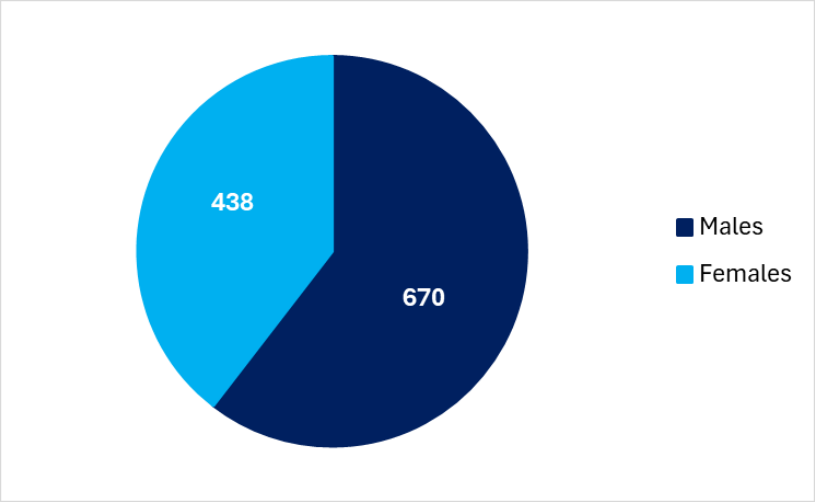
Figure 54. Number of unintentional drug-induced deaths involving anti-convulsants by age group, 2018-2022



Note: Data are aggregated over the five-year period.

There is a less uneven sex distribution for unintentional drug-induced deaths involving anti-convulsants than for those involving other drug types. There were 670 deaths among males during the five-year period from 2018 to 2022, accounting for two thirds (60.5%) of these deaths, compared with 438 deaths among females (Figure 55).

Figure 55. Number of unintentional drug-induced deaths involving anti-convulsants by sex, 2018-2022



Note: Data are aggregated over the five-year period.

8.7. Anti-psychotics

Key findings:

- Anti-psychotics contributed to 10.3% of unintentional drug-induced deaths in 2022 (193 such deaths). This increased from 0.6% in 2002 to 10.3% in 2022.
- From 2018-2022, there were 33 unintentional drug-induced deaths involving anti-psychotics as the sole drug type, accounting for 2.9% of all unintentional drug-induced deaths involving such drugs.
- From 2018-2022, 72.6% of unintentional poly-substance deaths involving anti-psychotics also involved benzodiazepines, 51.6% also involved anti-depressants, and 43.1% also involved pharmaceutical opioids.
- People aged 50 and above accounted for 28.7% of the unintentional deaths involving anti-psychotics during the five years to 2022, while people aged under 30 accounted for 10.3% of these deaths.
- Males accounted for 63.3% of the unintentional deaths involving anti-psychotics during the five years to 2022.

This group includes drugs such as quetiapine, olanzapine, risperidone, paliperidone, amisulpride, and lithium.

Anti-psychotics account for approximately one in ten (10.1%) mental health-related prescriptions dispensed in Australia under the PBS. In 2021-22, approximately 4.3 million anti-psychotic prescriptions were dispensed to over 493,000 patients nationwide.[76] Reports have emerged of increased extra-medical use of anti-psychotic drugs (particularly quetiapine) in Australia.[77]

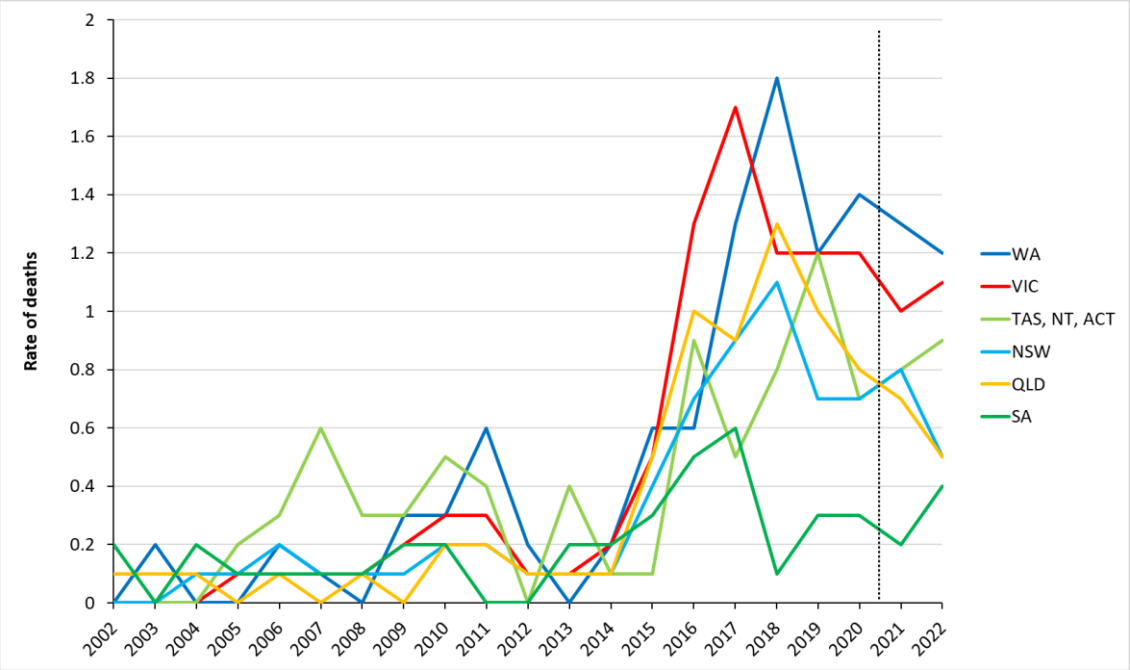
There were 193 unintentional drug-induced deaths involving anti-psychotics in 2022, representing 10.3% of all unintentional drug-induced deaths, or 0.8 deaths per 100,000 population. Deaths involving anti-psychotics generally occur in the context of poly-drug use. In the five years to 2022, there were 33 unintentional drug-induced deaths involving anti-psychotics as the sole drug type, accounting for 2.9% of all unintentional drug-induced deaths involving such drugs.

[76] Australian Institute of Health and Welfare (2024). *Mental health-related prescriptions.*
[77] Sutherland, R., Jayathilake, R., Peacock, A., Dietze, P., Bruno, R., Reddel, S., & Gisev, N. (2021). Trends and characteristics of extra-medical use of quetiapine among people who regularly inject drugs in Australia, 2011–2018. *Drug and Alcohol Dependence*, *221*, 108636; Lee, J., Pilgrim, J., Gerostamoulos, D., Robinson, J., & Wong, A. (2018). Increasing rates of quetiapine overdose, misuse, and mortality in Victoria, Australia. *Drug and Alcohol Dependence*, *187*, 95-99.

Rates of unintentional drug-induced deaths involving anti-psychotics have increased since 2013 (Figure 56),[78] particularly in Western Australia, which has increased from zero deaths in 2013 to 1.2 deaths per 100,000 population in 2022, and Victoria, which increased from 0.1 deaths per 100,000 in 2013 to 1.1 deaths per 100,000 in 2021. Earlier peaks and volatility in Tasmania, the Australian Capital Territory and the Northern Territory are likely due to small numbers being calculated as a rate with small populations, and should be interpreted cautiously.

These increases may reflect increases in the total number of prescriptions. In Australia, prescription numbers for anti-psychotics increased considerably from 2011 to 2015.[79]

Figure 56. Unintentional drug-induced deaths involving anti-psychotics by state, 2002-2022, rate per 100,000 population

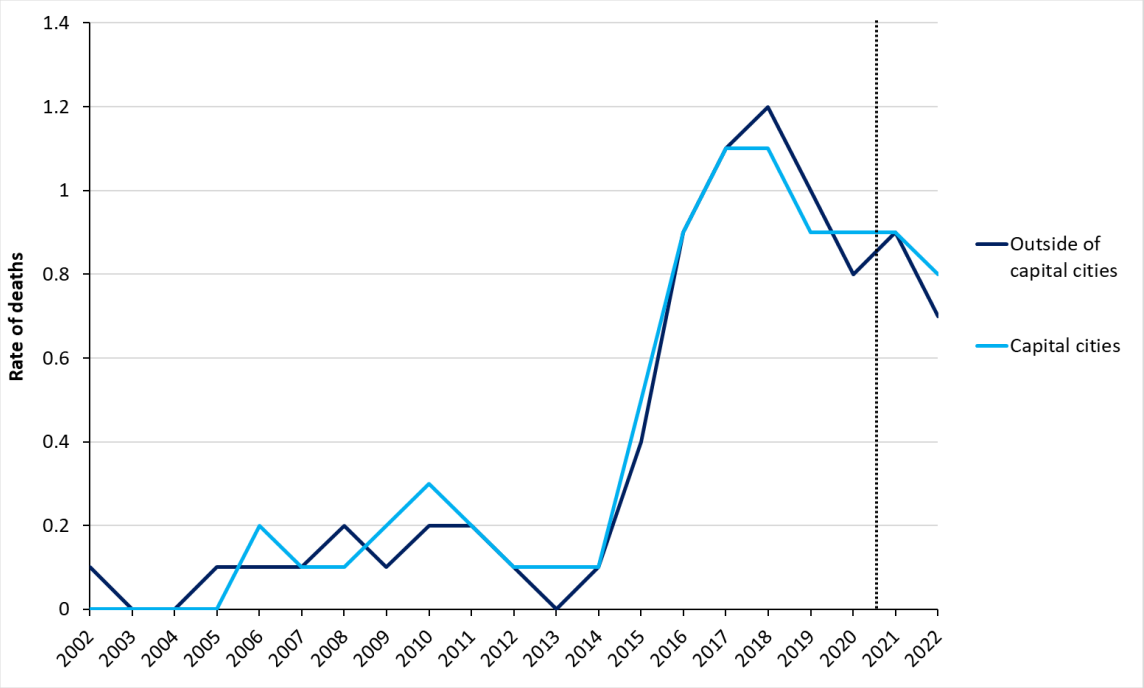


Note: Data to the right of the dotted line (2021 and 2022 data) are preliminary, and likely to rise. Numbers of deaths cannot be reliably converted to rates per 100,000 in Tasmania, Northern Territory, and Australian Capital Territory due to low numbers and are therefore presented as an aggregate.

[78] Rates for these figures are calculated based on the Australian Bureau of Statistics' Estimated Resident Population data in each state or territory for the June quarter of each year.
[79] Pharmaceutical Benefits Scheme (2016) *Anti-psychotic medicines: 24 month review of quetiapine 25 mg.*

The increase in unintentional drug-induced deaths involving anti-psychotics since 2014 has occurred in both the capital cities and outside capital cities (Figure 57). The rate of deaths has increased from 0.1 deaths per 100,000 population in 2002 to 0.7 deaths per 100,000 population outside of capital cities and to 0.8 deaths per 100,000 population in capital cities.

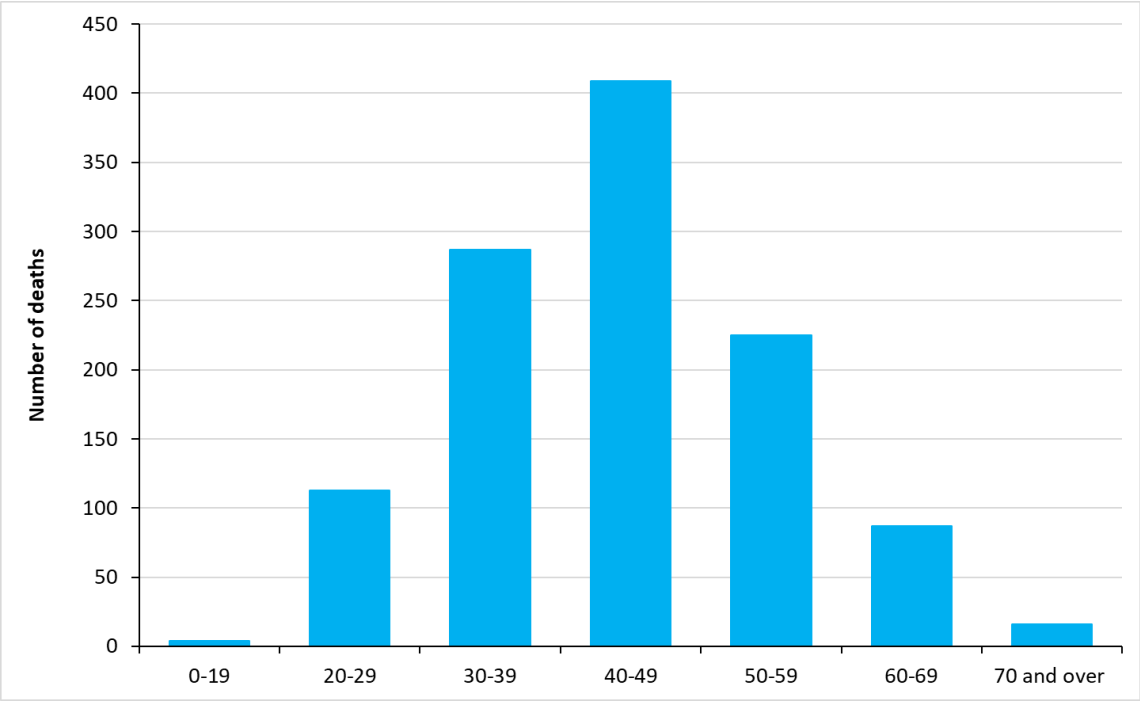
Figure 57. Unintentional drug-induced deaths involving anti-psychotics by regionality, 2002-2022, rate per 100,000 population



Note: Data to the right of the dotted line (2021 and 2022 data) are preliminary, and likely to rise.

The number of unintentional drug-induced deaths involving anti-psychotics over the period 2018 to 2022 was highest among people aged 40-49 (409 deaths), who accounted for more than one-third (35.8%) of these deaths. People aged 30-39 were second highest (25.2%) and people aged 50 and over accounted for almost one-third of deaths involving anti-psychotics (28.7%). Deaths among people aged under 30 accounted for 10.3% of all unintentional drug-induced deaths involving anti-psychotics over the five-year period (Figure 58).

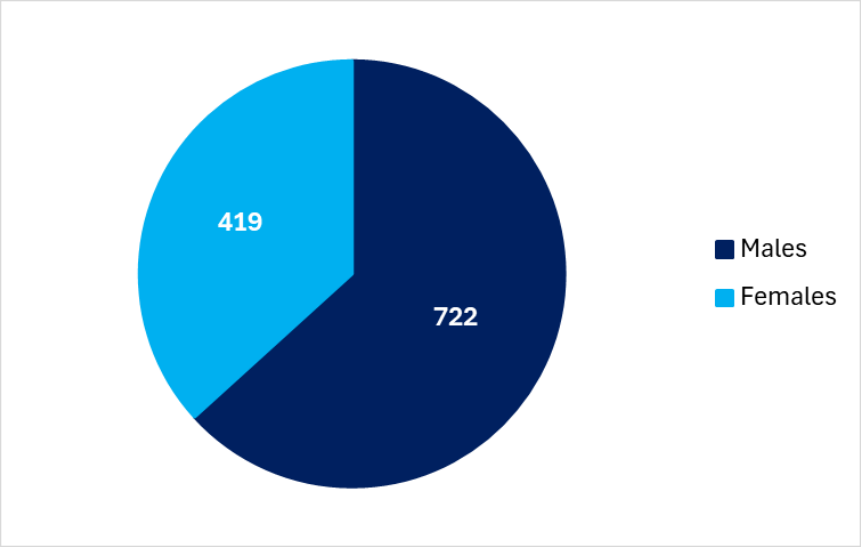
Figure 58. Number of unintentional drug-induced deaths involving anti-psychotics by age group, 2018-2022



Note: Data are aggregated over the five-year period.

As with anti-depressants and anti-convulsants, there is a less uneven sex distribution for unintentional drug-induced deaths involving anti-psychotics than for those involving other drug types. There were 722 deaths among males during the five-year period from 2018 to 2022, accounting for 63.3% of all such deaths, compared with 419 deaths among females (Figure 59).

Figure 59. Number of unintentional drug-induced deaths involving anti-psychotics by sex, 2018-2022



Note: Data are aggregated over the five-year period.

8.8. Cannabinoids

Key findings:

- Drug-induced deaths involving cannabinoids alone were almost all due to synthetic cannabinoids, with a small proportion of deaths involving natural cannabinoids.
- Cannabinoids contributed to 11.3% of unintentional drug-induced deaths in 2022 (212 such deaths).
- The proportion of unintentional drug-induced deaths involving cannabinoids has increased from 2.9% in 2002 to 11.3% in 2022.
- From 2018-2022, there were 12 such deaths involving cannabinoids as the sole drug type (all of which were synthetic cannabinoid receptor agonists, accounting for 1.7% of all unintentional drug-induced deaths involving cannabinoids.
- From 2018-2022, 65.0% of unintentional poly-substance deaths involving cannabinoids also involved benzodiazepines, 45.4% also involved stimulants and 39.9% involved pharmaceutical opioids.
- People aged 50 and above accounted for 24.9% of the unintentional deaths involving cannabinoids during the five years to 2022, while those aged under 30 accounted for 17.3% of these deaths.
- Males accounted for 75.0% of the unintentional drug-induced deaths involving cannabinoids during the five years to 2022.

Cannabinoids includes phyto-cannabinoids (natural plants or drugs containing chemical compounds that act upon the brain's cannabinoid receptors), as well as synthetic cannabinoid receptor agonists (SCRAs). Cannabinoids are the most consumed illicit drug type in Australia.[80]

In 2022-23, at least one in ten (11.5%) Australians reported using cannabinoids in the past 12 months for either medical or non-medical purposes.[81] Australia's National Wastewater Analysis Program estimates that Australians consumed more than 1,000 mg (or more than 100 doses) of THC per 1,000 people, per day, from August 2020 to December 2023.[82] It is important to note that

[80] Australian Criminal Intelligence Commission (2024). *National Wastewater Drug Monitoring Program: Report 19.* Canberra: ACIC.
[81] Australian Institute of Health and Welfare (2020). *National Drug Strategy Household Survey 2022-23*.
[82] Australian Criminal Intelligence Commission (2023). *National Wastewater Drug Monitoring Program: Report 19.* Canberra: ACIC.

wastewater analysis cannot distinguish between cannabis medicines and illicit cannabinoids. The use of medicinal cannabis products has increased dramatically in Australia since 2018.[83]

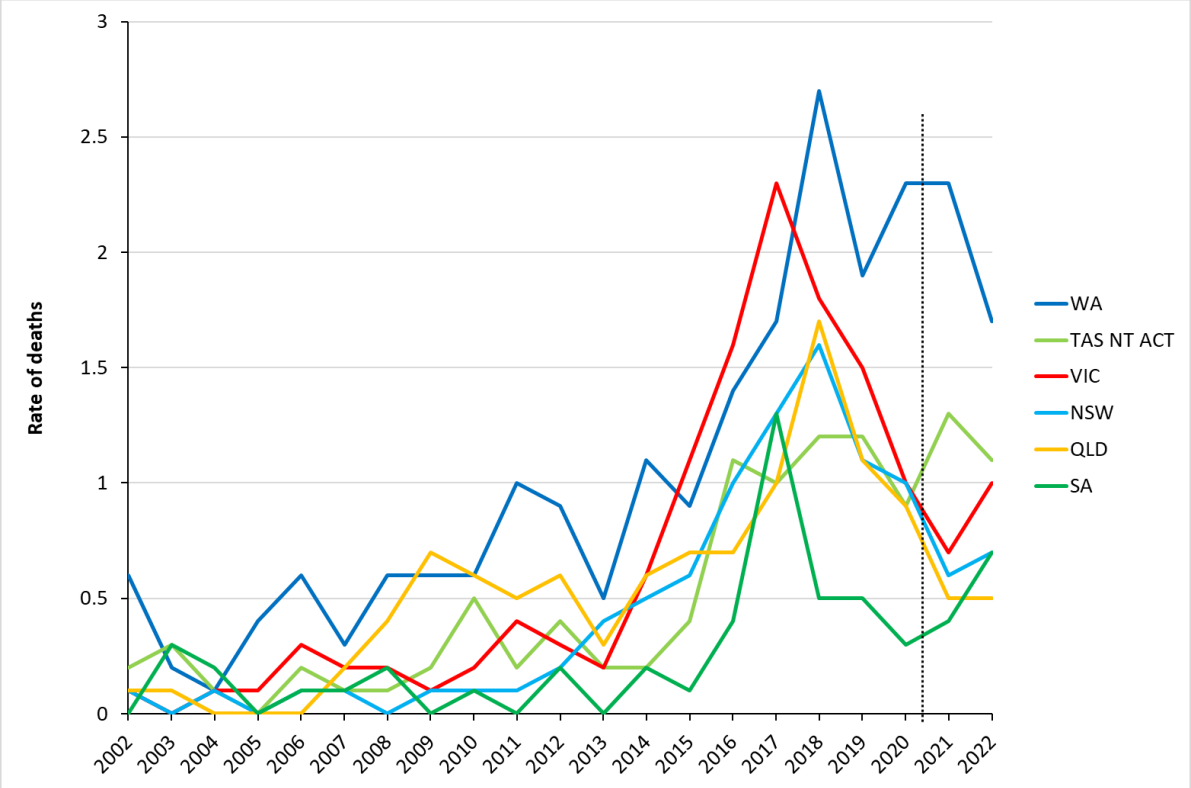
Natural phyto-cannabinoids such as THC likely contribute very little to the toxicity that causes death and are extremely unlikely to cause death by themselves. Synthetic cannabinoid receptor agonists, however, are far more toxic.[84] Indeed, for drug-induced deaths since 2014 in which cannabinoids were the only drug type detected, the majority of deaths were due to SCRAs (over 80% of the 12 deaths recorded 2002-2022).[85] All were among men aged 15-54.

There were 212 unintentional drug-induced deaths involving cannabinoids in 2022, accounting for 11.3% of all unintentional drug-induced deaths, or 8.4 deaths per 100,000 population. Cannabinoids were the seventh-most commonly detected drug in these deaths in 2022.

The rates of unintentional drug-induced deaths involving cannabinoids have increased in all states and territories since 2013, particularly in Western Australia, which increased from 0.6 deaths per 100,000 in 2002 to 1.7 deaths per 100,000 population in 2022 and Tasmania/Northern Territory/Australian Capital Territory, which increased from 0.2 deaths per 100,000 population to 1.1 in 2022 (Figure 60).[86]

[83] Therapeutic Goods Administration (2021). Medicinal cannabis Special Access Scheme Category B data. Accessed July 20, 2023.
[84] Cohen, K. and Weinstein, A.M. (2018). Synthetic and non-synthetic cannabinoid drugs and their adverse effects: A review from a public health perspective. *Frontiers in Public Health*, 6: 162.
[85] With the addition of 2022 data as well as revisions to previous years, there are now a small number of deaths in the dataset involving natural cannabinoids on their own. Recent research highlights the association between a positive blood concentration of THC and cardiac-related or cerebovascualr sudden deaths. See Drummer, O.H., Gerostamoulos, D. and Woodford, N.W. (2019). Cannabis as a cause of death: A review. *Forensic Science International*, 298: 298-306.
[86] Rates for these figures are calculated based on the Australian Bureau of Statistics' Estimated Resident Population data in each state or territory for the June quarter of each year.

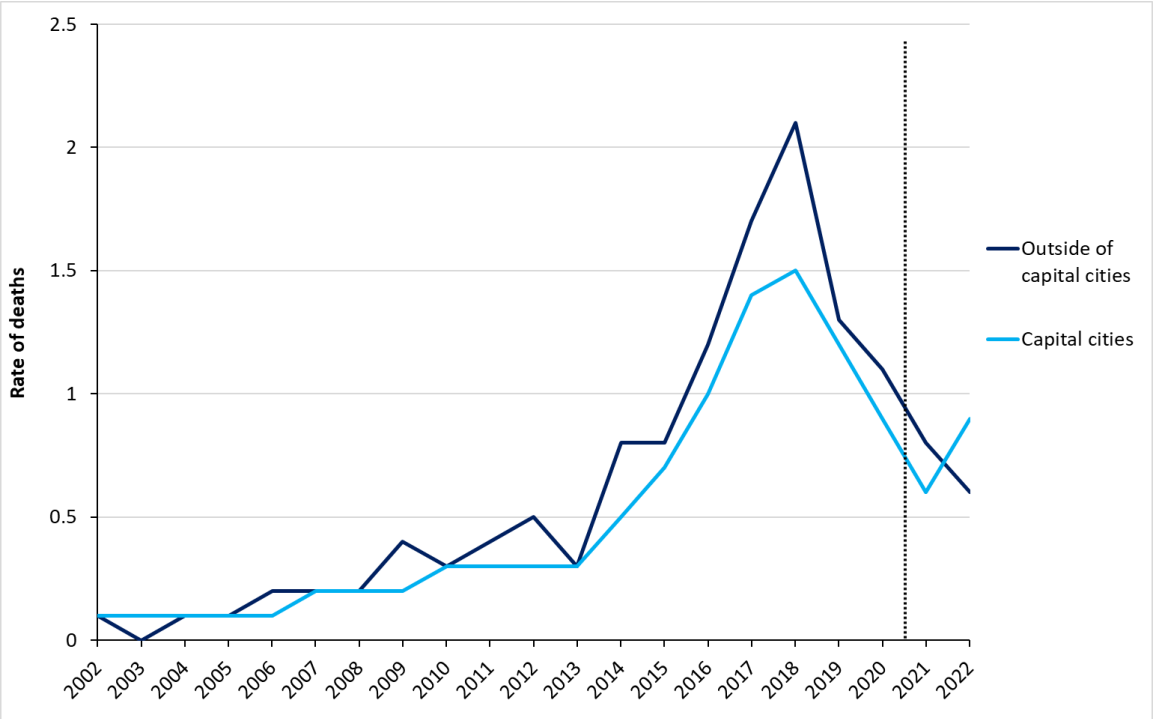
Figure 60. Unintentional drug-induced deaths involving cannabinoids by state and territory, 2002-2022, rate per 100,000 population



Note: Data to the right of the dotted line (2021 and 2022 data) are preliminary, and likely to rise. Numbers of deaths cannot be reliably converted to rates per 100,000 in Tasmania, Northern Territory, and Australian Capital Territory due to low numbers and are therefore presented as an aggregate.

Rates of unintentional drug-induced deaths involving cannabinoids have increased both within and outside of capital cities, particularly in the years since 2013 (Figure 61). The rates in the two regions diverged in 2017 and 2018, before converging once again in 2019 and decreasing from their earlier peak. Preliminary data in 2022 indicate the rates have once again started to diverge: there were 0.9 deaths per 100,000 population in capital cities and 0.6 deaths per 100,000 population in the area outside capital cities.

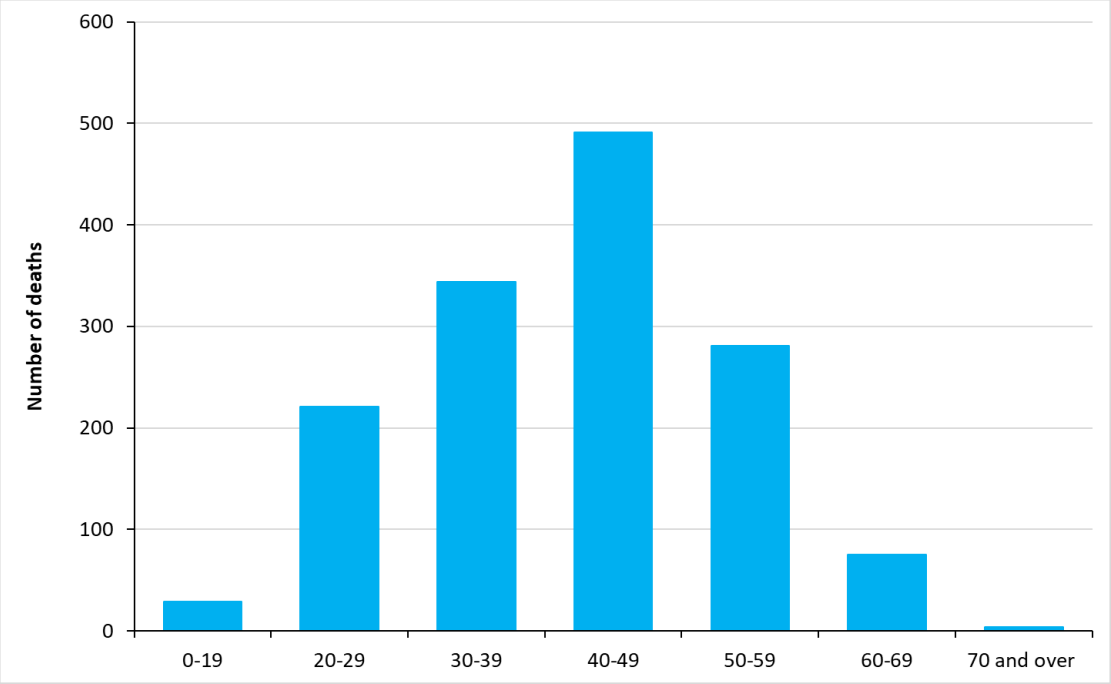
Figure 61. Unintentional drug-induced deaths involving cannabinoids by regionality, 2002-2022, rate per 100,000 population



Note: Data to the right of the dotted line (2021 and 2022 data) are preliminary, and likely to rise.

The number of unintentional drug-induced deaths involving cannabinoids over the period 2018 to 2022 was highest among people aged 40-49 (491 deaths), who accounted for more than one-third (34.0%) of these deaths. Approximately one-quarter of unintentional deaths involving cannabinoids (24.9%) were recorded among people aged 50 and over and among those aged 30-39 (23.8%). Deaths among people aged under 30 accounted for 17.3% of the unintentional drug-induced deaths involving cannabinoids over the five-year period (Figure 62).

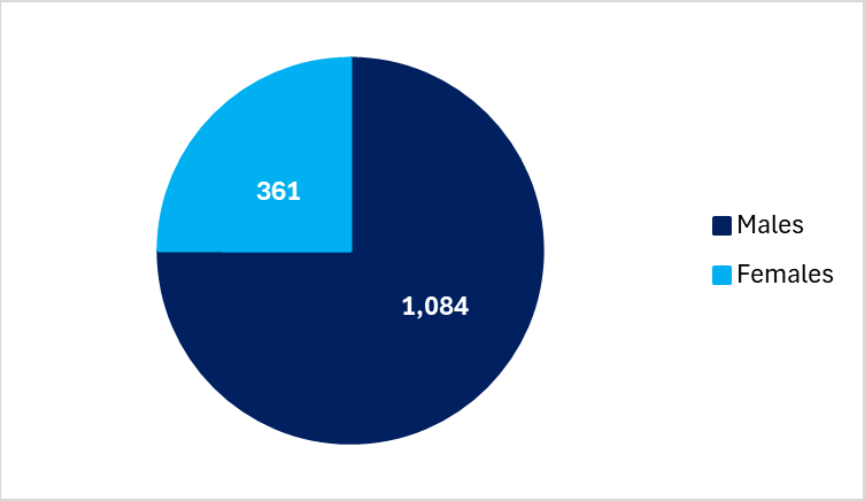
Figure 62. Number of unintentional drug-induced deaths involving cannabinoids by age group, 2018-2022



Note: Data are aggregated over the five-year period.

As with benzodiazepines and stimulants, males are far more likely than females to experience an unintentional drug-induced death involving cannabinoids. There were 1,084 deaths among males during the five-year period from 2018 to 2022, accounting for 75.0% of all such deaths, compared with 361 deaths among females (Figure 63).

Figure 63. Number of unintentional drug-induced deaths involving cannabinoids by sex, 2018-2022



Note: Data are aggregated over the five-year period.

Unintentional drug-induced deaths involving cannabinoids vary according to whether the drug *contributed* towards drug toxicity or was simply *present* at the time of death. In the four years to 2022, the number of unintentional drug-induced deaths in which cannabinoids contributed to the death has more than halved, from 180 deaths in 2019 to 58 deaths in 2022 (Table 10). During the same period, the number of unintentional drug-induced deaths in which cannabinoids were present – but did not contribute to the overdose death – has increased from 52 deaths in 2019 to 176 in 2022.

Table 10. Drug-induced deaths: Cannabinoids contributing to toxicity versus cannabinoids present in a drug-induced death, 2019-2022

Underlying cause of death	2019	2020	2021	2022
Unintentional drug-induced death with cannabinoids contributing to toxicity[87]	180	98	89	58
Unintentional drug-induced death with cannabinoids present[88]	52	213	156	176

[87] This includes unintentional drug-induced deaths classified under ICD-10-CM Code T40.7 (poisoning by, adverse effect of and underdosing of cannabis and its derivatives). Cannabinoids were a contributing factor to toxicity among these deaths.

[88] This includes unintentional drug-induced deaths classified under ICD-10-CM Code R.783 (finding of hallucinogen in blood). Whilst present, cannabinoids were not a contributing factor towards toxicity among these deaths.

9. Geographical trends

This chapter presents data on unintentional drug-induced deaths by geographical variables including state, capital city classification, public health network, and local areas (Statistical Area, SA3). Detailed data are provided for New South Wales and Victoria, with less information presented for Queensland and Western Australia due to smaller numbers that do not allow for a more detailed analysis. Tasmania, South Australia, Australian Capital Territory and the Northern Territory were not able to be analysed due to small numbers. However, Table 19 provides data for all states and territories, with data aggregated into 5-year blocks, to provide sufficient numbers for reliable calculation of rates.

9.1. New South Wales

Since 2010, regional and rural New South Wales has had a higher rate of unintentional drug-induced deaths than Greater Sydney, with 7.7 deaths per 100,000 population in regional and rural NSW in 2022 compared with 5.9 in Sydney (Figure 64).

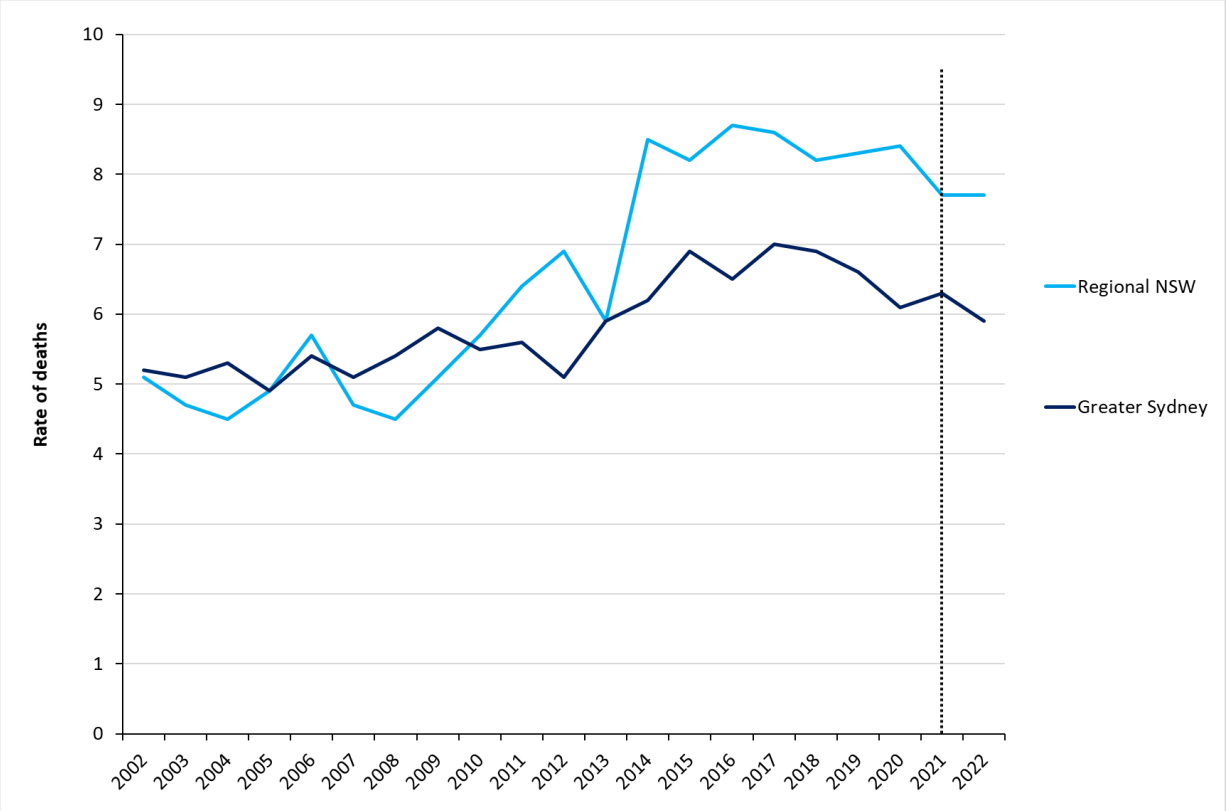
In Greater Sydney, the rate of unintentional drug-induced deaths is highest for stimulants (1.6 deaths per 100,000 population in 2022), followed closely by 'other pharmaceuticals' (1.5 deaths per 100,0000) and benzodiazepines (1.5 deaths per 100,000 population; Figure 65A).

In regional and rural New South Wales, 'other pharmaceuticals' have surpassed stimulants and benzodiazepines to have the highest rate of unintentional drug-induced deaths in 2022 (1.9 deaths per 100,000 population for other pharmaceuticals, compared with 1.8 deaths for stimulants and 1.7 deaths for benzodiazepines) (Figure 65B).

Rates in regional and rural New South Wales are higher than those observed in Sydney for most of these drug types, with one exception: rates for unintentional drug-induced deaths involving heroin are higher in Greater Sydney (1.4 deaths per 100,000 population in Greater Sydney compared to 0.9 deaths outside Sydney).

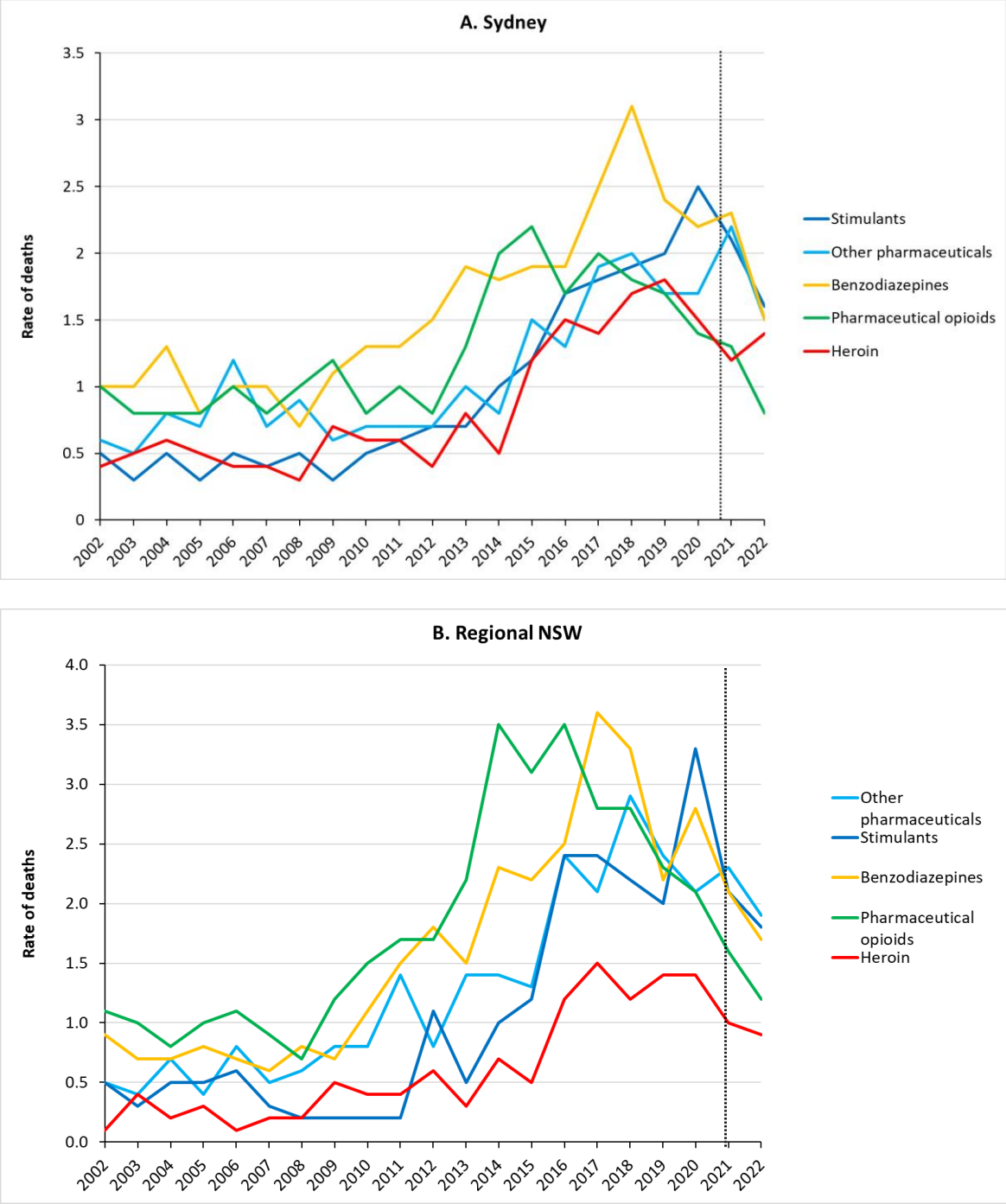
These data are shown as numbers, rather than rates per 100,000 population, in Table 11 and Table 12.

Figure 64. Unintentional drug-induced deaths by regionality in New South Wales, 2002-2022, rate per 100,000 population



Note: Data to the right of the dotted line (2021 and 2022 data) are preliminary, and likely to rise.

Figure 65. Unintentional drug-induced deaths by drug type in greater Sydney and regional NSW, 2002-2022, rate per 100,000 population



Note: Data to the right of the dotted line (2021 and 2022 data) are preliminary, and likely to rise.

Table 11. Number of unintentional drug-induced deaths by drug group, Sydney, 2002-2022

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Stimulants	22	14	22	12	21	16	21	14	22	29	31	36	46	58	86	93	96	103	130	109	82
Benzodiazepines	25	23	35	31	53	31	41	28	31	30	34	46	37	75	66	94	101	90	91	115	81
Other pharmaceuticals	42	43	55	35	43	45	33	49	62	61	71	90	85	96	97	128	156	123	115	120	79
Heroin	17	23	25	23	18	20	14	34	28	28	21	37	25	59	77	72	86	96	79	62	73
Alcohol	46	38	45	34	28	43	51	44	57	61	51	55	56	60	48	71	80	68	55	40	45
Pharmaceutical opioids	43	35	33	33	41	34	45	57	39	45	39	64	95	109	88	101	92	91	76	71	43
Cannabinoids	1	4	3	3	2	3	4	1	6	2	7	15	22	26	37	56	67	52	49	44	34

Table 12. Number of unintentional drug-induced deaths by drug group, regional NSW, 2002-2022

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Other pharmaceuticals	12	9	17	9	19	13	15	18	21	33	20	35	35	33	62	54	72	59	53	60	50
Stimulants	7	5	5	10	12	7	5	4	5	6	24	10	23	27	53	55	51	47	79	50	46
Benzodiazepines	20	14	16	18	15	13	17	16	27	35	41	37	58	54	60	86	80	54	68	55	45
Pharmaceutical opioids	24	21	18	24	25	23	17	28	36	40	39	53	86	76	83	68	71	58	52	43	34
Alcohol	21	10	7	13	21	14	17	34	26	36	32	19	46	50	45	38	47	43	36	41	30
Heroin	3	8	5	7	3	6	5	11	8	8	13	4	17	11	28	37	28	36	36	24	25
Cannabinoids	2	0	5	1	2	2	4	4	4	4	6	11	14	16	34	37	45	30	30	18	21

9.2. Victoria

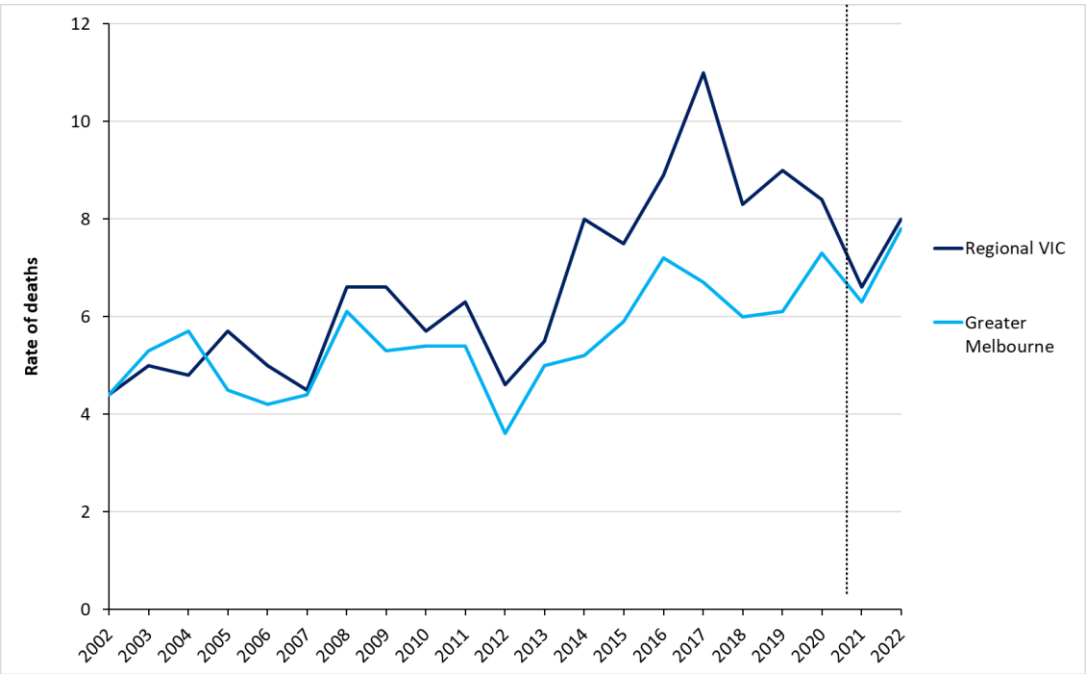
Since 2005, regional and rural Victoria has had a higher rate of unintentional drug-induced deaths than Melbourne (Figure 66).

This gap had widened, with a greater increase since 2011 observed in regional and rural Victoria; however, rates across the two regions have converged in recent years. In 2022, the rate of unintentional drug-induced deaths in regional and rural Victoria was 8.0 per 100,000 population, compared with 7.8 for Greater Melbourne.

In Melbourne, the two drug types with the highest rates of involvement in unintentional drug-induced deaths in 2022 were benzodiazepines (with a rate of 3.7 deaths per 100,000 population) and heroin (with 3.2 deaths per 100,000 population) (Figure 67A). In regional and rural Victoria, benzodiazepines had the highest rate of unintentional death in 2022 (3.6 deaths per 100,000 population), followed by other pharmaceuticals (3.4 deaths per 100,000 population). All drug types have increased substantially since 2007 in regional Victoria (Figure 67B). The steep increase in the death rate from other pharmaceuticals seen in regional and rural Victoria since 2013 is more pronounced than that seen in Melbourne.

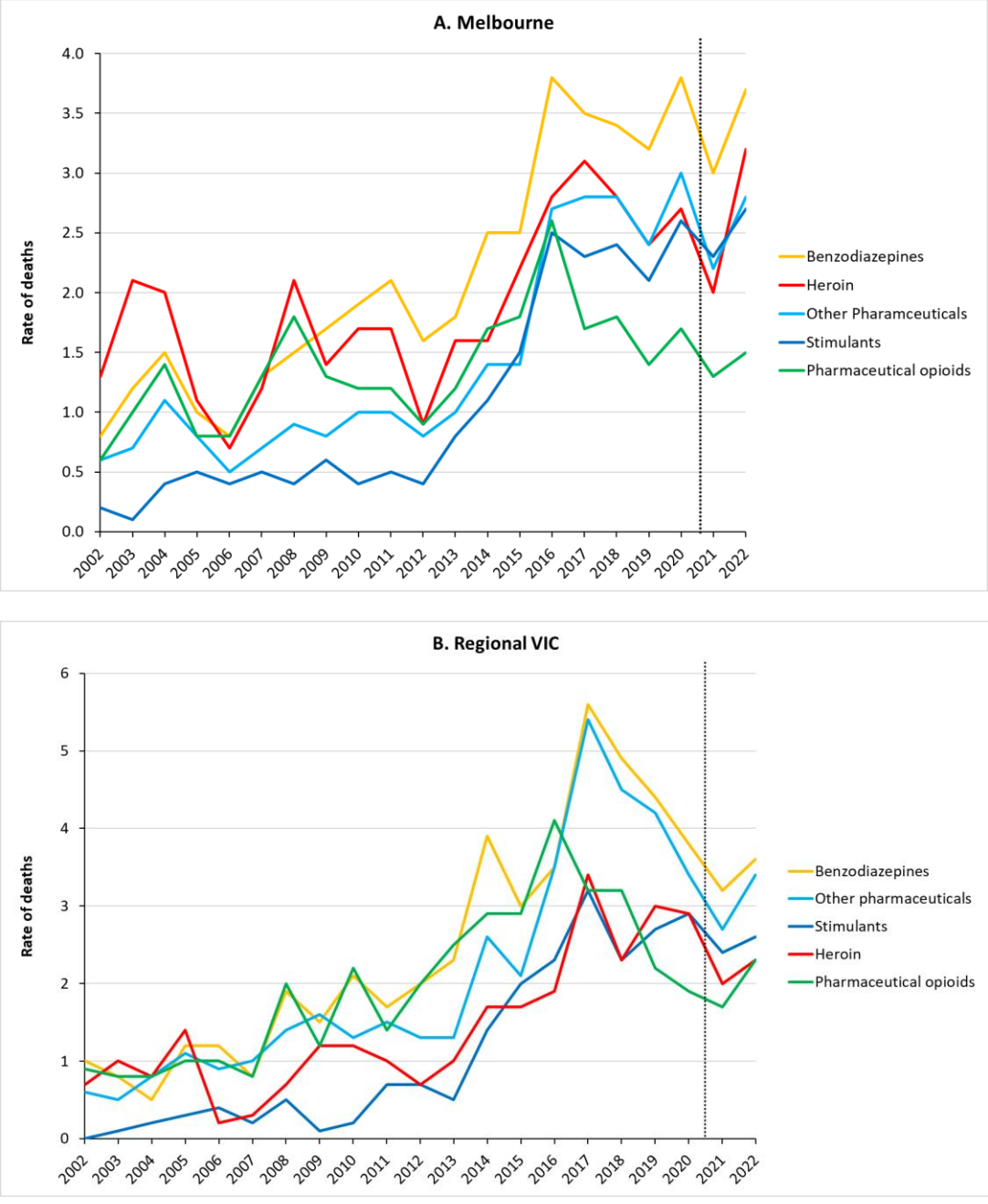
In 2022, rates of unintentional drug-induced deaths were higher in regional and rural Victoria than Melbourne for pharmaceutical opioids and other pharmaceuticals, though the overall numbers (presented in Table 13 and Table 14) were higher in Melbourne.

Figure 66. Unintentional drug-induced deaths by regionality in Victoria, 2002-2022, rate per 100,000 population



Note: Data to the right of the dotted line (2021 and 2022 data) are preliminary, and likely to rise.

Figure 67. Unintentional drug-induced deaths by drug type in greater Melbourne and regional Victoria, 2002-2022, rate per 100,000 population



Note: Data to the right of the dotted line (2021 and 2022 data) are preliminary, and likely to rise.

Table 13. Number of unintentional drug-induced deaths by drug group, Melbourne, 2002-2022

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Benzodiazepines	31	44	56	38	32	51	62	70	79	89	69	81	111	113	176	170	165	161	192	148	188
Heroin	50	78	74	42	27	46	86	59	70	70	40	70	69	101	128	146	137	121	140	100	161
Other Pharmaceuticals	22	26	41	28	20	27	37	34	42	41	36	46	62	66	125	136	135	118	151	111	145
Stimulants	9	5	15	19	15	20	17	23	19	20	18	36	47	67	118	112	119	102	132	117	136
Alcohol	30	32	45	33	27	40	47	47	52	55	28	31	53	43	76	72	69	75	83	81	99
Pharmaceutical opioids	22	36	51	31	32	51	74	55	51	51	39	51	78	83	124	80	87	71	83	64	78
Cannabinoids	1	0	2	1	5	5	7	4	7	15	8	10	18	50	67	90	75	59	48	47	52

Table 14. Number of unintentional drug-induced deaths by drug group, regional Victoria, 2002-2022

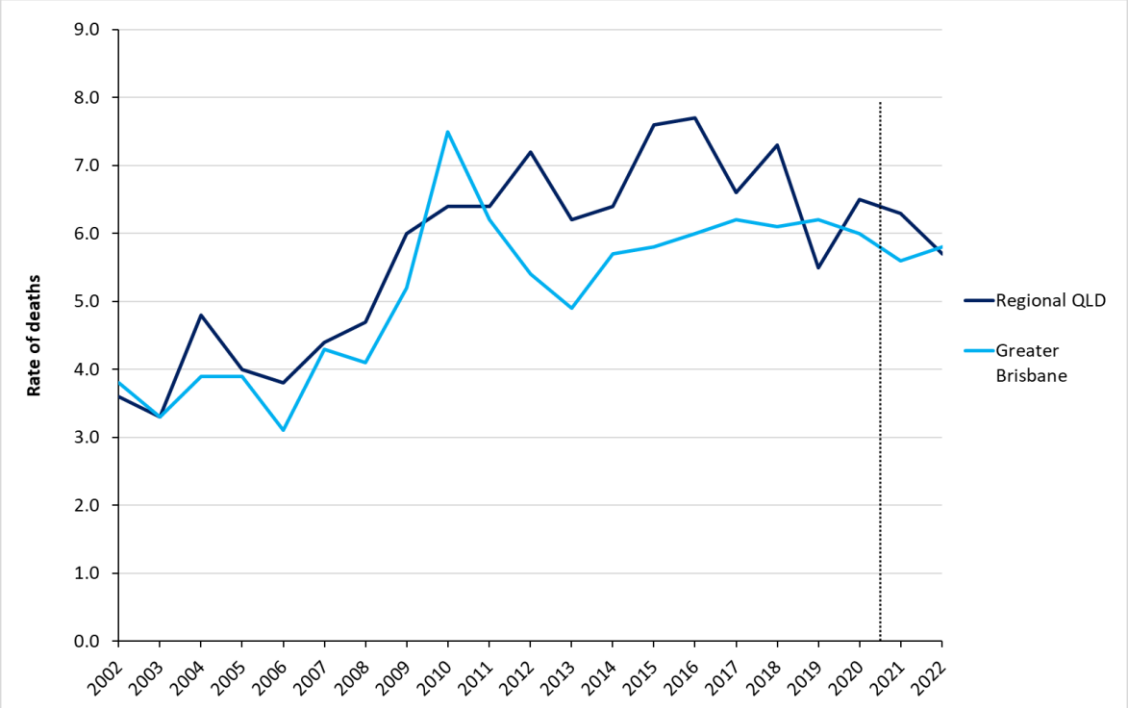
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Benzodiazepines	11	9	6	14	14	9	22	18	25	20	23	27	49	37	45	72	66	59	53	46	54
Other pharmaceuticals	7	6	9	13	12	11	18	19	15	19	16	16	33	26	46	72	61	55	47	40	50
Stimulants	0	1	2	4	5	2	7	1	3	8	2	7	16	24	28	40	29	35	37	32	36
Pharmaceutical opioids	10	9	10	12	12	9	24	15	28	17	24	31	37	36	54	43	43	31	27	25	36
Alcohol	6	6	8	8	8	8	13	18	15	11	13	16	17	15	19	46	30	30	35	21	34
Heroin	8	11	9	16	2	4	8	13	13	11	8	9	22	18	25	43	29	40	40	29	32
Cannabinoids	0	0	4	2	8	2	1	2	5	6	7	3	13	15	24	44	35	33	19	21	7

9.3. Queensland

Regional and rural Queensland had higher rates of unintentional drug-induced deaths than Greater Brisbane from 2011 until a reversal in 2019, when regional Queensland had a rate of 5.5 deaths per 100,000 population, while Brisbane had a rate of 6.2 deaths per 100,000 population (Figure 68). Preliminary data from 2022 suggest the rate of death in Brisbane has surpassed that recorded in Brisbane once more. In 2022, the rate of deaths in regional Queensland was 5.7 deaths per 100,000 population, compared with 5.8 deaths per 100,000 population in Brisbane. The difference between the capital city and regional / rural areas in Queensland follows the same pattern of convergence in 2022 as New South Wales and Victoria. There appears to be an overall levelling off, or even a decline in unintentional drug-induced deaths – particularly in Brisbane – from 2010 onwards, though rates are still higher than those observed from 2003 to 2007.

This section does not include data as a rate per 100,000 for different drug types, because relatively low numbers in some drug groups for regional and rural Queensland makes calculation of rates less reliable. Numbers, however, are presented in Table 15 and Table 16.

Figure 68. Unintentional drug-induced deaths by regionality in Queensland, 2002-2022, rate per 100,000 population



Note: Data to the right of the dotted line (2021 and 2022 data) are preliminary, and likely to rise.

Table 15. Number of unintentional drug-induced deaths by drug group, Greater Brisbane, 2002-2022

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Other pharmaceuticals	8	3	7	4	13	11	6	15	15	14	17	23	42	38	56	62	77	76	65	59	47
Benzodiazepines	8	6	4	3	7	16	28	48	52	43	40	35	37	41	50	71	70	70	67	49	47
Pharmaceutical opioids	14	9	8	7	8	11	7	18	37	35	39	39	52	51	48	63	61	52	42	45	42
Stimulants	2	2	3	3	4	9	1	10	11	7	18	10	22	31	35	39	47	59	55	44	42
Heroin	2	7	9	10	3	8	9	9	22	23	13	18	15	25	34	31	29	35	38	21	35
Alcohol	8	5	3	8	8	10	7	14	30	23	25	16	19	20	17	23	25	25	27	27	22
Cannabinoids	2	1	0	0	4	2	8	10	16	11	15	8	11	17	16	20	32	31	22	17	11

Table 16. Number of unintentional drug-induced deaths by drug group, regional Queensland, 2002-2022

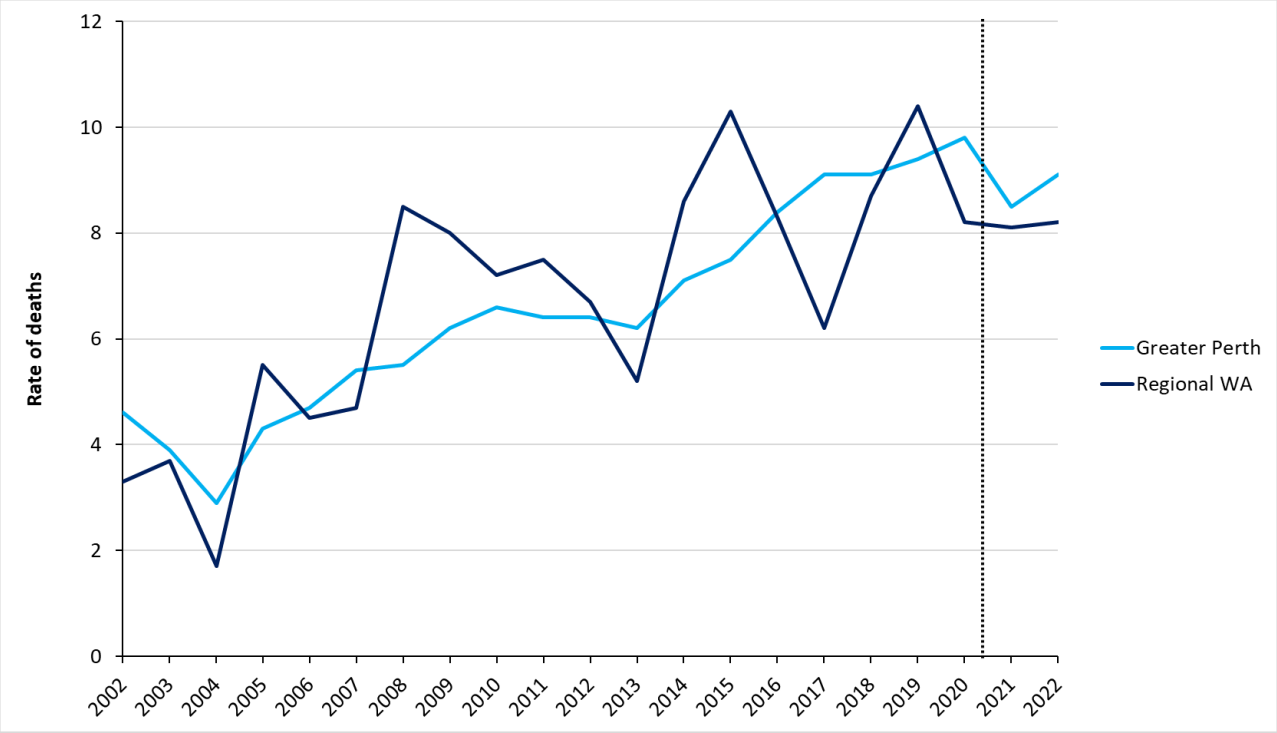
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Other pharmaceuticals	15	3	3	4	6	10	16	19	25	28	42	33	45	50	64	72	93	57	67	68	39
Benzodiazepines	15	8	7	10	7	18	17	36	43	44	54	40	53	48	47	63	86	59	60	58	35
Pharmaceutical opioids	10	7	13	12	16	17	27	33	51	43	59	47	75	83	80	81	84	57	72	61	33
Stimulants	1	0	0	1	6	3	7	13	9	11	17	14	30	36	41	43	43	41	45	31	31
Alcohol	10	7	8	2	9	16	21	39	26	26	36	29	31	29	26	28	40	22	34	31	23
Heroin	4	1	2	1	1	3	6	1	10	9	10	5	10	12	9	14	18	13	19	11	17
Cannabinoids	0	1	0	3	2	6	7	18	8	12	11	7	18	16	13	26	45	23	23	14	11

9.4. Western Australia

Greater Perth and regional / rural Western Australia have both seen an overall increase in rates of unintentional drug-induced deaths since 2002 (Figure 69). In 2022, the rates of unintentional drug-induced death were 9.1 per 100,000 population in Perth and 8.2 per 100,000 population in regional and rural Western Australia. However, the relatively small population living in regional and rural Western Australia means that small fluctuations in the number of unintentional drug-induced deaths can appear large when measured in terms of rates.

This section does not include data as a rate per 100,000 for different drug types, because relatively low numbers in some drug groups for regional and rural Western Australia makes calculation of rates less reliable. Numbers, however, are presented in Table 17 and Table 18.

Figure 69. Unintentional drug-induced deaths by regionality in Western Australia, 2002-2022, rate per 100,000 population



Note: Data to the right of the dotted line (2021 and 2022 data) are preliminary, and likely to rise.

Table 17. Number of unintentional drug-induced deaths by drug group, Perth, 2002-2022

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Other pharmaceuticals	19	4	5	7	18	15	24	24	29	29	27	15	31	46	40	84	92	93	106	87	84
Stimulants	8	5	9	6	9	10	16	10	9	12	16	29	38	32	58	70	74	74	78	50	81
Benzodiazepines	19	1	10	16	20	19	36	32	48	30	32	26	43	47	62	92	92	81	97	82	77
Pharmaceutical opioids	22	9	10	18	23	14	31	37	48	40	40	36	48	59	63	74	59	65	76	74	69
Heroin	3	4	4	8	4	7	10	24	22	25	29	32	28	29	52	51	62	64	61	36	62
Alcohol	12	9	1	17	10	25	24	23	32	27	22	28	32	35	23	31	43	41	70	41	59
Cannabinoids	10	2	3	7	11	6	10	11	11	17	14	11	21	14	26	39	52	41	50	44	38

Table 18. Number of unintentional drug-induced deaths by drug group, regional Western Australia, 2002-2022

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Stimulants	1	0	0	2	0	1	4	1	1	4	0	2	9	13	14	1	20	19	11	21	17
Other pharmaceuticals	2	1	1	6	5	2	8	6	8	8	8	1	6	14	9	11	26	11	23	16	17
Pharmaceutical opioids	2	1	1	8	4	1	19	12	13	15	10	7	21	17	17	12	20	21	21	11	15
Benzodiazepines	1	0	0	7	3	2	10	8	8	7	14	2	9	13	7	10	19	12	14	14	14
Alcohol	6	2	3	5	3	5	10	14	10	7	9	8	16	15	9	6	13	13	14	15	11
Heroin	0	3	4	0	0	4	4	2	4	5	0	0	5	7	6	3	9	12	7	3	7
Cannabinoids	1	0	0	1	4	1	4	3	3	6	8	1	7	9	9	3	14	8	10	15	6

9.5. Unintentional drug-induced deaths by state and territory

As shown in Table 19, the rate of unintentional drug-induced death per 100,000 population has increased across Australia for all drug types, when comparing the period 2008-2012 with the years 2018-2022. The ratio between the 2008-2012 rate and the 2018-2022 rate highlights the magnitude of changes during this time.

Queensland consistently has some of the largest increases in the rates of unintentional drug-induced death for different drug types. The rate of deaths involving stimulants in Queensland has more than tripled between 2008-2012 and 2018-2022 (with a ratio of 3.7), as have rates involving other pharmaceuticals (with a ratio of 2.9). Deaths involving pharmaceutical opioids in Queensland have also increased, with a ratio of 1.4.

Several other states and territories have recorded a similar increase in the rate of unintentional deaths involving stimulants between 2008-2012 and 2018-2022. New South Wales has seen the largest increase in unintentional deaths involving heroin, with a ratio for the change in rates of 2.9, followed by Western Australia (2.4) and Victoria (1.9). Western Australia recorded the largest increase in unintentional deaths involving stimulants (with a ratio of 5.8), followed by Victoria (5.6) and New South Wales (4.5).

Table 19. Number and rate per 100,000 population of unintentional drug-induced deaths, by drug type and state and territory, 2008-2012 and 2018-2022

	2008-2012	2018-2022	2008-2012	2018-2022	Ratio
	no.	no.	rate	rate	
Benzodiazepines					
NSW	412	905	1.2	2.3	2
VIC	477	1,172	1.8	3.6	2
QLD	405	606	1.9	2.4	1.3
SA	96	127	1.2	1.5	1.2
WA	225	510	2	3.8	1.9
TAS	59	64	2.5	2.3	0.9
NT	15	16	np	np	np
ACT	15	60	np	2.7	np
Australia	1,704	3,460	1.6	2.8	1.8

Pharmaceutical opioids					
NSW	385	638	1.1	1.6	1.5
VIC	378	557	1.4	1.7	1.2
QLD	349	558	1.6	2.2	1.4
SA	103	116	1.3	1.3	1
WA	265	438	2.3	3.2	1.4
TAS	45	50	1.9	1.9	1
NT	17	17	np	np	np
ACT	30	44	1.6	2	1.2
Australia	1,572	2,419	1.5	1.9	1.3
Other pharmaceuticals					
NSW	271	780	0.8	2	2.6
VIC	277	938	1	2.9	2.9
QLD	199	656	0.9	2.6	2.9
SA	97	100	1.2	1.2	1
WA	171	563	1.5	4.1	2.8
TAS	40	68	1.7	2.4	1.5
NT	3	16	np	np	np
ACT	15	61	np	2.7	np
Australia	1,074	3,183	1	2.5	2.6
Stimulants					
NSW	161	811	0.5	2.1	4.5
VIC	121	809	0.4	2.5	5.6
QLD	106	444	0.5	1.8	3.7
SA	35	133	0.5	1.6	3.5
WA	72	485	0.6	3.7	5.8
TAS	12	36	np	1.4	np
NT	3	21	np	1.6	np
ACT	5	54	np	2.4	np
Australia	514	2,793	0.5	2.3	4.7
Heroin					
NSW	170	559	0.5	1.4	2.9
VIC	378	864	1.4	2.7	1.9
QLD	115	241	0.5	1	1.8
SA	70	101	0.9	1.2	1.3

WA	120	336	1.1	2.5	2.4
TAS	2	14	np	np	np
NT	2	2	np	np	np
ACT	15	44	np	2	np
Australia	870	2,162	0.8	1.8	2.1
Cannabinoids					
NSW	42	398	0.1	1	8.5
VIC	65	412	0.2	1.3	5.3
QLD	116	231	0.5	1	1.8
SA	5	44	np	0.5	np
WA	84	287	0.7	2.2	3
TAS	10	23	np	0.9	np
NT	2	11	np	np	np
ACT	6	39	np	1.8	np
Australia	329	1,445	0.3	1.2	3.8
Alcohol					
NSW	418	495	1.2	1.3	1.1
VIC	303	574	1.1	1.7	1.6
QLD	251	279	1.1	1.1	1
SA	91	100	1.1	1.1	1
WA	181	327	1.6	2.4	1.5
TAS	25	35	1	1.3	1.3
NT	17	18	np	np	np
ACT	18	41	np	1.9	np
Australia	1,304	1,869	1.2	1.5	1.2
All unintentional drug-induced deaths					
NSW	1996	2872	5.5	7	1.3
VIC	1476	2373	5.3	7.2	1.3
QLD	1302	1590	5.9	6.2	1
SA	486	505	5.9	5.6	0.9
WA	750	1276	6.5	9.3	1.4
TAS	162	153	6.2	5.3	0.9
NT	73	88	7.9	7.6	1
ACT	88	151	4.8	6.8	1.4
Australia	**6,333**	**9,009**	**5.7**	**7**	**1.2**

Note: np (not available for publication) means that a value could not be calculated due to the low number of deaths, with a dash indicating that no rate was calculated because there were zero deaths.

9.6. Drug-induced deaths by Primary Health Network

Primary Health Networks (PHNs) are healthcare bodies coordinating primary health and other services for geographic catchments areas in Australia. There are 31 PHNs in Australia. Table 20 presents unintentional drug-induced deaths, drug-induced suicides and total drug-induced deaths for each PHN.

Table 20. Unintentional drug-induced deaths, drug-induced suicides and all drug-induced deaths, by PHN, numbers 2008-2022, and rates per 100,000 population for 2008-2012, 2013-2017 and 2018-2022

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2008 - 2012	2013 - 2017	2018 - 2022
Drug Type	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	rate	rate	rate
PHN101 Central and Eastern Sydney																		
Unintentional Drug-induced Deaths	95	107	99	86	82	117	115	129	136	134	133	131	117	130	112	6.3	8	7.6
Drug-induced Suicides	27	17	23	21	28	22	25	27	22	32	22	24	29	21	16	1.6	1.6	1.3
Total Drug-induced Deaths	143	137	133	114	114	140	141	160	159	168	155	157	148	151	129	8.6	9.7	9

PHN102 Northern Sydney																		
Unintentional Drug-induced Deaths	27	26	32	38	38	37	27	46	47	48	38	43	36	44	38	3.6	4.4	4
Drug-induced Suicides	15	12	11	13	16	15	7	13	10	9	11	7	17	9	7	1.5	1.1	1
Total Drug-induced Deaths	45	44	46	52	56	54	36	61	59	57	49	50	54	53	45	5.4	5.7	5
PHN103 Western Sydney																		
Unintentional Drug-induced Deaths	40	44	38	53	44	44	42	55	49	59	65	61	68	50	46	5.4	5.5	5.6
Drug-induced Suicides	13	1	5	8	13	13	8	12	9	9	9	6	5	10	6	1	1.1	0.7
Total Drug-induced Deaths	55	52	49	63	60	59	52	68	59	68	74	68	73	60	52	6.9	6.8	6.3
PHN104 Nepean Blue Mountains																		
Unintentional Drug-induced Deaths	23	16	21	29	23	22	21	23	39	31	32	34	27	31	21	6.8	7.6	7.7
Drug-induced Suicides	4	10	7	4	6	5	6	6	4	7	9	4	5	7	5	1.6	1.5	1.4
Total Drug-induced Deaths	25	27	30	32	30	29	29	30	43	41	41	37	32	38	27	8.8	9.6	9.2
PHN105 South Western Sydney																		
Unintentional Drug-induced Deaths	43	44	57	47	44	42	47	67	75	45	74	72	66	64	57	5.7	6.2	6.7
Drug-induced Suicides	6	2	10	7	15	13	4	20	7	7	9	11	12	8	11	1	1.2	1
Total Drug-induced Deaths	55	53	72	59	60	60	53	89	85	52	84	88	82	73	69	7.2	7.7	7.9
PHN106 South Eastern NSW																		
Unintentional Drug-induced Deaths	26	33	30	37	38	38	55	52	62	53	44	58	55	44	52	5.7	8.4	8
Drug-induced Suicides	6	6	13	15	17	12	11	12	15	12	10	19	8	14	14	1.9	2	1.9
Total Drug-induced Deaths	50	45	47	59	57	52	67	66	79	70	54	77	66	58	67	8.9	10.7	10

PHN107 Western NSW																		
Unintentional Drug-induced Deaths	16	15	18	27	12	22	33	28	35	33	29	29	24	27	31	6	10.3	8.7
Drug-induced Suicides	4	1	1	1	2	2	3	3	2	5	5	6	5	4	3	np	np	1.4
Total Drug-induced Deaths	20	17	21	28	15	27	40	31	40	39	34	36	30	30	35	6.8	12.1	10.4
PHN108 Hunter New England and Central Coast																		
Unintentional Drug-induced Deaths	45	45	51	70	68	70	62	94	97	84	102	101	93	94	94	4.8	6.7	7.7
Drug-induced Suicides	17	20	11	16	28	25	22	27	31	36	32	26	24	25	17	1.6	2.3	1.8
Total Drug-induced Deaths	75	81	86	89	107	93	126	128	115	142	135	130	125	124	127	7.5	9.8	9.8
PHN109 North Coast																		
Unintentional Drug-induced Deaths	22	26	33	28	39	36	54	40	45	48	51	39	51	54	53	6.1	8.7	9.3
Drug-induced Suicides	5	7	1	3	10	6	11	13	16	15	14	12	18	14	10	1.1	2.2	2.3
Total Drug-induced Deaths	38	47	49	32	50	45	72	55	62	65	67	52	70	68	63	8.8	11.4	11.7
PHN110 Murrumbidgee																		
Unintentional Drug-induced Deaths	10	11	8	8	16	11	16	16	19	13	14	24	15	19	15	4.7	6.5	7
Drug-induced Suicides	3	0	4	3	5	2	0	5	6	1	5	7	5	2	5	np	np	2
Total Drug-induced Deaths	13	11	14	14	22	15	17	24	25	16	20	33	21	23	21	6.7	8.4	9.5
PHN201 North Western Melbourne																		
Unintentional Drug-induced Deaths	105	71	82	97	67	84	91	109	129	127	117	124	144	134	164	5.8	6.6	7.2
Drug-induced Suicides	11	25	9	15	15	22	23	26	24	26	30	27	24	20	27	1.1	1.5	1.4
Total Drug-induced Deaths	125	118	107	126	99	107	119	139	158	163	151	161	173	158	196	7.9	8.4	8.8

PHN202 Eastern Melbourne																		
Unintentional Drug-induced Deaths	66	67	58	59	35	72	65	71	80	93	73	91	94	85	102	4.2	5.2	5.6
Drug-induced Suicides	13	17	19	20	18	17	26	28	29	20	22	27	21	24	14	1.2	1.5	1.3
Total Drug-induced Deaths	91	97	84	87	64	95	94	102	114	120	96	121	118	113	119	6.1	7	7.1
PHN203 South Eastern Melbourne																		
Unintentional Drug-induced Deaths	78	83	89	76	55	65	82	92	128	108	110	95	138	101	127	5.6	6.4	7
Drug-induced Suicides	15	31	25	24	14	18	27	28	29	40	23	26	18	29	25	1.6	1.9	1.4
Total Drug-induced Deaths	113	133	120	110	83	86	117	127	166	151	140	123	163	136	154	8.2	8.7	8.7
PHN204 Gippsland																		
Unintentional Drug-induced Deaths	14	23	17	14	9	17	27	19	33	25	28	20	23	25	22	6.5	9.8	8.6
Drug-induced Suicides	5	4	2	8	1	5	8	1	2	5	3	7	8	9	7	1.5	1.6	2.3
Total Drug-induced Deaths	19	29	22	25	14	23	37	26	38	30	33	27	34	34	29	9	12	11.4
PHN205 Murray																		
Unintentional Drug-induced Deaths	29	31	24	34	29	40	36	45	52	62	51	57	60	47	50	5.5	8.3	8.7
Drug-induced Suicides	6	7	2	8	9	13	12	13	10	11	14	12	13	7	11	1.1	1.8	1.6
Total Drug-induced Deaths	37	41	30	50	45	58	54	60	70	74	69	70	76	55	61	7.4	10.9	10.6
PHN206 Grampians and Barwon South West																		
Unintentional Drug-induced Deaths	42	35	35	35	25	21	47	42	46	69	46	62	46	36	59	6	7.5	7.6
Drug-induced Suicides	10	6	5	4	6	8	12	4	10	8	15	10	12	9	9	1.1	1.3	1.5
Total Drug-induced Deaths	57	48	47	55	42	30	62	48	56	78	63	73	58	47	69	8.8	9.1	9.2

PHN301 Brisbane North																		
Unintentional Drug-induced Deaths	36	43	65	55	56	45	53	62	64	54	60	63	65	62	63	5.8	5.8	5.9
Drug-induced Suicides	11	15	11	22	21	22	25	20	16	21	22	27	20	25	16	1.8	2.1	2
Total Drug-induced Deaths	50	61	78	77	77	69	81	86	80	75	84	94	99	94	84	7.8	8.1	8.5
PHN302 Brisbane South																		
Unintentional Drug-induced Deaths	38	49	76	64	55	49	69	52	59	84	73	75	73	63	73	5.6	5.7	6
Drug-induced Suicides	18	14	19	10	21	20	19	27	21	24	27	30	24	16	18	1.6	2	1.9
Total Drug-induced Deaths	62	64	96	76	78	71	90	81	80	109	104	110	103	83	92	7.4	7.8	8.2
PHN303 Gold Coast																		
Unintentional Drug-induced Deaths	19	26	24	36	39	31	40	48	42	54	45	34	41	51	41	5.4	7.4	6.5
Drug-induced Suicides	15	13	11	8	5	18	17	19	15	31	15	10	17	24	16	1.9	3.3	2.3
Total Drug-induced Deaths	38	40	35	44	45	49	59	68	59	89	60	45	58	79	58	7.6	11	9
PHN304 Darling Downs and West Moreton																		
Unintentional Drug-induced Deaths	19	37	27	28	25	28	23	41	34	25	32	28	28	35	32	5.6	5.8	5.5
Drug-induced Suicides	9	9	3	7	8	8	10	16	9	7	8	15	8	11	15	1.5	1.9	1.9
Total Drug-induced Deaths	30	47	31	35	35	40	34	57	43	32	42	43	37	47	49	7.3	7.9	7.6
PHN305 Western Queensland																		
Unintentional Drug-induced Deaths	5	2	6	5	2	6	2	1	1	2	2	2	6	1	3	6.5	np	np
Drug-induced Suicides	0	3	1	0	0	0	3	4	0	0	0	0	4	0	0	np	np	np
Total Drug-induced Deaths	5	3	7	5	5	6	3	6	3	4	1	2	7	4	3	7.3	6.5	np

PHN306 Central Queensland and Sunshine Coast																	
Unintentional Drug-induced Deaths	38	46	63	52	64	65	66	58	67	49	76	47	56	55	61	7.1	7.7	6.7
Drug-induced Suicides	10	13	9	11	20	25	24	31	23	24	32	21	16	21	25	1.5	2.8	2.2
Total Drug-induced Deaths	55	60	76	64	84	97	92	91	92	73	109	69	74	79	88	8.9	10.9	9.1
PHN307 Northern Queensland																	
Unintentional Drug-induced Deaths	28	37	39	43	36	33	30	53	58	34	41	46	54	40	46	5.7	6.1	6.2
Drug-induced Suicides	6	8	8	16	12	10	9	16	12	13	12	15	14	20	13	1.5	1.7	2
Total Drug-induced Deaths	35	46	47	62	50	44	42	69	70	48	54	63	68	63	63	7.4	7.9	8.4
PHN401 Adelaide																	
Unintentional Drug-induced Deaths	76	86	77	52	84	46	68	51	88	97	78	73	67	69	88	6.5	5.7	5.8
Drug-induced Suicides	22	21	18	16	18	24	31	31	30	30	24	32	25	26	24	1.6	2.3	1.9
Total Drug-induced Deaths	110	116	110	87	119	91	113	97	124	136	113	135	111	104	117	9.3	9.1	8.8
PHN402 Country SA																	
Unintentional Drug-induced Deaths	21	28	17	21	20	19	15	26	24	26	23	22	17	31	29	4.2	4.3	4.7
Drug-induced Suicides	10	3	6	11	7	10	8	11	7	14	8	10	12	11	17	1.6	1.8	2.2
Total Drug-induced Deaths	32	32	25	37	34	35	28	44	33	43	31	36	36	47	46	6.5	7.1	7.7
PHN501 Perth North																	
Unintentional Drug-induced Deaths	51	77	62	59	71	65	64	75	84	94	93	100	105	84	103	6.7	7.3	8.5
Drug-induced Suicides	16	23	24	16	23	21	24	20	22	28	18	25	20	24	23	2.1	2.1	1.9
Total Drug-induced Deaths	69	100	88	76	97	88	91	101	111	126	117	129	129	114	127	9	9.8	10.7

PHN502 Perth South																		
Unintentional Drug-induced Deaths	44	34	55	60	49	55	77	73	85	91	95	103	111	107	100	5.8	8.1	9.8
Drug-induced Suicides	9	16	22	15	23	14	19	20	21	20	22	20	19	20	18	2	1.9	1.8
Total Drug-induced Deaths	57	52	78	76	77	69	101	94	110	115	122	130	132	131	122	8	10.4	12
PHN503 Country WA																		
Unintentional Drug-induced Deaths	40	36	35	36	35	28	47	56	44	32	46	55	45	48	48	7.2	7.7	8.8
Drug-induced Suicides	2	7	5	7	9	3	11	10	12	11	12	8	8	7	8	1.3	1.7	1.4
Total Drug-induced Deaths	46	43	42	43	45	33	60	69	59	43	59	64	54	60	56	8.7	9.7	10.4
PHN601 Tasmania																		
Unintentional Drug-induced Deaths	27	40	28	36	28	27	37	31	47	36	33	34	30	26	29	6.1	6.6	5.3
Drug-induced Suicides	7	11	10	8	11	11	15	13	21	12	9	22	17	17	19	1.7	2.5	2.5
Total Drug-induced Deaths	40	60	41	47	42	45	54	49	70	54	44	56	48	49	52	8.8	10	8.2
PHN701 Northern Territory																		
Unintentional Drug-induced Deaths	12	12	16	9	17	11	10	15	9	15	18	17	15	18	13	7.3	5.7	7
Drug-induced Suicides	3	0	2	4	0	3	6	4	3	3	4	0	4	1	4	np	np	np
Total Drug-induced Deaths	15	12	19	11	19	13	16	20	12	21	19	19	18	21	15	8.5	7.7	8
PHN801 Australian Capital Territory																		
Unintentional Drug-induced Deaths	22	17	20	16	12	23	21	16	28	27	28	22	28	37	34	4.7	5.8	6.7
Drug-induced Suicides	3	7	1	5	5	3	9	7	2	15	9	17	22	17	15	1.4	1.9	3.5
Total Drug-induced Deaths	28	30	25	22	17	27	31	24	33	43	39	41	56	54	50	6.7	7.9	10.7

Australia																		
Unintentional Drug-induced Deaths	1,171	1,281	1,325	1,319	1,237	1,287	1,516	1,614	1,784	1,822	1,786	1,779	1,826	1,740	1,878	5.7	6.7	7.0
Drug-induced Suicides	295	342	304	333	386	383	453	475	446	502	463	486	451	459	426	1.5	1.8	1.7
Total Drug-induced Deaths	1,648	1,785	1,756	1,775	1,762	1,768	2,074	2,183	2,296	2,400	2,318	2,368	2,379	2,277	2,356	7.8	8.9	9.0

— nil or rounded to zero (including null cells).

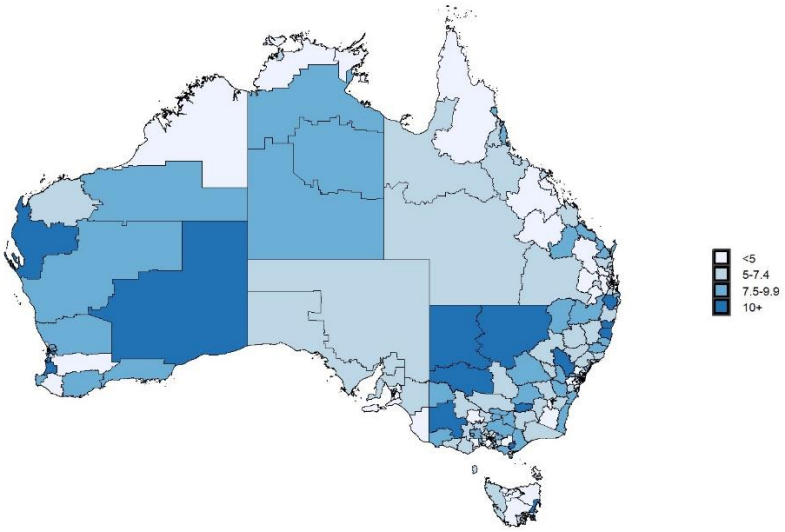
np not available for publication but included in totals where applicable, unless otherwise indicated.

9.7. Unintentional drug-induced deaths by local areas

The following figures represent the rate (per 100,000 population) of unintentional drug-induced deaths by Statistical Area 3 (SA3), aggregated over the 2018-2022 period.[89] SA3s are geographic designations used by the ABS to provide a means for regional analysis. Most SA3s have a population of between 30,000 and 130,000 people, though in major cities they represent areas serviced by a major transport and commercial hub (and may have a population of greater than 130,000).

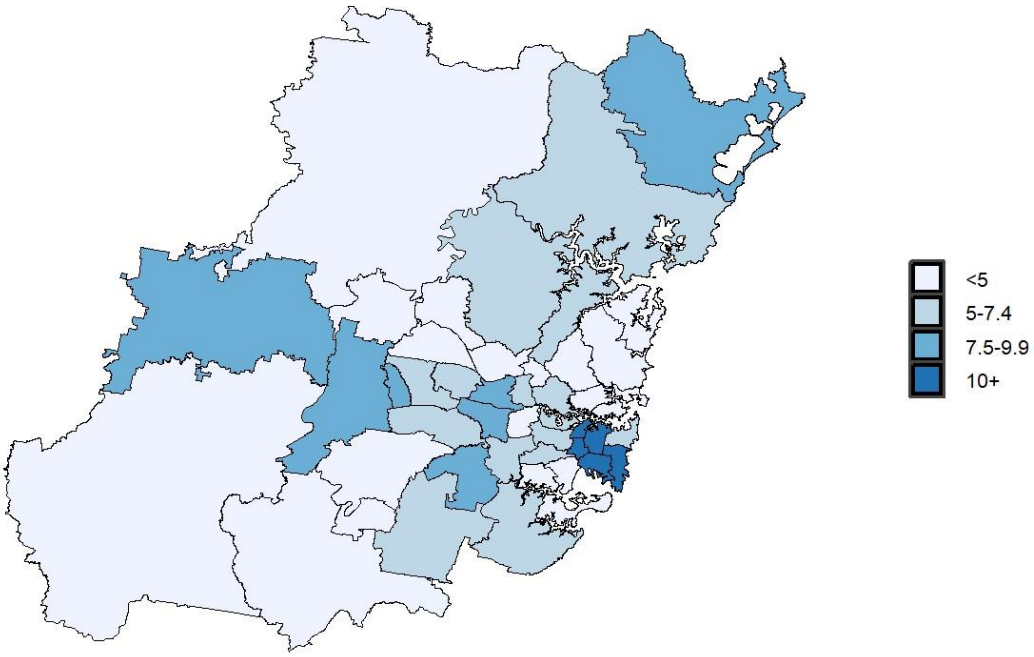
Darker shading indicates a higher rate of unintentional drug-induced death per 100,000 people. The darkest shading indicates that an area has a rate (per 100,000 population) of unintentional drug-induced death greater than 10 deaths per 100,000 population. For areas with no shading (white), there were not sufficient data available to provide a reliable estimate of the population rate.

Figure 70. Australia: Unintentional drug-induced deaths 2018-2022 (Statistical Area 3), rate per 100,000 population



[89] The maps were created in 'R Studio' (R Core Team, Vienna, Austria) using the 'ggplot2' package (Wickham, 2016).

Figure 71 and Figure 72. Sydney and NSW: Unintentional drug-induced deaths 2018-2022 (Statistical Area 3), rate per 100,000 population



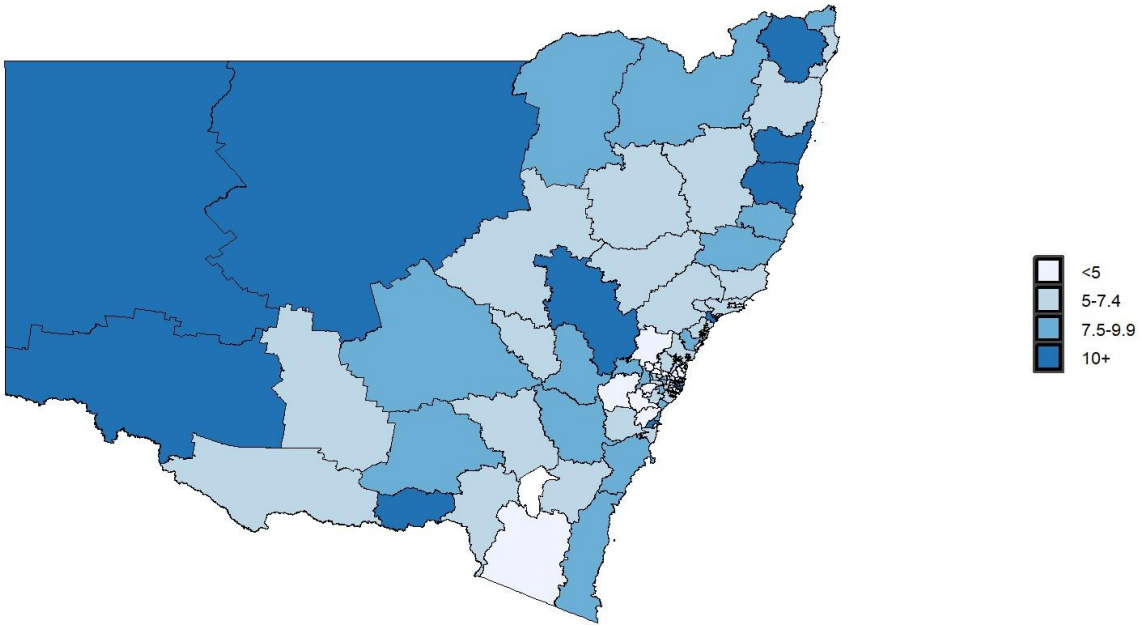
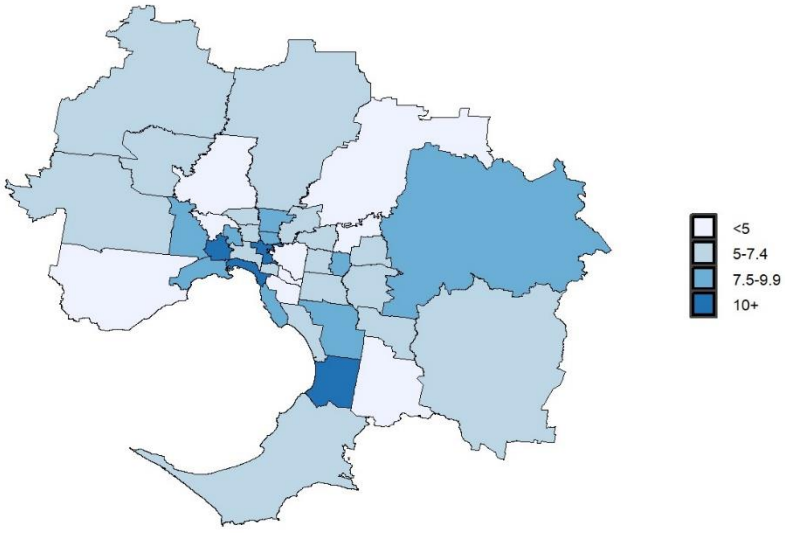


Figure 73 and Figure 74. Melbourne and Victoria: Unintentional drug-induced deaths 2018-2022 (Statistical Area 3), rate per 100,000 population



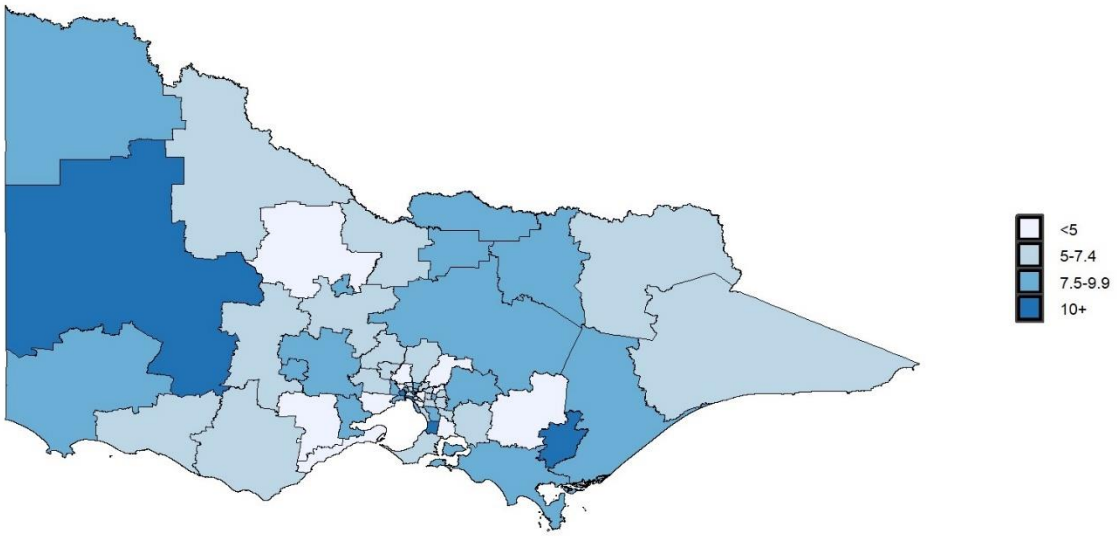
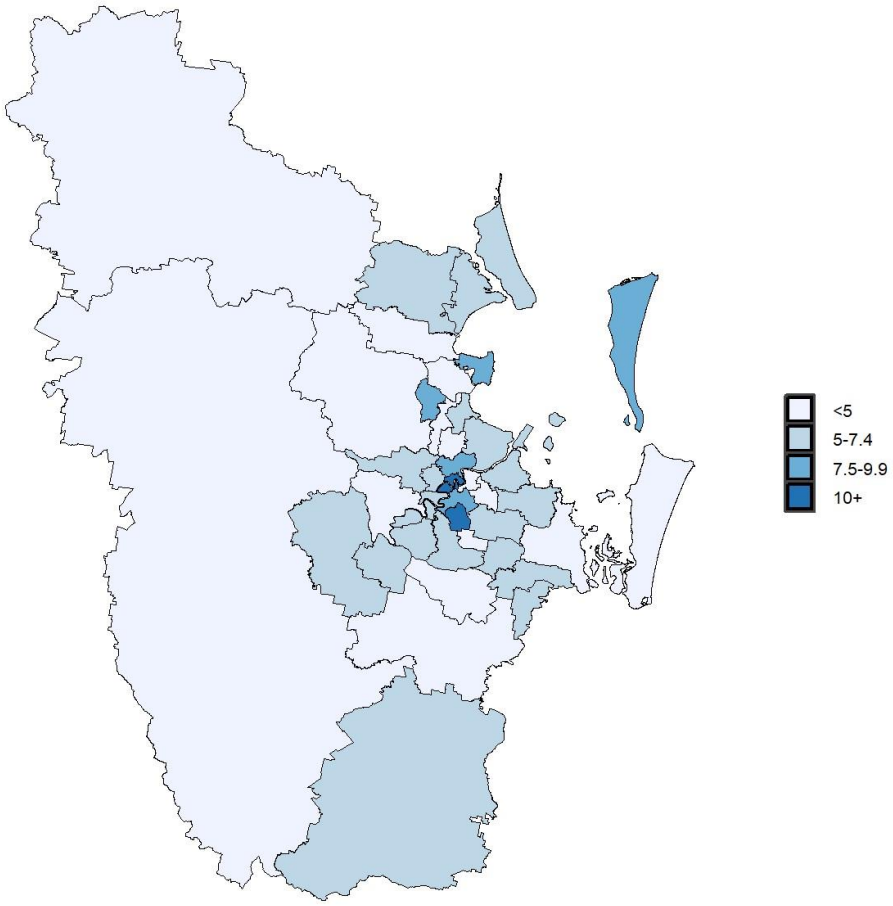

<5
5-7.4
7.5-9.9
10+

Figure 75 and Figure 76. Brisbane and Queensland: Unintentional drug-induced deaths 2018-2022 (Statistical Area 3), rate per 100,000 population



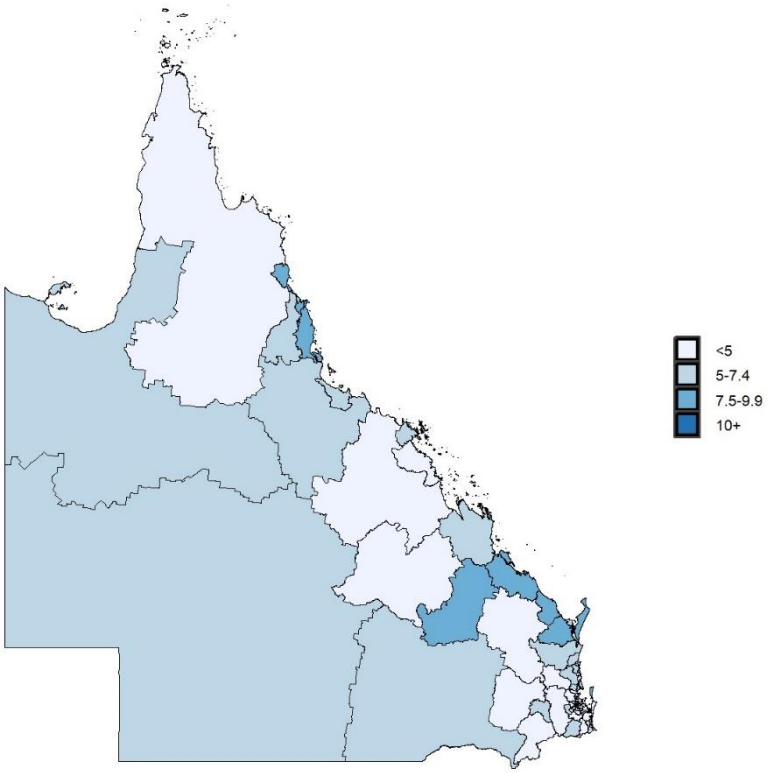
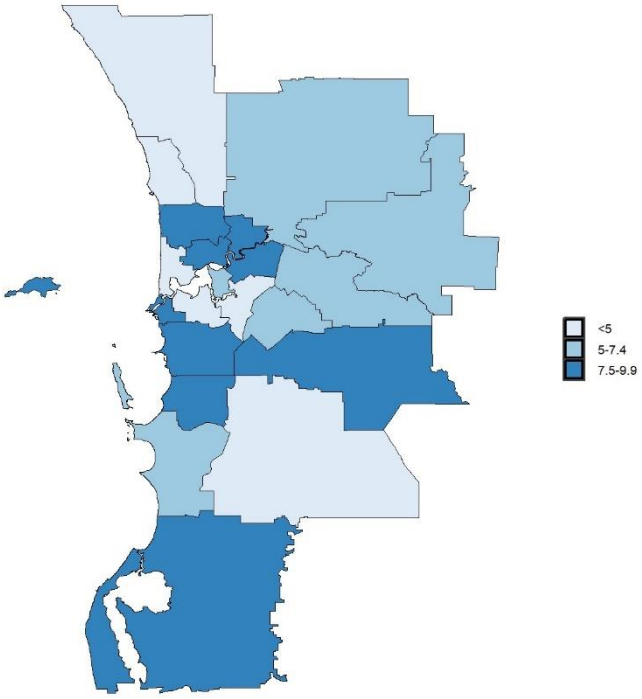

<5
5-7.4
7.5-9.9
10+

Figure 77 and Figure 78. Perth and WA: Unintentional drug-induced deaths 2018-2022 (Statistical Area 3), rate per 100,000 population



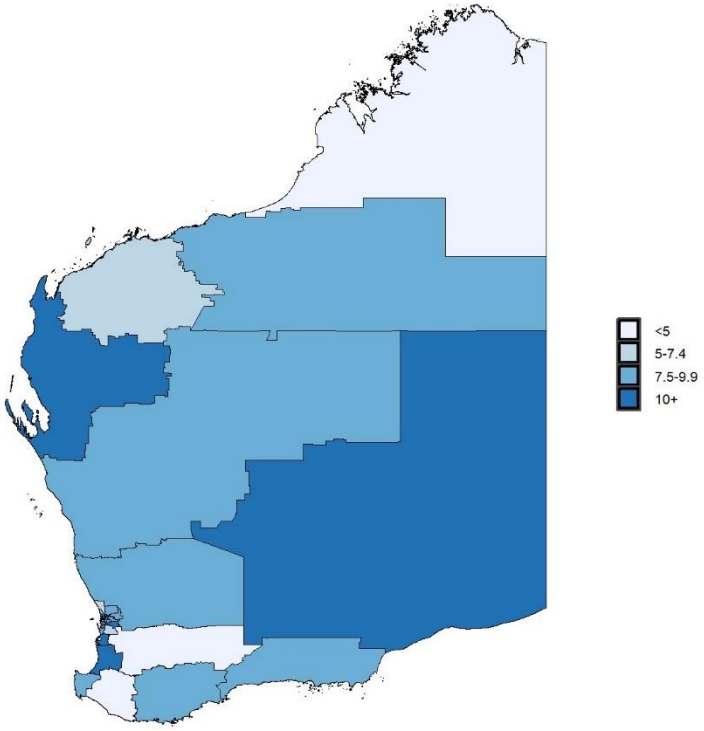
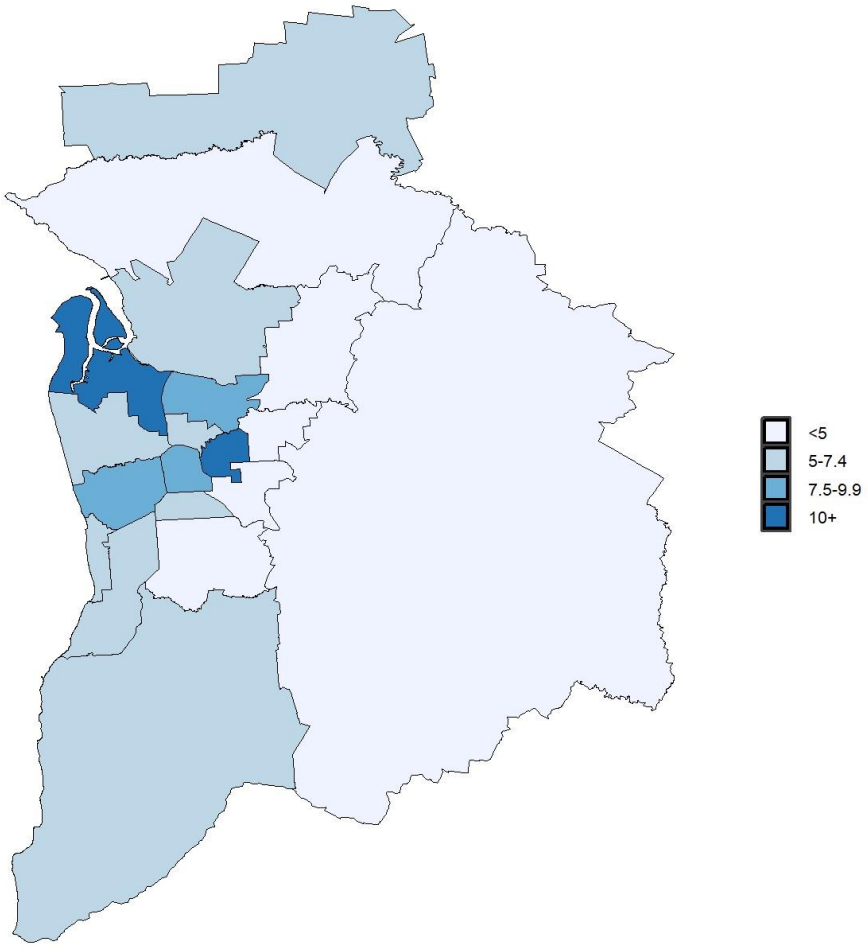

<5
5-7.4
7.5-9.9
10+

Figure 79 and Figure 80. Adelaide and SA: Unintentional drug-induced deaths 2018-2022 (Statistical Area 3), rate per 100,000 population



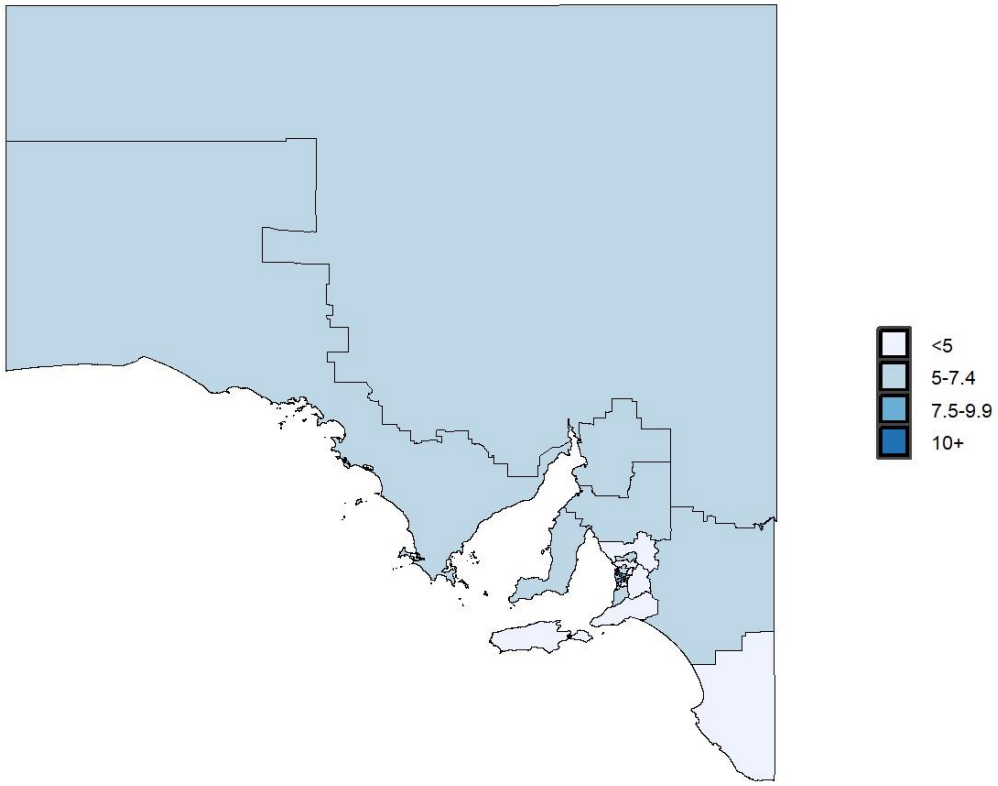
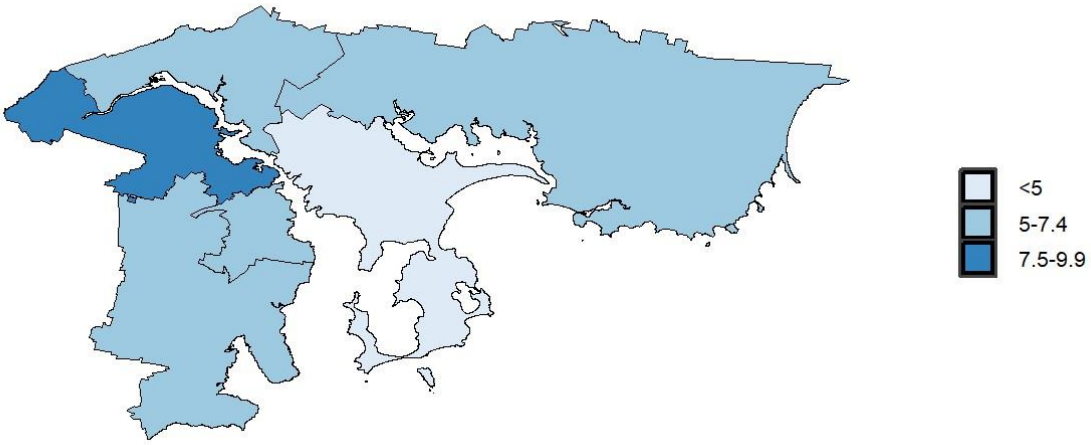

<5
5-7.4
7.5-9.9
10+

Figure 81 and Figure 82. Hobart and Tasmania: Unintentional drug-induced deaths 2018-2022 (Statistical Area 3), rate per 100,000 population



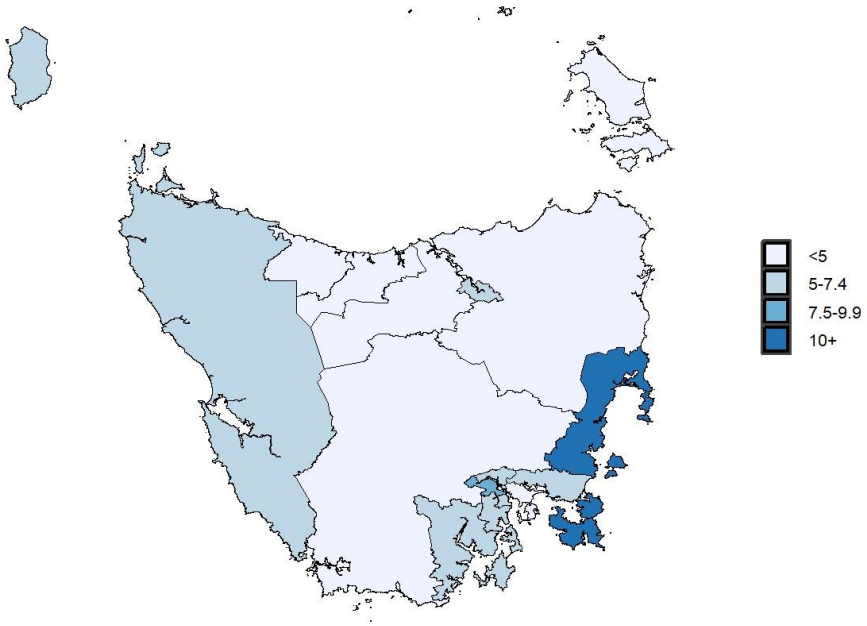
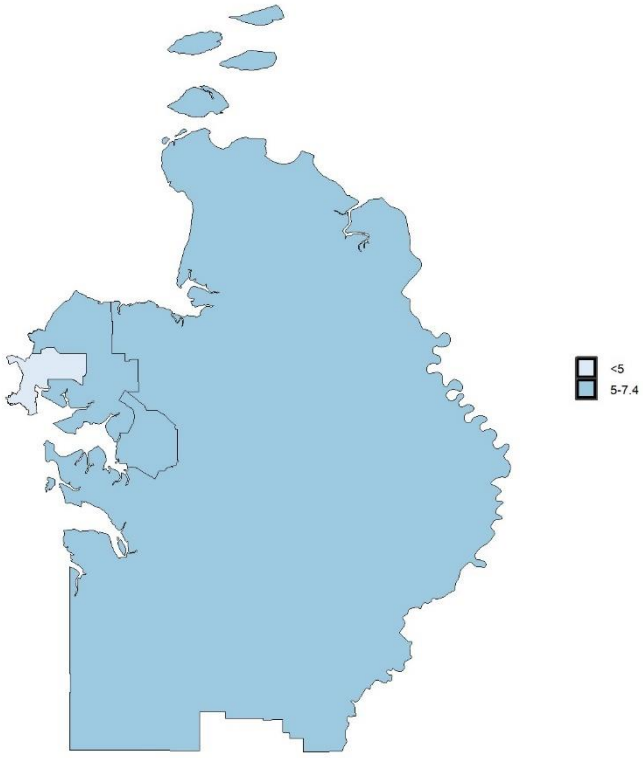


Figure 83 and Figure 84. Darwin and NT: Unintentional drug-induced deaths 2018-2022 (Statistical Area 3), rate per 100,000 population



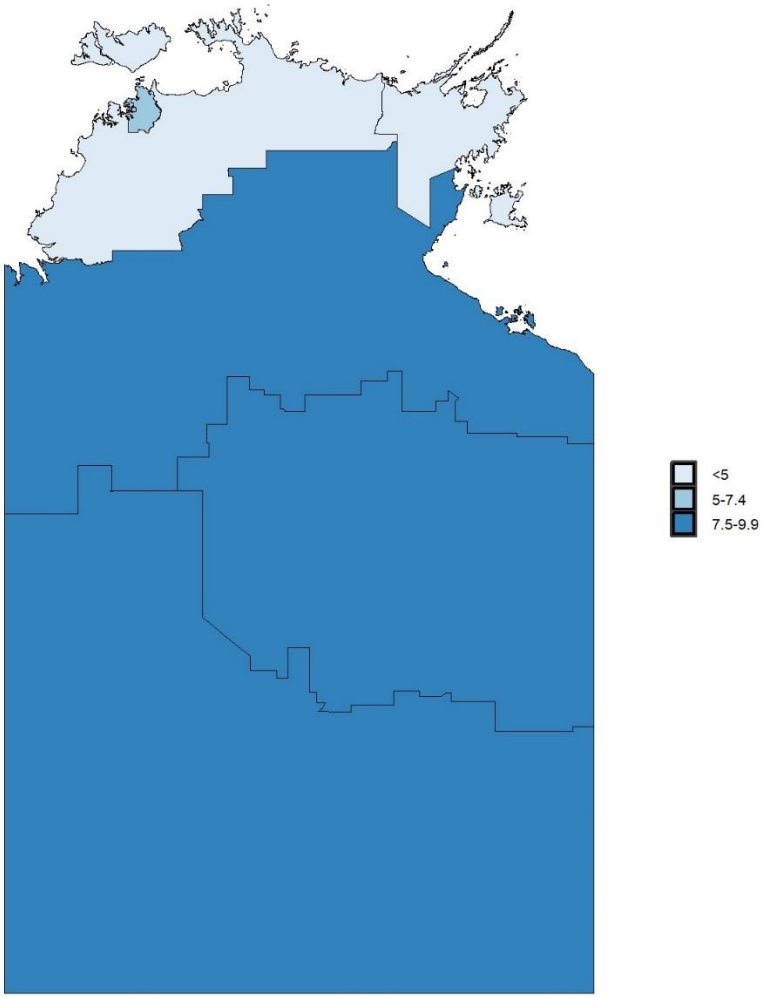

<5
5-7.4
7.5-9.9

Figure 85. ACT: Unintentional drug-induced deaths 2018-2022 (Statistical Area 3), rate per 100,000 population

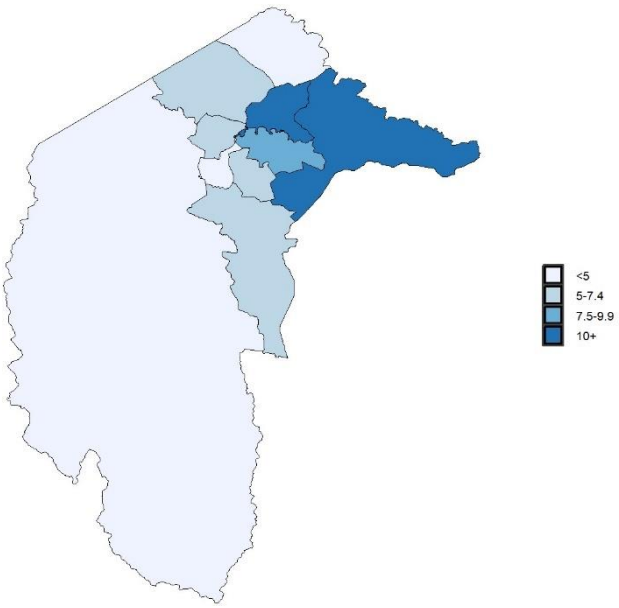


Table 21. Top ten unintentional drug induced deaths by Statistical Area 3, 2013-2022

The following table represents the Statistical Area 3 with the highest number of unintentional drug-induced deaths NSW, Victoria, Queensland, Western Australia and South Australia, aggregated over the 2013-2022 period.

	All unintentional drug-induced deaths	Opioids	Benzodiazepines	Stimulants	Alcohol	Anti-depressants	Anti- psychotics	Cannabinoids	Anti-convulsants
Statistical Area 3									
New South Wales									
Sydney Inner City	351	235	122	112	72	52	30	48	11
Newcastle	171	88	52	48	32	28	14	21	8
Eastern Suburbs - South	146	80	53	35	19	25	14	28	9
Bankstown	133	69	52	33	14	22	9	15	8
Gosford	132	65	39	27	28	16	9	19	5
Wyong	132	58	35	25	30	25	9	12	np
Fairfield	123	71	32	42	17	14	11	14	np
Wollongong	122	60	31	32	29	18	10	11	np
Merrylands - Guildford	119	67	44	44	17	16	10	19	np
Campbelltown	114	62	36	31	18	17	12	13	np
Victoria									
Geelong	179	110	76	49	51	44	15	34	17

Dandenong	169	110	82	68	38	32	21	31	6
Port Phillip	164	110	74	61	38	28	17	26	13
Brimbank	151	111	67	55	28	27	26	21	5
Frankston	148	90	80	56	33	45	21	27	19
Melbourne City	127	88	61	49	26	30	11	33	8
Wyndham	122	77	52	42	24	19	19	12	8
Whittlesea - Wallan	119	65	52	32	22	24	14	15	np
Yarra	118	82	57	31	33	21	17	20	8
Mornington Peninsula	114	61	59	31	29	33	16	18	7
Queensland									
Townsville	126	58	40	37	24	35	14	17	21
Brisbane Inner	123	77	61	46	22	31	16	16	18
Cairns - South	95	51	33	20	20	24	9	8	12
Rockhampton	92	46	28	16	14	19	10	11	9
Brisbane Inner - North	82	48	32	25	14	23	11	6	17
Toowoomba	79	46	31	21	11	23	12	12	13
Holland Park - Yeronga	78	53	34	24	9	21	7	9	14
Bundaberg	72	47	24	14	5	23	9	9	16
Ipswich Inner	67	40	30	13	10	17	7	13	7
Gold Coast - North	65	35	30	13	18	13	5	5	8
Western Australia									
Stirling	208	146	96	82	58	68	27	40	58
Perth City	133	85	57	38	39	45	21	23	39
Mandurah	129	76	48	30	23	32	14	20	23

Wanneroo	114	78	43	42	25	37	9	28	25
Swan	107	67	29	39	19	29	8	14	19
Rockingham	107	63	39	39	22	29	14	19	22
Bayswater - Bassendean	100	63	45	36	21	29	16	19	21
Cockburn	100	55	37	33	19	25	14	18	19
Gosnells	96	58	35	34	24	27	14	21	24
Bunbury	95	55	24	29	26	23	5	16	26
South Australia									
Onkaparinga	90	58	28	25	16	21	np	6	np
Charles Sturt	90	48	22	16	12	9	5	6	np
Salisbury	80	35	22	26	15	14	5	7	np
Port Adelaide - West	61	36	12	16	3	7	np	8	np
Playford	57	37	15	16	10	7	np	5	np
Port Adelaide - East	50	22	16	10	6	5	8	np	5
Marion	48	30	17	12	10	5	5	np	np
West Torrens	42	21	7	6	13	np	np	np	np
Murray and Mallee	42	13	6	8	11	np	np	np	np
Tea Tree Gully	39	17	10	np	12	8	np	np	0

np not available for publication but included in totals where applicable, unless otherwise indicated.

10. *Non-fatal acute drug- and alcohol-related harm*

There are far more non-fatal than fatal drug overdoses in Australia every year.

Research has shown that the ratio of non-fatal to fatal heroin overdose, for example, is approximately 30:1, with between 3% and 4% of heroin overdose events resulting in death.[90] It has been estimated that about 45% of people who use opioids have experienced a non-fatal overdose during their lifetime.[91]

The health impacts of non-fatal overdoses may be both acute and chronic. Acute morbidity includes direct impacts of the overdose (such as low blood pressure, heart rhythm disturbances, abnormal body temperature, liver injury and reduced breathing) and the secondary impacts that can result from disturbances to normal body functioning (such as respiratory tract infection, muscle breakdown and kidney failure). Secondary harm may include injuries sustained because of a drug causing collapse, falls or dangerous behaviour (such as motor vehicle accidents, bone fractures and burns). Chronic morbidity may result from conditions that last a long time as the result of overdose and may lead to an individual being permanently disabled, unable to work, or even requiring full-time care. These conditions include brain injuries resulting from lack of oxygen during the overdose, kidney failure, strokes, and damage to other organs within the body. The more episodes of non-fatal overdose that an individual experiences, the greater the chance becomes that they will suffer a complication that leaves them with a chronic disability.[92]

People who have experienced a non-fatal overdose are at greater risk of harm from further overdose – both non-fatal and fatal. Australian research has found a direct association between non-fatal overdose and subsequent overdose mortality, with increased risk among men, those over age 35 and those who have previously been attended by an ambulance multiple times for non-fatal overdoses.[93]

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[90] Darke, S., Mattick, R.P. and Degenhardt, L. (2003). The ratio of non-fatal to fatal heroin overdose. *Addiction*, 98: 1169-1172.
[91] See further: *UN Toolkit on synthetic drugs: Opioid overdose*.
[92] Geddes, L., Iversen, J., Darke, S., Dietze, P. and Maher, L. (2021). Prevalence and correlates of multiple non-fatal opioid overdoses among people who inject drugs who utilise needle syringe programs in Australia. *International Journal of Drug Policy*, 96: 103245.
[93] Stoové, M.A., Dietze, P.M. and Jolley D. (2009). Overdose deaths following previous non-fatal heroin overdose: Record linkage of ambulance attendance and death registry data. *Drug and Alcohol Review*, 28(4): 347-52.

Fatal overdose continues to take a significant toll on our communities; Chapter 4 of this report shows that there were 2,356 drug-induced deaths reported in Australia in 2022. The relationship between non-fatal and fatal overdose means that many of the victims of fatal overdose had likely experienced at least one previous overdose.

In recognition of the role of opioids in overdose deaths, from 1 July 2022 the opioid overdose reversal drug naloxone became available nationally at no cost without a need for a prescription. A recent evaluation of the initial Take Home Naloxone pilot found that naloxone had saved up to an estimated three lives each day.[94] The impact of the national program on the number of overdose deaths and hospitalisations will likely be seen in future editions of Penington Institute's *Australia's Annual Overdose Report*.

Measuring the extent of non-fatal overdose is a significant public health challenge. Data are available for drug- and alcohol-related ambulance attendances and hospitalisations, but they are limited and likely represent an underestimate of the full extent of 'non-fatal overdose'. Nonetheless, these data do provide an indication of some of the burden of non-fatal acute drug- and alcohol-related harm in our community.

This chapter provides an overview of trends in non-fatal acute drug- and alcohol-related harm (including overdose) relating to the use of illicit substances (e.g. methamphetamine), pharmaceutical medications (e.g. anti-depressants or paracetamol), and alcohol, as indicated by available ambulance attendance, hospitalisation and poisons centre data. Access to timely and accurate data regarding the trends and emerging patterns in overdose is essential to help first responders, service providers and policymakers to save lives.

10.1. Drug- and alcohol-related ambulance attendances

This section presents data on drug- and alcohol-related ambulance attendances in select states and territories in Australia. It includes drug- and alcohol-related events (including overdose) that may not be counted in hospital data, thus revealing a broader picture of the extent of drug- and alcohol-related harm in our communities.

As shown in Table 22, there were 159,862 drug- and alcohol-related ambulance attendances recorded in 2022 across the six jurisdictions for which data are available. The highest rates of all drug- and alcohol-related attendances were seen in the Northern Territory (with 2,598 attendances

[94] University of Queensland Institute for Social Science Research (2022). *Evaluation of the Pharmaceutical Benefits Scheme subsidised take home naloxone pilot: Final report*.

per 100,000 population), Tasmania (with 912.6 attendances per 100,000 population) and Queensland (with 906.7 attendances per 100,000 population).

In 2022, more than half (58% or 92,383) of all drug- and alcohol-related ambulance attendances reportedly involved alcohol. The highest rate of alcohol-related attendances was in the Northern Territory (2,598 per 100,000 population). Almost one in four attendances nationally (23.4% or 37,465) were suspected to involve illicit drugs. Pharmaceutical drugs – including anti-convulsants, anti-depressants, anti-psychotics, benzodiazepines, prescription opioids, and pharmaceutical stimulants – accounted for a similar proportion of attendances (20.8% or 33,296).

Table 22: Number and rate (per 100,000 population) of drug- and alcohol-related ambulance attendances, by suspected drug type and jurisdiction, 2022

	NSW	VIC	QLD	TAS	ACT	NT	TOTAL
All AOD attendances[95]							
Number	50,370	45,759	48,244	5,211	3,777	6,501	159,862
Rate	616.8	690.2	906.7	912.6	826.7	2,598.0	
Any illicit[96]							
Number	12,100	12,562	10,008	1,082	838	875	37,465
Rate	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Any pharmaceuticals[97]							
Number	9,537	9,943	11,255	1,380	910	271	33,296
Rate	143.0	182.9	260.4	290.0	243.5	137.1	
Alcohol							
Number	29,641	24,751	27,722	2,984	2,149	5,136	92,383
Rate	444.3	455.4	641.4	627.0	575.0	2,598	
Cannabinoids							
Number	5,187	4,167	4,698	653	384	688	15,777
Rate	77.7	76.7	108.7	137.2	102.7	348.0	
Benzodiazepines							
Number	2,758	3,756	3,257	347	215	46	10,379

[95] This includes attendances for alcohol intoxication, illicit drugs, and pharmaceutical drugs. An attendance may involve more than one drug.
[96] 'Any illicit' include amphetamines, cannabinoids, cocaine, ecstasy, GHB, heroin, ketamine, synthetic cannabinoids, emerging psychoactive substances, LSD, mushrooms, tryptamine/DMT, inhalants (chroming, paint, petrol, and other inhalants) and other illicit drugs.
[97] 'Any pharmaceuticals' include anti-convulsants, anti-depressants, anti-psychotics, benzodiazepines, opioid analgesics, methadone, buprenorphine, pharmaceutical stimulants and other unknown/unspecified medications.

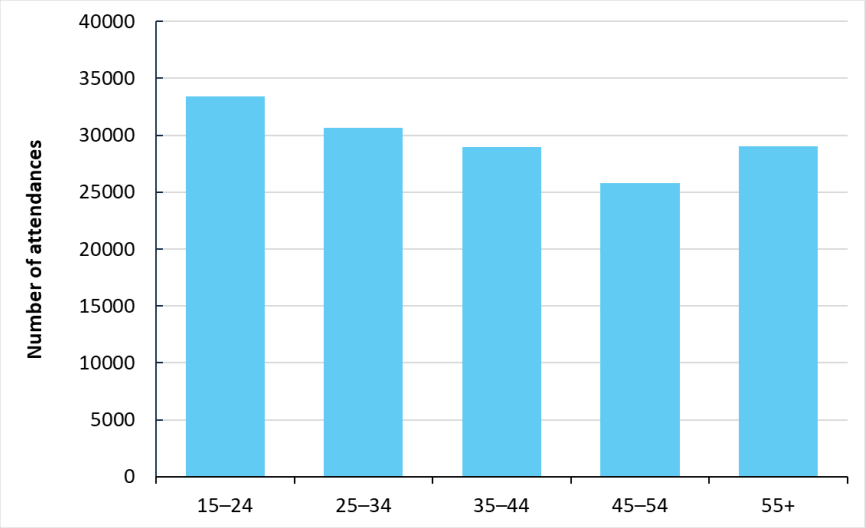
Rate	41.3	69.1	75.4	72.9	57.5	23.3	
Amphetamines							
Number	3,964	4,161	3,518	361	183	139	12,326
Rate	59.4	76.6	81.4	75.9	49.0	70.3	
Anti-depressants							
Number	1,635	1,617	2,260	327	129	n.p	5,968
Rate	24.5	29.7	52.3	68.7	34.5	n.p	
Opioid analgesics[98]							
Number	1,308	1,321	1,733	186	134	40	4,722
Rate	19.6	24.3	40.1	39.1	35.9	20.2	
Heroin							
Number	1,341	2,347	433	10	161	n.p	4,292
Rate	20.1	43.2	10.0	2.1	43.1	n.p	
Cocaine							
Number	1,185	792	675	49	66	n.p	2,767
Rate	17.8	14.6	15.6	10.3	17.7	n.p	
Ecstasy							
Number	513	394	368	40	32	n.p	1,347
Rate	7.7	7.2	8.5	8.4	8.6	n.p	

10.1.1. All drug- and alcohol-related ambulance attendances

While people of all ages are affected by non-fatal overdose, young people account for the greatest proportion of drug- and alcohol-related ambulance attendances. As shown in Figure 86, people aged 15 to 24 accounted for the highest proportion of drug- and alcohol-related ambulance attendances in 2022 (20.9% or 33,438 attendances), followed by those aged 25-34 (19.2% or 30,617). Approximately one-third of attendances involved a person aged 45 or older: those aged 45 to 54 accounted for 16.1% (or 25,780) while those aged 55 and above accounted for 18.2% (or 29,043).

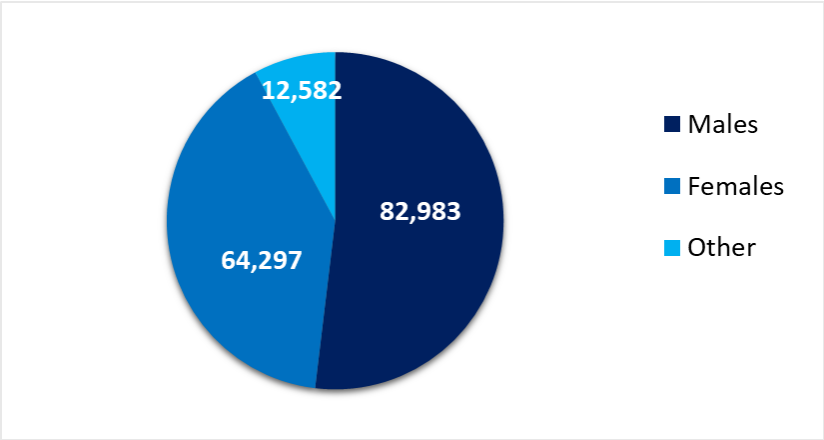
[98] 'Opioid analgesics' in this section include oxycodone, codeine, dextropropoxyphene, fentanyl, hydromorphone, morphine, pethidine, tramadol, and others.

Figure 86: Number of drug- and alcohol-related ambulance attendances, by age group, 2022



Drug- and alcohol-related ambulance attendance data suggest that sex differences are less pronounced for this cohort of individuals compared to individuals suffering fatal overdose. As discussed in Chapter 6, unintentional drug-induced deaths are generally more common among males than females, with males accounting for 65.9% of all drug-induced deaths in Australia in 2022. In comparison, males accounted for 51.9% (or 82,983) of all drug- and alcohol-related ambulance attendances in 2021-2, while females accounted for 40.2% (or 64,297) (Figure 87).[99]

Figure 87: Number of drug- and alcohol-related ambulance attendances, by sex, 2022

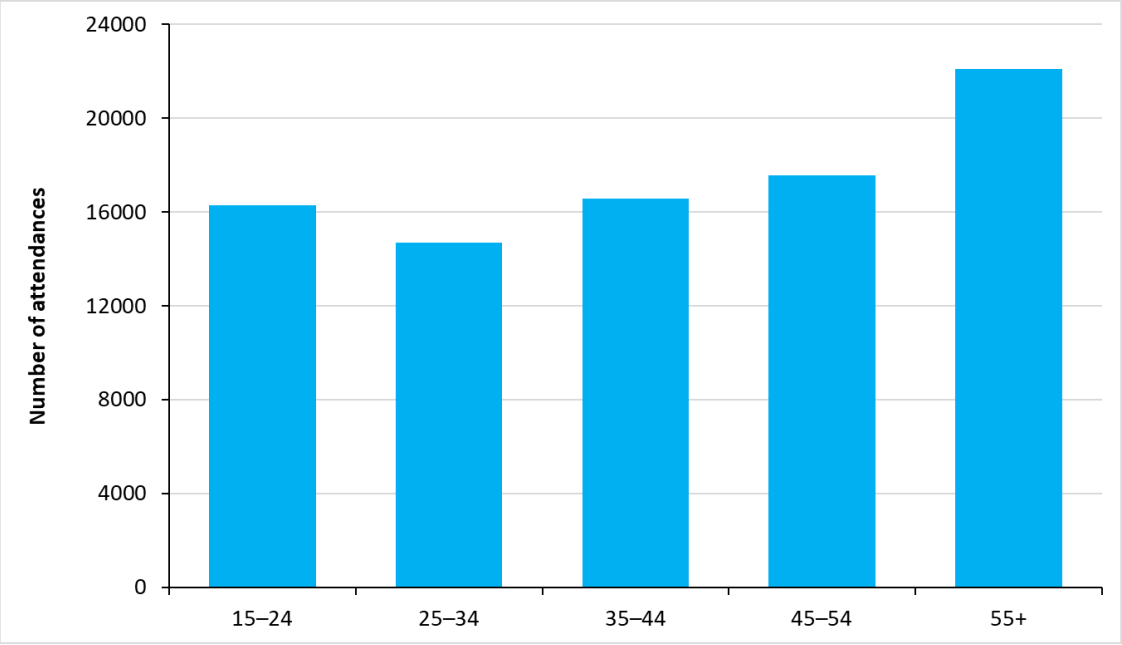


[99] The remaining 7.9% include attendances for people identified as intersex, non-binary, or for whom sex information was not stated.

10.1.1. Alcohol

Unlike trends observed for other drug types, older age groups account for the highest proportion of ambulance attendances due to alcohol. As shown in Figure 88, patients aged 55 and over accounted for the highest proportion of alcohol-related attendances (23.9% or 22,101 attendances), followed by those aged 45-54 (19% or 17,568). Despite this, the prevalence of alcohol-related harm among young people also remains high, with 15 to 24-year-olds accounting for almost one sixth of alcohol-related ambulance attendances for the year (17.6% or 16,292).

Figure 88: Number of drug- and alcohol-related ambulance attendances involving alcohol by age group, 2022

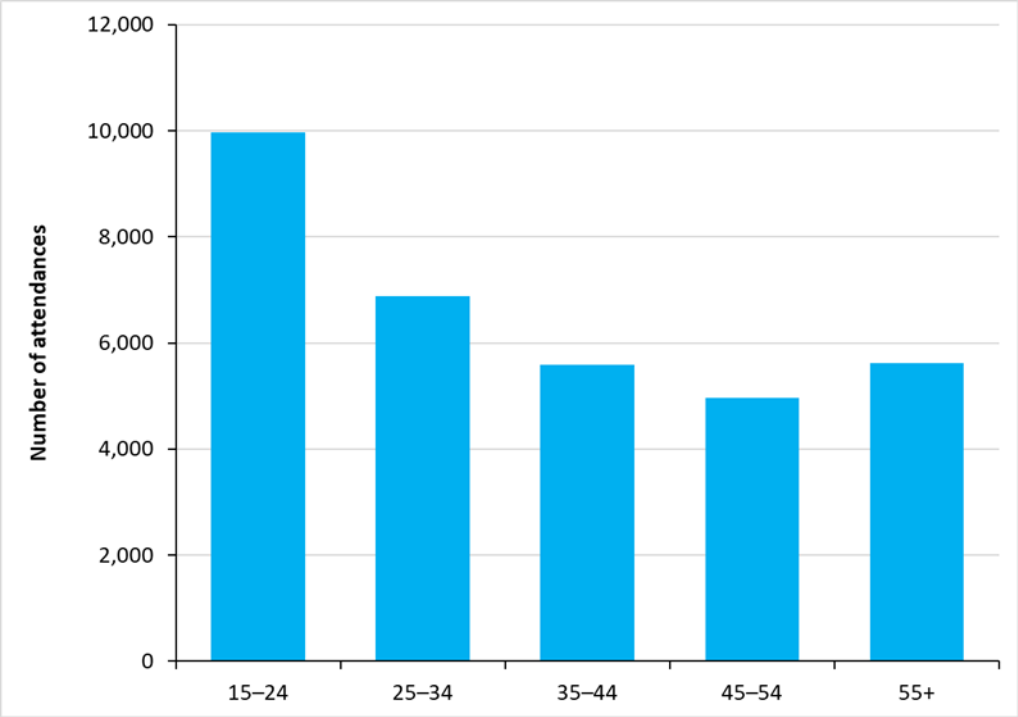


Ambulance attendances due to alcohol are more likely to involve males than females: males accounted for more than half (56.4% or 52,146) of such attendances in 2022. More than one in four (27.3%) alcohol-related ambulance attendances involved a male aged 45 and older, with those aged 44 to 54 accounting for 11.4% (or 10,568) and those aged 55 and over accounting for 15.9% (or 14,665).

10.1.2. Pharmaceutical drugs

Young people accounted for the majority of ambulance attendances due to suspected pharmaceutical drug use in 2022. As shown in Figure 89, people aged 15 to 24 accounted for the greatest proportion of attendances involving 'any pharmaceutical' (29.9% or 9,965 attendances), followed by 25–34-year-olds (20.7% or 6,885) and those aged 50 and over (16.9% or 5,613).

Figure 89: Number of drug- and alcohol-related ambulance attendances involving any pharmaceutical by age group, 2022



Unlike ambulance attendances due to the suspected use of illicit drugs, which are far more common among males than females, females account for the majority (58.8% or 19,594) of ambulance attendances involving pharmaceutical drugs. In 2022, females accounted for more than half of attendances involving the suspected use of benzodiazepines (54.1% or 5,562), opioid analgesics (55.6% or 2,592), and anti-depressants (69% or 4,084). Females aged 15 to 24 accounted for almost one-third (29.9% or 9,965) of all ambulance attendances involving pharmaceutical drugs in 2022.

Age and sex-related patterns in ambulance attendance data vary according to the type of pharmaceutical drug suspected to have been involved. Key trends include:

- People aged over 55 accounted for one-quarter (25.3%) of attendances involving opioid analgesics.
- Females aged 45 and above account for almost one in four (24.5% or 1,141) ambulance attendances involving opioid analgesics, while males in the same age group accounted for one in five (20.1% or 938) ambulance attendances involving opioid analgesics.
- More than half (56.6%) of ambulance attendances involved people aged under 35.
- More than one in three (36%) of ambulance attendances involving anti-depressants were for people aged 15-24
- Females aged 15-24 accounted for over one if four (27.3% or 1,614) ambulance attendances involving antidepressants, more than three times that of males in the same group (8.3% or 492).
- Almost half (46% or 4,845) of benzodiazepine-related ambulance attendances involved someone aged 34 and below: 23.5% (or 2,438) among the 15-24 age group and 23.2% (or 2,407) among people 25 to 34.
- Females aged 25 to 34 accounted for at least one in ten (12.4% or 1,270) ambulance attendances involving benzodiazepines.

10.1.3. Illicit drugs

There are clear age and sex-related patterns in ambulance attendance data involving suspected illicit drug use. Across the six jurisdictions, people aged 15 to 24 accounted for the highest proportion of attendances due to the suspected use of ecstasy (55.6% of such attendances or 749), cocaine (36.6% or 1,041) and cannabinoids (34.8% of such attendances or 5,495).[100] People aged 25 to 34 accounted for the highest proportion of amphetamine-related ambulance attendances (33.4% of such attendances or 4,119), followed by those aged 35 to 44 (26.7% or 3,297). People aged 35 to 44 accounted for the greatest proportion of ambulance attendances involving heroin (31.9% of such attendances or 1,369), followed by people aged 45 to 55 (23.5% or 1,008). Less than 10% of suspected heroin-related ambulance attendances involved someone aged 15 to 24.

Unlike trends observed with pharmaceutical drugs, ambulance attendances involving illicit drugs are more likely to involve males than females, regardless of drug type. Males accounted for the majority of attendances involving the suspected use of amphetamines (60.4% of such attendances or 7,420), cannabinoids (57.1% or 8,977), heroin (69.1% or 2,961), cocaine (61.1% or 1,680), and ecstasy (54.3% or 721).

[100] As synthetic cannabinoid receptor agonists (SCRAs) are far more toxic than naturally occurring phyto-cannabinoids such as THC, it is likely that many of these attendances were due to a synthetic product; the data, however, do not differentiate between the two.

Additional age and sex related trends in ambulance attendances involving illicit drugs include:

- Males aged 25 to 34 accounted for at least one in five (21.5% or 2,644) amphetamine-related ambulance attendances – the highest proportion of any single group.
- Males aged 15 to 34 accounted for more than one-third of all ambulance attendances involving cannabinoids: males aged 15 to 24 accounted for 18.6% or 2,925 attendances, while males aged 25 to 34 accounted for 15.2% or 2,388 attendances.
- Three in four (84.9% or 1,127) ecstasy-related attendances were for people aged 15-34, males accounted for 54% or 721 of these.
- Males aged 35 to 44 accounted for one in every four (23% or 985) ambulance attendances involving heroin.
- Males aged 25 to 34 accounted for approximately one in four (25.5 or 700) ambulance attendances involving cocaine.

10.1.4. Proportion of ambulance attendances with suspected poly-drug use

Across the six jurisdictions, the total proportion of drug- and alcohol-related ambulance attendances with suspected poly-drug use ranged from 17.5% in New South Wales to 22% in Victoria; however, this varied considerably according to the primary drug type involved.

As outlined in Table 23, the drug types for which the greatest proportion of ambulance attendances were suspected to have involved additional drug types include ecstasy (79.5% of attendances involved other drugs), opioid analgesics (77.1%), anti-depressants (73.4%), and cocaine (72.9%). More than half (54.5%) of all ambulance attendances due to pharmaceutical drugs likely involved other drug types, while less than one in five (17.7%) alcohol-related ambulance attendances were reported as involving other drugs.

These data also reveal that ambulance attendances related to a single drug type were most common for alcohol, with 82.3% reportedly involving alcohol and no other substance.

Table 23: Drug- and alcohol-related ambulance attendances for selected drugs, proportion (%) with multiple drugs present, 2022[101]

Drug type	% of attendances that involved other drug types
Ecstasy	79.5
Opioid analgesics	77.1
Anti-depressants	73.4

[101] Data presented in this table are the combined average of New South Wales, Victoria, Queensland, the Australian Capital Territory, and Tasmania.

Cocaine	72.9
Benzodiazepines	72.5
Any pharmaceuticals	54.5
Cannabis	44.5
Amphetamines	41.3
Heroin	38.8
Alcohol	17.7

10.2. Drug- and alcohol-related hospitalisations

In the 2021-22 financial year, there were 135,179 drug- and alcohol-related hospitalisations in Australia (or 370 hospitalisations per day).[102]

Table 24 shows that alcohol accounted for almost two thirds (59.4% or 80,259) of drug- and alcohol-related hospitalisations. All remaining drug types – including illicit drugs and pharmaceuticals – were reportedly involved in significantly fewer hospital episodes than alcohol.

Suspected use of amphetamines and other stimulants accounted for 9% of drug- and alcohol-related hospitalisations (12,214); 7.4% or 10,069 were related to methamphetamine. Pharmaceutical central nervous system depressant drugs (including benzodiazepines, anti-epileptic, sedative-hypnotic and anti-parkinsonism drugs) accounted for 6.1% of hospitalisations; almost half of these (46%, or 3,799) were related to benzodiazepines.

Opioids – the most common drug type recorded in drug-induced deaths (see Chapter 4) – were suspected to have contributed to 4.3% of drug- and alcohol-related hospitalisations for the year (5,836).[103]

[102] Australian Institute of Health and Welfare (2024). *Alcohol, tobacco and other drug use in Australia: Health impacts.*
[103] Australian Institute of Health and Welfare (2023). *Alcohol, tobacco and other drug use in Australia.*

Table 24. Number of drug- and alcohol-related hospitalisations by drug type, 2021-22

Drug identified in principal diagnosis	Total	%
Alcohol	80,259	59.4
Methamphetamine	10,069	7.4
Pharmaceutical central nervous system depressants[104]	8,248	6.1
Non-opioid analgesics[105]	7,269	5.4
Cannabinoids	6,854	5.1
Opioids	5,836	4.3
Other sedatives and hypnotics[106]	4,449	3.3
Benzodiazepines	3,799	2.8
Anti-psychotics and neuroleptics	3,709	2.7
Anti-depressants	3,708	2.7
Other amphetamines and stimulants[107]	2,145	1.6
Cocaine	1,256	0.9
Unspecified drug use and other drugs not elsewhere classified	865	0.6
Volatile solvents	657	0.5
Hallucinogens	314	0.2
Nicotine	119	0.1
Total	**135,179**	

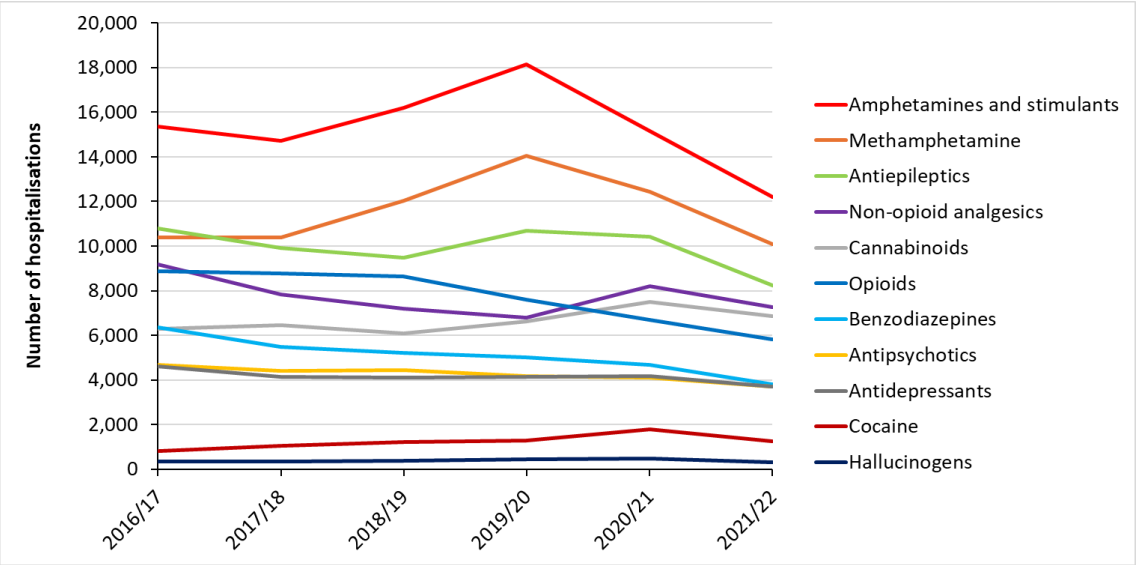
Since 2016-17, the number of drug- and alcohol-related hospitalisations has remained stable (from 137,728 to 135,179 in 2021-22). The most significant increase occurred between 2019-20 and 2020-21 when hospitalisations rose by 7.9%, primarily due to a rapid increase in the number of hospitalisations involving alcohol (from 74,511 to 86,408 in 2020-21, before decreasing to 80,259 in 2021-22).

The reported increase in alcohol-related hospitalisations is in line with an increase in national alcohol consumption: approximately one in five Australians reported increased alcohol consumption since the start of the pandemic in May 2020.[108] Furthermore, alcohol retail sales increased by 29% (or $3.6 billion) from 2019 to 2021, reaching an all-time high of $15.9 million.[109]

[104] Includes anti-epileptics, anti-parkinsonism drugs, benzodiazepines and 'other sedatives and hypnotics'. Excludes alcohol.
[105] Includes paracetamol.
[106] Excludes alcohol and benzodiazepines.
[107] Excludes methamphetamine.
[108] Australian Institute of Health and Welfare (2023). *Alcohol, tobacco & other drugs in Australia: Impacts of COVID-19 on alcohol and other drug use.*
[109] Foundation for Alcohol Research and Education (2022). *Alcohol retail during COVID-19 (2020-2021).*

As shown in Figure 90, benzodiazepine related hospitalisations decreased following a peak in 2019-20 (40% decrease), as have opioids (34.2%% decrease) and non-opioid analgesics (20.7% decrease).[110] In contrast, there were increased in hospitalisations related to the suspected use of cocaine (53.5% increase) and alcohol (14% increase) since 2016-17. By contrast, amphetamine-related hospitalisations peaked in 2019-20 at 18,157 before decreasing to 12,214 in 2021-22 Methamphetamine-related hospitalisations reached a peak of 14,053 in 2019-20.

Figure 90. Number of drug- and alcohol-related hospitalisations in Australia, by suspected drug type (excluding alcohol) 2016-17 to 2021-22



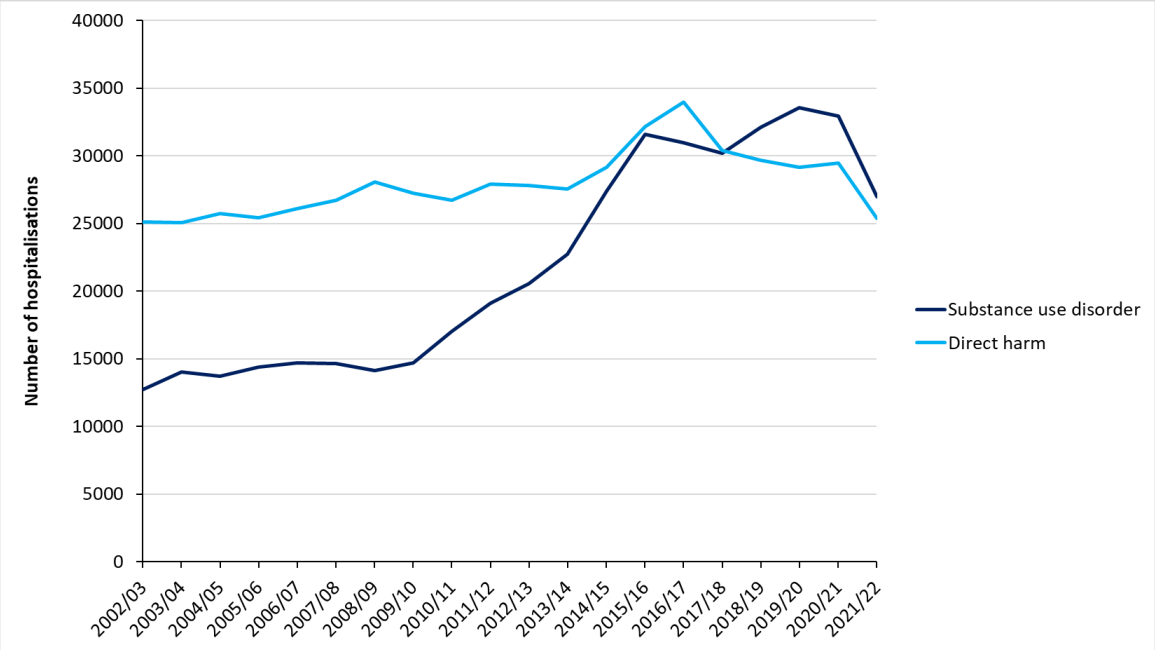
Hospitalisations may be further disaggregated according to the two types of principal diagnosis: those relating to a substance use disorder and those relating to direct harm due to selected

[110] For cannabinoid-related hospitalisations, the data do not differentiate between synthetic cannabinoid receptor agonists (or SCRAs) and naturally occurring cannabinoids. As SCRAs are far more toxic than natural phyto-cannabinoids such as THC, it is likely that many of these attendances were due to a synthetic cannabinoid.

substances.[111] Direct harm may refer to accidental or intentional drug poisoning (or overdose), or it may refer to other types of harm such as inadvertent toxicity due to drug interactions.

In 2021-22, approximately 51% (or 26,968) of all drug-related hospitalisations (excluding alcohol and nicotine) received a primary diagnosis relating to a mental or behavioural disorder due to substance use, while the remaining 48% (or 25,400) were due to direct harm (e.g. poisoning). Figure 91 shows that the number of hospitalisations due to substance use disorder has more than doubled since 2002-03, from 12,704 to 26,968 in 2021-22 (an increase of 112.3%). This has been driven primarily by a rapid increase in the number of drug-related hospitalisations due to psychosis, from 2,610 in 2009-10 to 9,259 in 2021-22. The number of hospitalisations due to direct drug-related harm has remained steadier, rising from 25,139 in 2002-03 to a peak of 33,973 in 2016-17 before declining to 25,400 in 2021-22.

Figure 91. Number of drug- and alcohol-related hospitalisations by principal diagnosis, 2002-03 – 2021-22



While the number of hospitalisations for substance use disorders was higher among males (16,835) than females (10,119) in 2021-22, the number of hospitalisations for direct drug-related harm was higher among females (15,555 compared with 8769).

[111] See further: AIHW (2022). *Alcohol, tobacco & other drugs in Australia: Glossary*.

Hospitalisation for substance use disorders was most common among those aged 30-29 (8,546) and 20-29 (8,420) in 2021-22, while hospitalisation for direct drug-related harm was most common among those aged 10-19 (6,302) and 20-29 (5,643). Hospitalisations for drug poisoning among 10 to 19-year-olds increased by 72.6% since 2003-04, primarily due to increases in the suspected use of non-opioid analgesics such as paracetamol (3,335 hospitalisations in 2021-22).

The number of suspected paracetamol poisonings has increased in Australia over the past decade, prompting the February 2023 interim decision to reduce the maximum size of packs and reschedule larger pack sizes to 'Pharmacist Only' in an attempt to minimise the incidence and harm from intentional self-poisoning.[112] Paracetamol poisoning is associated with acute liver toxicity and can result in death in a minority of cases (0.2-0.5%).[113]

The number of hospital admissions due to suspected paracetamol poisoning steadily increased from 8,617 in 2009-10 to 11,697 in 2016-17 before decreasing to 8,723 in 2019-20. Most of these involved deliberate self-poisoning. The greatest increases in paracetamol poisoning admissions from 2009-10 to 2019-20 involved young people aged 10 to 24 and females, who accounted for two thirds of admissions. Paracetamol accounted for a significant proportion of poisoning hospitalisations among all age groups; however, this was most pronounced for adolescents, for whom paracetamol accounted for around 50% of all poisonings from 2009-10 to 2019-20. Other types of non-steroidal anti-inflammatory drugs such as ibuprofen and aspirin were less prevalent among poisoning data. [114]

10.3. Poisons information centres

Additional data on drug-related harm are available from Australia's four Poisons Information Centres, located in Western Australia, Victoria, New South Wales and Queensland. Paracetamol is the most common pharmaceutical for which advice is sought from these centres in Australia.[115] The

[112] Therapeutic Goods Administration (2023). *Interim decisions on paracetamol access controls in the Poisons Standard – Questions and answers*.
[113] Buckley, N., Calear, A., & Christensen, H. (2022). *Independent expert report on the risks of intentional self-poisoning with paracetamol*.
[114] Buckley, N., Calear, A., & Christensen, H. (2022). *Independent expert report on the risks of intentional self-poisoning with paracetamol*.
[115] Austin Health (2018). *Victorian Poisons Information Centre: Annual Report 2018*; Children's Health Queensland Hospital and Health Services (2019). *Queensland Poisons Information Centre: Annual Report 2019*; Western Australian Poisons Information Centre (2022). Western Australian Poisons Information Centre: *Annual Report 2022*. New South Wales Poisons Information Centre (2023). *Top 25 substances resulting in exposure calls to the NSW Poisons Information Centre*.

introduction of restrictions on the sale of codeine in Australia in 2018 has been associated with reduced paracetamol-related hospital admissions.[116]

Research suggests that a large proportion of intentional paracetamol poisonings occur in the context of poly-drug use. Findings of a 2022 literature review suggest between 25% and 68% of intentional paracetamol poisonings involve co-ingestion of other drugs (usually other analgesics) or alcohol. Co-ingestion of these drugs is generally more common among older cohorts and males. [117]

[116] Noghrehchi. F., Rose Cairns, R., Buckley, N., (2023) Hospital admissions for paracetamol poisoning declined following codeine re-scheduling in Australia, International Journal of Drug Policy, Volume 116.
[117] Buckley, N., Calear, A., & Christensen, H. (2022). *Independent expert report on the risks of intentional self-poisoning with paracetamol*.

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12. *Appendix 1 – technical specifications*

12.1. Source of fatal overdose data

The fatal overdose data in this report are based on cause of death information, which is certified by doctors or coroners (as the case requires), collected by state and territory governments, and validated and compiled by the ABS.

12.2. Preliminary and revised data

In Australia, all suspected drug-induced deaths must be reported to a coroner.[118] These investigations can, in some instances, take several years. Therefore, the first available data are preliminary; they are then revised the following year, and then finalised the year after that.

In Penington Institute's *Australia's Annual Overdose Report 2023*, the data for 2020 were revised, the data for 2021 data were preliminary, and the data for 2022 were not yet available. In the current 2024 report, data for 2020 are finalised, data for 2021 are revised, and data for 2022 are preliminary. This means that 2021 and 2022 data are likely to increase in subsequent reports, as cases progress and deaths are classified by coroners. This also means that, in this report, the data for 2020 and 2021 will appear different from last year's Penington Institute report.

Table A1 illustrates the status of the data in this year's report and in reports from the previous two years.

[118] Typically, coroner referred death data are revised 12 months and 24 months after data are first published. Following a usual revisions cycle, this would mean that coronial cases for 2022 would be first reviewed in early 2025. However, at the time of coding the preliminary 2022 data there was a higher proportion of open coroner cases compared to previous years (65.2% in 2022 versus a 5-year average for 2015-2019 of 56.2%). This was similar to the proportion of open cases in 2021 (67.2%) at the time of preliminary coding of revisions. Due to the complexity of a coronial investigation, drug-induced deaths are particularly sensitive to the revisions process and are a cause of death that records increases when coronial investigations are closed. In consideration of this, a preliminary review of the most recent years data has been conducted in the 2023 and 2024 revision cycles. This preliminary revision of 2022 data has resulted in an additional 52 deaths identified as drug-induced and an increase of 541 specified drug types mentioned in the 2022 dataset. Further information is available in the Technical note: Cause of death revisions, 2022 preliminary revision.

Table A1. Status of data, 2019-2022

2022 report		2019 – revised	2020 – preliminary		
	All drug-induced deaths	2,354	2,220		
	Unintentional drug-induced deaths	1,757	1,654		
2023 report		2019 – finalised	2020 – revised	2021 – preliminary	
	All drug-induced deaths	2,368	2,354	2,231	
	Unintentional drug-induced deaths	1,779	1,796	1,675	
2024 report			2020 – finalised	2021 – revised	2022 – preliminary
	All drug-induced deaths		2,379	2,277	2,356
	Unintentional drug-induced deaths		1,826	1,740	1,878

12.3. Definitions

These definitions are based on the data provided by the ABS, summarised as per ICD-10 coding.[119]

Drug: for the purpose of this report includes illicit drugs, pharmaceutical products, alcohol, and other substances with a psychoactive effect that may be licit, illicit or of undetermined legal status. It is important to note that ABS may report drug-induced deaths and alcohol-induced deaths separately, however, for the purpose of this report, alcohol is included as a drug. Tobacco is not included in this definition.

Drug-induced death means a death caused directly by drug use, due to all intents (i.e. homicide, suicide, accidents and undetermined intent). This may include a range of specific causes of death and clinical states which broadly fall into either drug poisoning or mental and behavioural disorders

[119] World Health Organisation (2016). *International statistical classification of diseases and related health problems 10th Revision.*

due to psychoactive substance use. The definition excludes deaths indirectly related to drug use, such as where drugs may have played a contributory role.

Unintentional drug-induced deaths means drug-induced deaths determined to be unintentional by legal rulings.[120] This includes deaths resulting from exposures to drugs or pharmaceuticals where harm or death was not the primary intent, accidental overdose of a drug, wrong drug given or taken in error, drug taken inadvertently, misadventures in the use of drugs, medicaments and biological substances in medical and surgical procedures, or where a harmful amount of drug is taken in error with therapeutic intent resulting in overdose. This does not include circumstances where the correct drug was properly administered in a therapeutic dose, when death is caused by an adverse effect.

The definition of 'drug' is consistent with the inclusions first defined (for example, it does not include accidental poisoning due to pesticides or organic solvents or carbon monoxide).

Intentional drug-induced death or **drug-induced suicides** include intentional self-inflicted poisoning by exposure to a range of drug types including legal drugs, illicit drugs and/or alcohol.[121]

Drug-related hospitalisation means episodes of hospital care that have a principal diagnosis of substance misuse disorder or harm (including accidental, intended or self-inflicted) due to drug use.[122]

Principal diagnosis is the diagnosis established to be chiefly responsible for the hospitalisation episode.

Road traffic accidents include all deaths due to road-related crashes, involving trucks, cars, buses, pedestrians, motorbikes and cyclists. For more detail see ICD-10 Version: 2019. Refers to ICD-10 codes V01-V04, V06, V09-V80, V87, V89 and V99.

Car crashes means persons who died as occupants of a car involved in a collision or crash.

[120] Coroners may not classify a death as intentional, even if it may have been; coronial practice likely varies from state to state and from coroner to coroner. There is thus a possibility that some deaths ruled unintentional may actually have been intentional.

[121] There is no systematic definition to differentiate intentional from unintentional death, and coroners may not make a finding on intent for various reasons. Care should therefore be taken in interpreting figures relating to intentional self-harm. For more information on the coding of suicide, see ABS (202). *Deaths due to intentional self-harm (suicide).*

[122] As defined by the Australian Institute of Health and Welfare, see: Glossary - Australian Institute of Health and Welfare (aihw.gov.au).

12.3.1. Description of drug groups

These are the groupings used by the ABS to provide the cause of death data, acknowledging that different data sources may use different groupings.

Drug	Definition	ICD-10 code
Alcohol	Includes ethanol, methanol, ethylene glycol, isopropanol, and butanol; noting however that what is legally purchased as an alcoholic beverage will contain ethanol. Alcohol is a central nervous system depressant, and when mixed with other depressants in a poly-drug setting, can exacerbate effects and lead to respiratory depression (slow and/or ineffective breathing).[123]	T51.
Anti-convulsants (including neuropathic pain modulators, in addition to traditional anti-convulsants	Medicines that were developed to treat epilepsy, but may now be prescribed in Australia to treat chronic neuropathic (nerve) pain and may also be prescribed off-label to treat non-neuropathic pain, anxiety, and other conditions. These are sometimes referred to as 'anti-epileptics'. Pregabalin and gabapentin are included in this group; some reports have emerged of non-medical use of these drugs.[124]	T427.
Anti-depressants	medicines that are prescribed for the treatment of mental health disorders such as major depressive disorder and obsessive compulsive disorder.125 This group includes tricyclic and tetracyclic anti-depressants, monoamine-oxidase-inhibitor anti-depressants, and other and unspecified anti-depressants, such as selective serotonin reuptake inhibitors.	T430-432.
Anti-psychotics	Medicines that are used to treat mental health conditions where there is a disorder in thought content or mood, such as schizophrenia, mania with bipolar disorder and other mental health indications, and are often prescribed off-label for their sedative effects.	T435.

[123] ABS (2018). *Drug induced deaths in Australia: A changing story.* Australian Bureau of Statistics.
[124] NPS Medicine Wise (2021). *Gabapentinoid misuse: a growing problem*.
[125] ABS (2018). *Drug induced deaths in Australia: A changing story.* Australian Bureau of Statistics.

	This group includes drugs such as quetiapine, olanzapine, risperidone, paliperidone, amisulpride, and lithium Some reports have emerged of non-medical use, particularly with quetiapine.[126].	
Benzodiazepines	Medicines used to treat anxiety, relax people, treat some types of seizures and assist with sleep. The most commonly prescribed drugs in this group in Australia are diazepam and temazepam.[127] Long-term use of benzodiazepines can lead to the development of tolerance and physical and psychological dependence. Like opioids, benzodiazepines slow down the central nervous system and consistently rate as one of the most common drug groups detected in drug-induced deaths.[128] When taken alone, benzodiazepines' depressant effect on the respiratory system does not usually result in complete loss of breathing function. However, their effect on respiration is increased when combined with other drugs like alcohol or opioids, making concurrent use of benzodiazepines with alcohol and/or opioids especially dangerous.	T424.
Cannabinoids	Plants or drugs containing chemical compounds that act as agonists on the brain's cannabinoid receptors. The most notable cannabinoid is tetrahydrocannabinol (THC), the primary psychoactive substance found in the cannabis plant. However, this category also includes synthetic cannabinoid receptor agonists or 'SCRAs' (often sold as 'synthetic marijuana' or other names such as 'spice'), which can be	T407, F12. For poly-drug use tables, only T407 is included.

[126] Sutherland, R., Jayathilake, R., Peacock, A., Dietze, P., Bruno, R., Reddel, S., & Gisev, N. (2021). Trends and characteristics of extra-medical use of quetiapine among people who regularly inject drugs in Australia, 2011–2018. *Drug and Alcohol Dependence*, *221*, 108636; Lee, J., Pilgrim, J., Gerostamoulos, D., Robinson, J., & Wong, A. (2018). Increasing rates of quetiapine overdose, misuse, and mortality in Victoria, Australia. *Drug and Alcohol Dependence*, *187*, 95-99.

[127] Australian Institute of Health and Welfare (2023). *Alcohol, tobacco & other drugs in Australia: Pharmaceuticals.*

[128] ABS (2018). *Drug induced deaths in Australia: A changing story.* Australian Bureau of Statistics.

	highly potent and have been linked to an array of harms including fatal overdoses. In this report, the term 'cannabinoids' includes phyto-cannabinoids (naturally occurring cannabinoids) such as THC and SCRAs. The medicinal value of pharmaceutical cannabinoids in treating a variety of conditions is subject to ongoing debate, though the use of pharmaceutical cannabinoids for medicinal purposes is increasing.	
Heroin (diamorphine)	An opiate derived from the opium poppy most commonly used for recreational and/or non-medical purposes. In Australia, heroin is typically injected,[129] though it can be smoked, snorted or swallowed. As the sale of heroin is not regulated, it may be mixed with a range of harmful adulterants. Prescription diamorphine is used therapeutically in many parts of the world as a pain treatment and for the treatment of opioid dependence.	T401.
Methadone	is a synthetic opioid *not* included in the pharmaceutical opioid category as it is captured separately in the data. It is primarily used as a treatment for opioid addiction as part of medically-assisted treatment for opioid dependence (MATOD), though it is also used in the treatment of chronic pain. While taking regular methadone in the context of MATOD greatly reduces a person's risk of overdose (by around half), methadone (like all opioids) can be a risk factor for overdose if other central nervous system depressants such as opioids, benzodiazepines, or alcohol are taken concurrently, or too high a dose is used on initiation of treatment, or if it is	T403.

[129] Sutherland, R., Karlsson, A., King, C., Jones, F., Uporova, J., Price, O., et al (2022). *Australian drug trends 2022: key findings from the National Ecstasy and Related Drugs Reporting System (EDRS) interviews*. Sydney: National Drug and Alcohol Research Centre, UNSW Sydney.

	used intravenously. This risk is greatest for people who are not used to methadone, including those just starting in MATOD. National opioid pharmacotherapy is expanding, including use of other drugs such as buprenorphine (which is longer lasting than methadone). Data presented in this report refers to methadone only.	
Opioids	Substances that act on the body's opioid receptors. Opioids depress the central nervous system (including the respiratory system) making overdoses involving opioids particularly dangerous.	T400-T404, T406.
Natural or semi-synthetic opioids	A group of opioids including oxycodone, morphine, codeine.	T402.
Synthetic opioids	A group of opioids including fentanyl, pethidine and tramadol. Some synthetic opioids such as fentanyl and fentanyl analogues are highly potent.	T404.

Other pharmaceuticals	A broad group that includes anti-convulsants, anti-depressants, anti-psychotics, sedatives and hypnotics, and anaesthetics, but excludes opioid analgesics and benzodiazepines	T412, T426, T427, T430-T432, T435.
Other sedatives	A class of drugs with sedating and anaesthetic effect; ketamine is included in this group, acknowledging that it may be used as a hallucinogen in a recreational context.	T412.
Pharmaceutical drug	Pharmaceutical drugs, prepared for pharmaceutical purposes, regardless of whether they were acquired through prescription, over the counter purchase, diversion, or through other illegal means.	n/a
Pharmaceutical opioids	Refers to opioids of a pharmaceutical origin including oxycodone, morphine, codeine, fentanyl, pethidine, tramadol, tapentadol, buprenorphine and hydromorphone. The ABS groups some opioids together into single categories: **oxycodone, morphine and codeine** form one category, and **fentanyl, pethidine and tramado**l form another. This report uses ABS data and is therefore unable to provide further information relating to individual drugs within these categories. Pharmaceutical opioids can be taken medically (for the purpose they were prescribed), or extra-medically (for any purpose other than what they were prescribed for). Methadone is excluded from this category for these analyses.	T402, T404.
Specified anti-convulsants and sedatives	A group of a drugs which, depending on dose, may exhibit sedative or hypnotic effects. Zopiclone, zolpidem, and valproic acid are included in this group. In the data provided by the ABS, these are grouped separately from benzodiazepines, acknowledging that in some data sources, these are aggregated.	T426.

Stimulants	A class of drugs that are primarily taken for recreational or non-medical purposes, though pharmaceutical amphetamines are also used in medical treatments. Illicit amphetamines are commonly available in powder (known as 'speed'), tablets, and increasingly as crystal methamphetamine[130] ('crystal meth' or 'ice'), a highly potent form. In this report, the recreational drug MDMA or 'ecstasy' is classed as a stimulant.	T436, F15. For poly-drug use tables, only T436 is included.
Succinimides and oxazolidinediones	A group of drugs that have anti-convulsant or sedating-hypnotic effects; gamma hydroxybutyrate (GHB) is a psychoactive-sedative drug included in this group.	T422.

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12.3.2. Poly-drug use

It is important to note that most drug-induced deaths are caused by a combination of drugs and are not the result of a single drug. For example, benzodiazepines have been recorded as the second most common drug group associated with drug-induced deaths, but they are rarely the sole cause of death. Most benzodiazepines determined to have contributed to a drug-induced death were used concurrently with other drugs.

The fatal overdose data used to produce this report identify the involvement of drugs that were determined to have contributed to a person's death, however, do not necessarily indicate the primary cause of death. For example, a coroner may determine that while opioids were the primary cause of one individual's death, alcohol and benzodiazepines also contributed. In this case, this individual would be included in three drug-type categories, however, this individual will only be counted once in the total.

If multiple drugs are involved in a death and the coroner has not determined that one drug was the cause of death, then the underlying cause is coded to ICD Code X44 (Accidental poisoning by and exposure to other and unspecified drugs, medicaments and biological substances) and all the drugs involved are listed as multiple causes in the order listed by the coroner.

[130] Methamphetamine is also known as 'methylamphetamine'.

12.4. Factors of interest

Factors of interest for this report were:

- **Drug type:** definitions as previously described.
- **Sex:** refers to biological characteristics, as distinct from gender.
- **Age:** this refers to age at death; where the age of the deceased was not stated, these deaths are still included in the overall totals.
- **Indigenous status (Aboriginality):** this includes persons who identified as Aboriginal, Torres Strait Islander or both, with non-Indigenous meaning people who did not identify as Aboriginal or Torres Strait Islander or for whom Indigenous status was not stated. People with an identified Indigenous status are referred to as Indigenous in this report. Additionally, data on Indigenous status are only based on New South Wales, Queensland, South Australia, Western Australia, and the Northern Territory, as these are the only jurisdictions that have a sufficient level of Indigenous identification to support this analysis.
- **Socio-economic status (SES):** socio-economic status is described on the basis of Socio-Economic Indexes for Areas (SEIFA) using the Index of Relative Socio-Economic Advantage and Disadvantage (IRSAD),[131] and the deciles (ten equal groups) are based on the ranking of an area within Australia (not the ranking within its state/territory). The scores are based on the area in which the person was usually resident, not on the 'social class' of the individual; a low score indicates an area with relatively greater disadvantage (e.g. many households with low incomes or in unskilled occupations) and a general lack of advantage (e.g. few households with high incomes). Limitations to this approach exist; for example, Richmond in Victoria is in decile 9 of SEIFA-IRSAD in Australia, and is therefore among the most advantaged areas, but also has a high density of low-income housing and has been the site of many drug-induced deaths involving heroin, due to a strong localised drug market.

Further, data are described spatially on the basis of:

- **State or territory:** causes of death statistics for states and territories have been compiled based on the state or territory of usual residence of the deceased, regardless of where in Australia the death occurred. Deaths of persons usually resident overseas that occur in Australia are included in the state/territory in which their death was registered. In some instances, data are presented for the Northern Territory, Tasmania

[131] For a description of SEIFA and IRSAD, see ABS (2021). Socio-Economic Indexes for Areas (SEIFA), Australia. Australian Bureau of Statistics

and the Australian Capital Territory combined, in order to have sufficient numbers to calculate a rate.

- **Regionality:** greater capital city or regional area;[132] the Australian Capital Territory cannot be differentiated in this way.
- **Region of birth:** the world region in which the person was born.[133]
- **Remoteness area:** a geographical classification that defines locations in terms of their physical distance by road from the nearest urban centre. This classification is designed to be a measure of a location's relative access to services.[134]
- **Primary Health Network:** Primary Health Networks (PHNs) are healthcare bodies coordinating primary health and other services for geographic catchment areas in Australia. There are 31 PHNs in Australia.
- **Local areas:** Statistical Area 3 (SA3)[135] is a means of regional grouping used by the ABS. These areas typically have populations between 30,000 and 130,000 persons. SA3s are often the functional areas of regional towns and cities with a population in excess of 20,000 or clusters of related suburbs around urban commercial and transport hubs within the major urban areas.

12.5. Data presentation

When data are presented as a rate per 100,000 population, this is an age-standardised death rate,[136] based on the mid-year population. These data were either provided by the ABS or were calculated using estimated resident population data from the ABS.[137] Some rates are unreliable when there are small numbers of deaths over the reference period. Rates calculated when there were fewer than 19

[132] ABS definitions and boundaries of greater capital city statistical areas (GCCSAs) can be found at: https://www.abs.gov.au/geography.
[133] Region of birth is based on the ABS (2016) *Standard Australian Classification of Countries*.
[134] Remoteness areas are based on the ABS (2018) *Australian Statistical Geography Standard (ASGS): Volume 5 – Remoteness structure, July 2016*.
[135] For a description of SA3, see ABS (2016). *Australian Statistical Geography Standard (ASGS): Volume 1 – Main structure and greater capital city statistical areas, July 2016*.
[136] Age-standardised death rates enable the comparison of death rates over time and between populations of different age-structures. They are particularly relevant when comparing with Indigenous populations due to their younger age profile than the general Australian population.
[137] National Australian estimated resident population data for each year are available from ABS (2022) *National, state and territory population*. Data on estimated resident population by regionality are available from ABS (2022) *Regional population*.

deaths should be interpreted with caution, as they can show greater volatility due to the small numbers.[138]

To minimise the effects of localised 'spikes' or outliers, in some instances this report uses comparison periods. These five-year periods are 2008-2012 (the reference period) and 2018-2022 (the recent period). Ratios are then used to show changes in the number of deaths relative to the reference period. They are calculated by dividing the number of deaths in the more recent period by the number of deaths in the reference period. It is important to note that this calculation of ratio is made on unrounded data, therefore, the ratio cannot be calculated exactly from the rounded (to 1 decimal place) rates. A ratio of 2.0 means there were twice as many deaths during 2018-2022 as there were during 2008-2012; a ratio of 3.0 means there were three times as many deaths, and so on. A ratio of 0.5 means there were half as many (50 per cent fewer) deaths in the recent period as in the reference period.

In some instances, where the data are being divided and analysed in small groups, an aggregated group of data is used, rather than analysing the data year by year. For example, data on individual drugs for specific sex and age groups are analysed using aggregated data from 2018-2022. Otherwise, numbers may be too small for meaningful analysis.

Data cubes for all figures are provided at the end of the document in Appendix 2. These contain the values (numbers or rates) from each graph, allowing readers to see the raw data used to produce each graph. To protect confidentiality of individuals, data cells with small values are randomly assigned, and as a result some totals will not equal the sum of their components. This does not affect cells with a zero value.

12.6. Data limitations

Data groupings: The data used to produce this report were provided by the Australian Bureau of Statistics (ABS). The ABS groups substances into single categories (such as the category 'fentanyl, pethidine and tramadol'), using ICD-10 groupings. Data for less common substances (opioids like dextropropoxyphene, tapentadol and others) are not individually collected and so are not included in this report. The limitation of this is that particular substances may dominate the group that they are in (e.g. GHB typically forms the majority of the succinimides and oxazolidinediones group, methamphetamine typically forms the majority of the stimulants group), but this cannot be quantified with the existing data.

[138] When the number of deaths is small, the ABS randomly assigns a value to protect the confidentiality of individuals. As a result, some totals will not equal the sum of their components. Data below the national level (such as state and territory data) are subject to this confidentialisation.

Heroin and morphine: Drug-induced deaths involving heroin may be under-counted, or misattributed to morphine, due to challenges in interpreting toxicity data and the rapid conversion of heroin to morphine in the body after administration.[139]

Limitations relating to drug- and alcohol-related ambulance attendance and hospitalisation data

Data limitations
• The identity of the drugs involved in non-fatal overdoses is rarely confirmed using blood or urine tests. Drug identity is most often recorded in health records based on reports by an individual, family member, friend, bystander, or health care provider. These reports may be inaccurate. In the case of illicit drugs, the unregulated nature of the market means that an individual may not know exactly what is contained within a drug they are using. In these cases, the actual drug associated with the overdose will not be recorded or will be mis-identified. For these reasons, this report uses the term 'suspected' use of drug X.
• An ambulance attendance or hospital presentation may be coded as drug-related harm, but that may include harm that is not directly related to overdose, such as severe skin infections or heart problems due to long-term drug use.
• Ambulance attendances and hospitalisations may involve exposure to more than one drug (including alcohol), which means that data reported by "drug" will not necessarily indicate that the drug is exclusively responsible for the episode (for example attendances counted under "cannabinoids" may also involve exposure to another drug or alcohol).
• A large proportion of overdose hospital presentations are managed exclusively in the emergency department setting, and do not require hospital admission. These episodes would not be captured in hospitalisation data.
• Drug- and alcohol-related ambulance attendance and hospitalisation data do not include episodes for which the individual sought help from sources outside of ambulance or hospitals, such as a local community health centre. As such, the data presented here underestimate the true extent of non-fatal drug- and alcohol-related harm in Australia and should be considered a 'snapshot' of acute harm.

[139] Stam, N. C., Gerostamoulos, D., Pilgrim, J. L., Smith, K., Moran, L., Parsons, S. and Drummer, O. H. (2019). An analysis of issues in the classification and reporting of heroin-related deaths. *Addiction*, 114(3): 504-512.

Appendix 2 – data cubes for figures

12.7. Data cubes for Chapter 5

Data for Figure 1. Number of drug-induced deaths in Australia, compared with road-related deaths, 2002-2022

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
All drug-induced deaths	1,231	1,211	1,231	1,278	1,262	1,480	1,648	1,785	1,756	1,775	1,762	1,768	2,074	2,183	2,296	2,400	2,318	2,368	2,379	2,277	2,356
Unintentional drug-induced deaths	903	901	968	983	952	1,041	1,171	1,281	1,325	1,319	1,237	1,287	1,516	1,614	1,784	1,822	1,786	1,779	1,826	1,740	1,878
Road traffic accidents	1,745	1,639	1,530	1,508	1,635	1,561	1,491	1,529	1,468	1,360	1,355	1,292	1,287	1,290	1,358	1,294	1,278	1,298	1,181	1,232	1,276
Car crashes	1,032	997	835	881	894	858	829	853	840	793	788	733	723	763	780	756	717	732	707	695	662

Note: Data for 2021 and 2022 are preliminary, and likely to rise.

Data for Figure 2. Number of drug-induced deaths in Australia, by drug type, 2002-2022

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Opioids	483	456	461	498	442	610	745	856	871	888	886	896	1,104	1,170	1,302	1,389	1,362	1,259	1,242	1098	1127
Benzodiazepines	264	225	209	249	249	371	406	519	557	540	618	594	712	707	839	1,052	1,105	945	970	884	805
Stimulants	63	36	61	79	90	99	112	103	110	115	174	182	285	352	518	580	610	620	730	593	613
Antidepressants	249	154	190	200	270	282	314	374	336	333	386	382	475	506	546	706	730	650	666	620	574
Alcohol	215	164	175	178	182	265	307	368	346	352	345	325	398	402	381	467	530	481	481	438	450
Anti-convulsants	1	1	1	3	3	6	3	2	1	0	1	2	4	26	86	152	242	245	319	323	313
Antipsychotics	11	5	12	20	52	53	71	71	106	90	41	35	53	191	317	387	396	343	331	327	283
Cannabinoids	29	12	16	24	38	46	58	68	74	92	93	81	153	212	280	405	447	363	305	274	233
Cocaine	15	10	15	17	16	19	24	30	17	16	26	22	17	48	39	59	83	105	117	115	99

Note: Data for 2021 and 2022 are preliminary, and likely to rise.

Data for Figure 3. Number of drug-induced deaths in 2022 by drug type: all deaths and unintentional deaths

	Unintentional drug-induced deaths	All drug-induced deaths
Pharmaceutical opioids	404	578
Oxycodone, morphine, codeine	289	418
Fentanyl, pethidine, tramadol	178	242
Methadone	193	205
Heroin	460	487
Benzodiazepines	597	805
Anti-depressants	361	574
Anti-psychotics	193	283
Anti-convulsants	241	313
Specified anti-convulsants and sedatives	54	100
Other sedatives	19	25
Alcohol	369	450
Cannabinoids	212	233
Stimulants	552	613
Cocaine	90	99
Succinimides and oxazolidinediones	37	39

Note: Pharmaceutical opioids includes the groups oxycodone, morphine, codeine and fentanyl, pethidine, tramadol.

Data for Figure 4. Number of unintentional drug-induced deaths and drug-induced suicides compared with all (total) drug-induced deaths, 2002-2022

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
All drug-induced deaths	1,231	1,211	1,231	1,278	1,262	1,480	1,648	1,785	1,756	1,775	1,762	1,768	2,074	2,183	2,296	2,400	2318	2368	2,379	2,277	2,356
All drug-induced deaths (projected)	1231	1211	1231	1278	1262	1480	1648	1785	1756	1775	1762	1768	2074	2183	2296	2400	2318	2368	2,379	2,301	2,498
Unintentional drug-induced deaths	903	901	968	983	952	1,041	1,171	1,281	1,325	1,319	1,237	1,287	1,516	1,614	1,784	1,822	1786	1779	1,826	1,740	1,878
Unintentional drug-induced deaths (projected)	903	901	968	983	952	1041	1171	1281	1325	1319	1237	1287	1516	1614	1784	1822	1786	1779	1,826	1,769	2,039
Drug-induced suicides	287	281	235	248	230	298	295	342	304	333	386	383	453	475	446	502	463	486	451	459	426

Note: Data for 2021 and 2022 are preliminary, and likely to rise. Data for projecting drug-induced suicides were not available.

12.8. Data cubes for Chapter 6

Data for Figure 5. Drug-induced suicides by regionality, 2002-2022, rate per 100,000 population

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Outside of capital cities	1.5	1.4	1.4	1.4	1	1.3	1.3	1.3	1.1	1.3	1.7	1.7	1.9	2.1	2	2.2	2	1.9	1.7	1.9	1.9
Greater capital cities	1.5	1.5	1.1	1.1	1.2	1.4	1.5	1.6	1.5	1.5	1.6	1.6	1.8	1.8	1.7	1.8	1.6	1.7	1.6	1.5	1.4

Note: Data for 2021 and 2022 are preliminary, and likely to rise.

Data for Figure 6. Number of drug-induced suicides by drug type, 2002-2022

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Benzodiazepines	88	66	43	67	62	112	105	133	130	133	173	168	175	185	199	252	249	220	193	211	189
Antidepressants	107	74	60	71	97	102	100	137	118	101	139	140	153	179	176	230	221	222	197	190	186
Opioids	98	72	54	68	58	124	105	125	118	126	152	150	183	200	202	247	225	208	164	192	181
Antipsychotics	3	0	6	9	14	15	30	22	43	28	14	12	21	65	89	111	101	96	90	93	78
Alcohol	48	35	24	34	33	45	59	68	39	51	70	69	66	85	70	90	119	98	67	81	72
Anti-convulsants	1	0	1	2	1	2	0	0	1	0	1	2	0	8	15	35	52	46	51	57	65
Stimulants	5	1	0	6	7	3	9	5	8	5	17	15	25	28	35	39	45	56	64	52	51
Cannabinoids	2	2	1	2	1	6	5	7	5	5	5	7	12	27	20	37	29	37	21	20	18
Cocaine	0	0	0	2	2	0	3	1	1	1	5	0	1	7	1	2	1	9	11	7	7

Note: Data for 2021 and 2022 are preliminary, and likely to rise.

Data for Figure 7. Number of drug-induced suicides by age group, 2002-2022

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
0-19	2	7	3	5	3	3	0	5	3	4	6	5	6	8	7	8	8	3	11	10	4
20-29	34	33	31	22	20	23	22	34	31	28	33	35	38	44	32	37	34	50	44	46	44
30-39	72	66	51	48	35	55	72	53	56	50	60	57	75	69	60	71	60	78	60	62	52
40-49	76	83	66	69	58	65	79	71	63	87	89	94	98	112	86	102	94	88	83	74	90
50-59	48	39	41	37	56	76	61	89	72	78	87	68	100	104	118	108	101	104	75	81	75
60-69	26	24	15	29	26	43	29	55	39	42	55	59	70	69	49	86	84	67	81	81	62
70 years and above	29	29	28	38	32	33	32	35	40	44	56	65	66	69	94	90	82	96	97	105	99

Note: Data for 2021 and 2022 are preliminary, and likely to rise.

Data for Figure 8. Number of drug-induced suicides by sex, 2002-2022

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Males	156	148	132	129	101	129	162	174	146	169	207	174	235	256	226	245	228	238	231	233	215
Females	131	133	103	119	129	169	133	168	158	164	179	209	218	219	220	257	235	248	220	226	211

Note: Data for 2021 and 2022 are preliminary, and likely to rise.

12.9. Data cubes for Chapter 7

Data for Figure 9. Unintentional drug-induced deaths by state, 2002-2022, rate per 100,000 population

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
WA	4.3	3.9	2.7	4.6	4.7	5.3	6.2	6.6	6.7	6.6	6.4	6.2	7.5	8.2	8.4	8.6	9.2	9.7	9.7	8.7	9.3
VIC	4.4	5.2	5.5	4.8	4.4	4.4	6.3	5.6	5.5	5.6	3.8	5.1	5.9	6.4	7.6	7.8	6.8	7	7.8	6.5	8.2
NSW	5.2	4.9	5	4.9	5.4	5	5.1	5.5	5.6	5.8	5.6	5.9	7	7.4	7.3	7.7	7.5	7.4	6.9	6.9	6.6
SA	3.7	4.4	5.7	5.7	3.9	5.7	6.1	7.2	5.8	4.3	6.1	3.9	4.9	4.3	6.5	7.1	5.9	5.4	4.5	5.5	6.5
QLD	3.7	3.3	4.4	3.9	3.5	4.4	4.4	5.6	6.9	6.4	6.3	5.7	6.1	6.8	6.9	6.4	6.8	5.9	6.3	6.1	5.9
TAS, NT, ACT	7.3	5.3	4.7	7.4	5.6	7.3	5.8	6.5	6.3	5.6	5.4	5.5	5.9	5.6	7.3	6.6	6.7	6	6.2	6.8	5.7

Note: Data for 2021 and 2022 are preliminary, and likely to rise. Numbers of deaths cannot be reliably converted to rates per 100,000 in Tasmania, Northern Territory, and Australian Capital Territory due to low numbers and are therefore presented as an aggregate.

Data for Figure 10. Unintentional drug-induced deaths by regionality 2002-2022, rate per 100,000 population

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Outside of capital cities	4.6	4.3	4.5	4.9	4.8	4.7	5.3	5.9	5.9	6.3	6.4	5.6	7.3	7.8	8.2	7.9	7.8	7.4	7.3	6.9	6.9
Greater capital cities	4.6	4.7	5	4.8	4.5	5.1	5.6	5.8	6	5.6	5	5.4	5.9	6.2	6.9	7.1	6.7	6.6	6.8	6.5	6.9

Note: Data for 2021 and 2022 are preliminary, and likely to rise.

Data for Figure 11. Number of unintentional drug-induced deaths by drug type, 2002-2022

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Opioids	375	370	387	407	338	424	552	643	684	684	644	677	856	906	1,057	1,090	1,101	989	1,011	858	926
Benzodiazepines	171	148	161	170	162	217	256	324	383	359	382	378	487	474	595	759	824	680	724	635	597
Stimulants	57	34	60	69	78	84	87	90	93	105	139	161	250	313	472	519	544	537	634	526	552
Alcohol	162	123	145	136	134	192	216	273	285	278	252	234	309	296	297	364	397	363	397	343	369
Anti-depressants	128	73	124	117	143	141	165	191	186	187	196	216	290	289	342	443	485	390	420	401	361
Anti-convulsants	0	1	0	2	4	2	2	2	0	0	0	0	4	12	65	112	183	184	247	253	241
Cannabinoids	26	10	15	21	34	34	48	57	66	79	79	69	132	170	249	353	403	310	273	247	212
Anti-psychotics	5	1	6	11	31	26	30	36	50	52	21	17	28	110	209	261	279	231	220	218	193
Cocaine	15	10	15	15	13	16	16	24	16	13	19	22	15	41	38	55	77	95	99	106	90

Note: Data for 2021 and 2022 are preliminary, and likely to rise.

Data for Figure 12. Unintentional drug-induced deaths by drug type, 2002-2022, proportion of unintentional deaths (%)

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Opioids	41.5	41.1	40.0	41.4	35.5	40.7	47.1	50.2	51.6	51.9	52.1	52.6	56.5	56.1	59.2	59.8	61.6	55.6	55.4	49.3	49.3
Benzodiazepines	18.9	16.4	16.6	17.3	17.0	20.8	21.9	25.3	28.9	27.2	30.9	29.4	32.1	29.4	33.4	41.7	46.1	38.2	39.6	36.5	31.8
Stimulants	6.3	3.8	6.2	7.0	8.2	8.1	7.4	7.0	7.0	8.0	11.2	12.5	16.5	19.4	26.5	28.5	30.5	30.2	34.7	30.2	29.4
Alcohol	17.9	13.7	15.0	13.8	14.1	18.4	18.4	21.3	21.5	21.1	20.4	18.2	20.4	18.3	16.6	20.0	22.2	20.4	21.7	19.7	19.6
Anti-depressants	14.2	8.1	12.8	11.9	15.0	13.5	14.1	14.9	14.0	14.2	15.8	16.8	19.1	17.9	19.2	24.3	27.2	21.9	23.0	23.0	19.2
Anti-convulsants	0.0	0.1	0.0	0.2	0.4	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.7	3.6	6.1	10.2	10.3	13.5	14.5	12.8
Cannabinoids	2.9	1.1	1.5	2.1	3.6	3.3	4.1	4.4	5.0	6.0	6.4	5.4	8.7	10.5	14.0	19.4	22.6	17.4	15.0	14.2	11.3
Anti-psychotics	0.6	0.1	0.6	1.1	3.3	2.5	2.6	2.8	3.8	3.9	1.7	1.3	1.8	6.8	11.7	14.3	15.6	13.0	12.0	12.5	10.3
Cocaine	1.7	1.1	1.5	1.5	1.4	1.5	1.4	1.9	1.2	1.0	1.5	1.7	1.0	2.5	2.1	3.0	4.3	5.3	5.4	6.1	4.8

Note: Data for 2021 and 2022 are preliminary, and likely to rise.

Data for Figure 13. Number of unintentional drug-induced deaths by age group, 2002-2022

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
0-19	16	18	20	15	15	11	16	14	21	14	16	11	13	12	14	16	15	24	15	13	20
20-29	172	174	160	160	132	146	172	159	155	166	128	140	131	129	162	160	168	169	207	159	163
30-39	217	219	227	213	191	240	279	308	318	335	306	307	344	393	407	413	406	384	359	304	301
40-49	188	182	221	239	212	213	238	287	313	304	316	334	405	453	489	519	491	464	503	473	502
50-59	131	120	126	158	155	176	197	246	255	236	229	243	320	320	359	384	387	374	386	435	441
60-69	86	78	86	96	93	111	111	136	116	135	122	112	165	144	209	175	182	207	225	202	276
70 and above	93	110	128	102	154	144	157	131	147	129	120	140	137	163	144	155	137	157	131	154	175

Note: Data for 2021 and 2022 are preliminary, and likely to rise.

Data for Figure 14. Unintentional drug-induced deaths, by drug type and median age, 2003-2022

	2003-2007	2008-2012	2013-2017	2018-2022
Opioids	36.2	39	42.3	44.2
Pharmaceutical opioids	39.1	40.6	43.1	45.1
Heroin	32.5	35.6	40.4	43.1
Benzodiazepines	37.4	39.9	42.6	43.6
Stimulants	31.9	35.7	39.2	41.5
Anti-depressants	43.9	44.6	44.7	46.1
Alcohol	41.9	42.7	45.3	46.4
Cannabinoids	32.3	38.2	40.5	42.8
Cocaine	32.2	36	35.5	33.1

Note: Data are aggregated over the five-year periods.

Data for Figure 15. Number of unintentional drug-induced deaths by sex, 2002-2022

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Males	635	640	685	683	676	707	834	910	927	937	813	886	1,042	1,140	1,260	1,290	1,256	1,253	1,296	1,222	1,317
Females	268	261	283	300	276	334	337	371	398	382	424	401	474	474	524	532	530	526	530	518	561

Note: Data for 2021 and 2022 are preliminary, and likely to rise.

Data for Figure 16. Unintentional drug-induced deaths by Indigenous status, 2002-2022, rate per 100,000 population (NSW, Qld, SA, WA, NT)

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Indigenous	13.7	13.1	12.3	11.2	10.4	13.6	12.9	9.5	15.4	15.3	14.8	14.7	15.8	18.5	19.8	20.2	19.3	22.5	20.5	21.1	23.3
Non-Indigenous	4.1	4	4.3	4.4	4.2	4.6	4.8	5.6	5.7	5.5	5.5	5.3	6.1	6.6	6.6	6.8	6.8	6.5	6.4	6.2	6.1

Note: Data for 2021 and 2022 are preliminary, and likely to rise.

Data for Figure 17. Unintentional drug-induced deaths by drug type and Indigenous status, 2018-2022, rate per 100,000 population (NSW, Qld, SA, WA, NT)

	Indigenous	Non-Indigenous
All opioids	9.4	3.4
Stimulants	9.1	1.9
Benzodiazepines	5	2.3
Pharmaceutical opioids	4.5	1.9
Cannabinoids	4.3	1
Heroin	3.7	1.3
Alcohol	3.2	1.3
Antidepressants	2.8	1.5
Anti-convulsants	2.3	0.9
Antipsychotics	1.6	0.8
Opioids	9.4	3.4

Note: Data are aggregated over the five-year period.

Data for Figure 18. Number of unintentional drug-induced deaths by drug type and Indigenous status, 2018-2022 (NSW, Qld, SA, WA, NT)

	Indigenous	Non-Indigenous
Opioids	275	2,909
Stimulants	271	1,594
Benzodiazepines	145	1,969
Cannabinoids	127	820
Alcohol	93	1,103
Anti-depressants	80	1,256
Anti-psychotics	65	718
Anti-convulsants	46	661
Cocaine	17	304

Note: Data are aggregated over the five-year period.

Data for Figure 19. Age distribution (%) of unintentional drug-induced deaths by Indigenous status, 2018-2022 (NSW, Qld, SA, WA, NT)

	Indigenous	Non-Indigenous
0-19	1.3	1.0
20-29	11.2	9.0
30-39	24.2	18.5
40-49	27.2	26.3
50-59	23.4	22.7
60-69	9.3	13.0
70 years and above	3.3	9.4

Note: Data are aggregated over the five-year period.

Data for Figure 20. Number of unintentional drug-induced deaths by socio-economic status of area of usual residence, 2018-2022

	Decile 1	Decile 2	Decile 3	Decile 4	Decile 5	Decile 6	Decile 7	Decile 8	Decile 9	Decile 10
Number of deaths	1,752	1,227	965	914	772	730	692	640	653	493

Note: Decile 1 is the most disadvantaged area and Decile 10 is the most advantaged. SEIFA IRSAD: Socio-Economic Indexes for Areas (SEIFA) using the Index of Relative Socio-Economic Advantage and Disadvantage (IRSAD). Data are aggregated over the five-year period.

Data for Figure 21. Unintentional drug-induced deaths by drug type and socio-economic status of area, percentage distribution across quintiles, 2018-2022

	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5
Alcohol	27.1	20.2	17.7	17.7	15.0
Anti-convulsants	36.4	19.9	17.2	14.4	10.9
Anti-psychotics	34.8	20.1	17.4	14.2	11.1
Anti-depressants	32.9	20.9	17.6	15.5	12.2
Benzodiazepines	31.0	20.2	17.3	15.6	13.9
Fentanyl, pethidine, tramadol	36.7	21.2	16.2	14.7	9.6
Methadone	37.7	19.6	17.7	12.1	10.6
Oxycodone, morphine, codeine	33.0	20.2	17.4	15.2	12.6
Heroin	28.7	19.7	18.0	16.1	14.2
Cannabinoids	35.4	20.4	15.6	13.4	12.5
Stimulants	33.4	20.6	16.4	14.5	12.1
Cocaine	18.0	16.9	18.0	17.6	28.9

Note: Quintile 1 is the most disadvantaged and Quintile 5 is the most advantaged. SEIFA IRSAD: Socio-Economic Indexes for Areas (SEIFA) using the Index of Relative Socio-Economic Advantage and Disadvantage (IRSAD). Data are aggregated over the five-year period.

Data for Figure 22. Number of unintentional drug-induced deaths, single drug type and multiple drug types detected, 2018-2022

	Single drug type	Two drug types	Three or more drug types
Unintentional drug-induced deaths involving multiple drug types	1,980.	1,207	4,074

Note: Data are aggregated over the five-year period.

Data for Figure 23. Number of unintentional drug-induced deaths, by specific number of drug types detected, 2018-2022

	Single drug type	Two drug types	Three drug types	Four drug types	Five drug types	Six drug types	7 or more drug types
Unintentional drug-induced deaths involving multiple drug types	1,980	1,207	1,276	1,170	801	508	319

Note: Data are aggregated over the five-year period.

Data for Figure 24. Number of unintentional drug-induced deaths, by number of drug types detected, 2007-2022

Year	Single drug type	Two drug types	Three drug types	Four or more drug types	Alcohol only
2007	362	196	95	86	60
2008	404	233	125	99	64
2009	465	215	164	158	81
2010	436	267	170	147	77
2011	447	271	142	154	68
2012	399	277	152	149	66

2013	485	229	157	168	67
2014	532	249	203	263	93
2015	501	251	223	304	83
2016	519	248	257	438	95
2017	371	222	278	618	86
2018	310	223	261	728	79
2019	434	206	266	559	110
2020	421	294	281	536	130
2021	424	216	221	512	119
2022	459	268	247	436	124

Note: Data for 2021 and 2022 are preliminary, and likely to rise. Data are only available from 2007.

Data for Figure 25. Number of unintentional drug-induced deaths with multiple drug types detected, by age and sex, 2018-2022

	0-19	20-29	30-39	40-49	50-59	60-69	70 and over
Males	50	539	955	1,097	673	236	53
Females	8	146	325	521	431	191	56

Note: Data are aggregated over the five-year period.

Data for Figure 26. Unintentional drug-induced deaths that involve multiple drug types, as a proportion of all unintentional drug-induced deaths, by age and sex, 2018-2022 (%)

	Males	Females
0-19	74.6	40.0
20-29	81.3	71.9
30-39	73.0	72.9
40-49	64.4	71.4
50-59	49.2	65.7
60-69	32.6	51.8
70 and over	10.3	23.2

Note: Data are aggregated over the five-year period.

Data for Figure 27. Unintentional drug-induced deaths by indigenous status, number of drugs present, poly-drug use, 2018-2022, rate per 100,000 population (NSW, Qld, SA, WA, NT)

	Single drug type	Two drug types	Three drug types	Four drug types	Five drug types	Six drug types
Indigenous	5.8	3.5	2.2	2.3	1.3	0
Non-Indigenous	1.4	0.9	0.9	0.8	0.6	0.4

Note: Data are aggregated over the five-year period.

Data for Figure 28. Proportion of unintentional drug-induced deaths with multiple drug types detected, by drug type involved, 2018-2022

	Poly-drug use deaths for specified drug type, as a proportion of all poly-drug use deaths (%)
All opioids	80.4
Pharmaceutical opioids	42.5
Heroin	33.6
Methadone	18.8
Benzodiazepines	65
Anti-depressants	37.9
Stimulants	35.2
Alcohol	24.7
Anti-psychotics	21
Anti-convulsants	20.9
Cannabinoids	13.5
Cocaine	6.6

Note: Data are aggregated over the five-year period.

12.10. Data cubes for Chapter 8

Data for Figure 29. Number of unintentional drug-induced deaths by opioid type, 2002-2022

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Heroin	90	142	133	122	67	109	157	176	198	190	149	195	218	280	391	422	457	457	460	328	460
Oxycodone, morphine, codeine	169	135	158	169	170	191	267	295	309	272	283	275	422	416	463	434	419	362	348	332	289
Methadone	90	61	77	95	85	99	117	126	140	155	156	155	166	190	232	232	250	196	209	214	193
Fentanyl, pethidine, tramadol	7	14	6	16	12	9	16	18	38	57	84	128	158	194	212	236	240	185	198	174	178

Note: Data for 2021 and 2022 are preliminary, and likely to rise.

Data for Figure 30. Unintentional drug-induced deaths by state for each opioid type, 2002-2022, rate per 100,000 population

Heroin																				
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
VIC	1.2	1.8	1.7	1.2	0.6	1	1.8	1.4	1.6	1.5	0.9	1.4	1.6	2.1	2.5	3.1	2.8	2.7	2.8	2.1	3.1
WA	0.1	0.2	0.3	0.4	0.2	0.4	0.5	1.2	1	1.3	1.2	1.4	1.4	1.5	2.4	2.1	2.9	2.9	2.5	1.5	2.7
NSW	0.3	0.5	0.5	0.5	0.3	0.4	0.3	0.7	0.5	0.5	0.5	0.6	0.6	1	1.4	1.5	1.6	1.8	1.5	0.9	1.3
SA	0.1	0.2	0.1	0.5	0.1	0.7	0.9	0.8	1.3	0.5	0.8	0.4	0.7	0.4	1.5	1	1.4	0.6	0.1	0.9	1.3
QLD	0.1	0.2	0.3	0.4	0.1	0.3	0.4	0.3	0.8	0.8	0.5	0.5	0.6	0.8	0.9	1	1	1	1.1	0.6	1
TAS, ACT, NT	0.3	0.7	0	0.1	0.2	0.1	0.1	0.6	0.3	0.1	0.1	0.7	0.9	0.7	0.1	0.1	1.5	0.7	0.9	0.9	0.8
Oxycodone, morphine, codeine																					
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
WA	1.2	0.5	0.5	1.1	1.3	0.8	2.1	2.1	2.5	2.1	1.6	1.1	2.1	2.4	2.4	3	1.8	2.2	2.3	1.9	1.7
TAS, ACT, NT	1.3	0.8	0.5	1.3	0.6	1.5	1.3	2.1	1.4	1.4	1.5	1	0.9	0.8	2.1	1.1	1.3	1.2	1.4	1.6	1.3
VIC	0.7	0.8	1.2	0.8	0.8	1.1	1.8	1.3	1.4	1.1	1	1	1.7	1.7	2.3	1.7	1.5	1.3	1.3	1	1.3
SA	0.9	0.5	0.8	1.3	0.7	1.2	1.1	1.7	1	0.5	1.4	0.8	1.1	0.8	1.1	1.4	1.5	0.1	0.4	0.6	1.2
QLD	0.6	0.4	0.5	0.5	0.6	0.7	0.8	1.1	1.7	1.5	1.9	1.5	2	1.9	1.9	2	2.2	1.6	1.8	1.4	1
NSW	1	0.8	0.8	0.8	0.9	0.8	0.9	1.2	1	1	0.9	1.2	1.9	1.9	1.6	1.6	1.7	1.5	1.1	0.9	0.7

Methadone																					
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
VIC	0.3	0.4	0.4	0.4	0.4	0.5	0.6	0.5	0.7	0.9	0.7	0.9	0.9	0.8	1.1	1.2	0.9	1	0.9	0.9	1.1
NSW	0.7	0.4	0.5	0.6	0.6	0.5	0.6	0.7	0.6	0.7	0.7	0.8	0.8	1.1	1.1	1.1	1.4	1	1.1	0.8	0.9
TAS, ACT, NT	0.8	0.6	0.6	1.2	0.9	1.1	0.7	0.6	0.8	0.5	0.6	0.4	0.4	0.5	0.7	0.8	0.8	0.2	0.8	0.5	0.9
WA	0.3	0	0.3	0.2	0.4	0.6	0.6	0.4	0.9	0.8	1.2	0.5	0.8	1.1	0.8	0.8	0.8	0.5	0.8	0.9	0.7
SA	0.5	0.3	0.1	0.6	0.4	0.6	1	1.1	0.7	0.7	0.7	0.7	0.5	0.4	0.8	1	0.7	0.1	0.1	0.4	0.4
QLD	0.3	0.2	0.2	0.3	0	0.2	0.3	0.3	0.5	0.5	0.4	0.4	0.5	0.6	0.9	0.6	0.8	0.5	0.5	0.6	0.3
Fentanyl, pethidine, tramadol																					
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
WA	0.2	0.1	0.1	0.3	0	0	0.1	0	0.3	0.3	0.6	0.9	0.8	0.9	1.1	1.1	2	1.5	1.7	0.8	2.1
TAS, ACT NT	0	0.3	0.4	0	0.3	0	0.4	0.3	0.1	0.1	0.1	0.3	0.3	0.5	0.5	0.7	0.8	0.4	0.7	0.5	0.8
VIC	0	0.1	0	0.1	0	0.1	0	0.1	0.1	0.2	0.3	0.4	0.3	0.6	0.6	0.7	0.9	0.7	0.6	0.5	0.7
QLD	0.1	0	0.1	0	0	0	0	0.2	0.3	0.4	0.5	0.7	1.1	1.4	1.2	1.6	1.2	0.9	0.7	0.8	0.6
SA	0.1	0.2	0.2	0.1	0.2	0	0.3	0.2	0.2	0.2	0.6	0.7	0.4	0.5	1	1.1	0.5	0.2	0.2	0.3	0.4
NSW	0	0	0	0	0	0.1	0	0	0	0.2	0.2	0.5	0.8	0.8	0.9	0.9	0.7	0.6	0.6	0.4	0.3

Note: Data for 2021 and 2022 are preliminary, and likely to rise.

Data for Figure 31. Number of unintentional drug-induced deaths by opioid type, 2002-2022, within (A) and outside of (B) capital cities

Capital cities total																					
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Heroin	76	119	116	94	58	93	132	143	165	156	116	171	156	228	317	320	346	340	346	245	361
Oxycodone, morphine, codeine	117	95	113	101	110	133	180	203	187	170	164	167	260	262	290	283	246	228	225	212	202
Methadone	62	50	53	65	61	76	81	89	107	104	110	120	115	122	146	150	158	131	148	139	132
Fentanyl, pethidine, tramadol	5	10	5	13	10	8	8	9	21	23	38	68	59	89	118	125	135	109	115	114	113
Remainders total																					
	2002	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
Heroin	14	23	17	28	9	16	25	33	33	34	33	18	56	48	70	98	90	102	105	71	84
Oxycodone, morphine, codeine	52	40	45	68	60	58	87	92	122	102	119	103	154	152	172	144	163	128	119	115	84
Fentanyl, pethidine, tramadol	2	4	4	4	4	1	8	9	17	34	46	59	96	101	93	105	98	74	81	59	62
Methadone	28	11	24	30	24	23	36	37	33	51	46	32	49	66	82	77	83	61	58	71	57

Note: Data for 2021 and 2022 are preliminary, and likely to rise.

Data for Figure 32. Number of unintentional drug-induced deaths, by opioid type and age group, 2018-2022

	0-19	20-29	30-39	40-49	50-59	60-69	70 and over
Pharmaceutical opioids	41	291	534	674	539	249	91
Heroin	10	281	557	707	455	138	14

Note: Data are aggregated over the five-year period.

Data for Figure 33. Number of unintentional drug-induced deaths by opioid type and sex, 2018-2022

	Pharmaceutical opioids	Heroin	Methadone
Females	898	455	363
Males	1,521	1,707	699

Note: Data are aggregated over the five-year period.

Data for Figure 34. Number of unintentional drug-induced deaths involving opioids by sole-drug and poly-drug use categories, 2007-2022

	Opioids + benzodiazepines	Opioids + other pharmaceuticals	Opioids + anti-depressants	Opioids + stimulants	Opioids + anti-psychotics	Opioids + alcohol	Heroin only	Pharmaceutical opioids only
2007	160	94	82	41	17	75	56	51
2008	185	117	100	54	16	117	80	54
2009	242	118	106	52	22	140	88	73
2010	306	123	109	55	24	144	102	68
2011	261	145	125	66	31	142	100	69
2012	296	145	132	78	13	120	69	59
2013	301	169	160	86	7	115	96	84
2014	403	237	213	156	20	151	88	116
2015	405	257	205	155	71	148	104	103
2016	515	387	262	273	154	141	119	88
2017	648	520	354	278	200	198	75	50
2018	710	590	393	298	218	219	61	37
2019	564	484	297	287	175	162	95	42
2020	604	520	336	328	161	163	79	26
2021	519	472	303	247	167	130	63	36
2022	494	455	277	280	146	159	90	32

Note: Data for 2021 and 2022 are preliminary, and likely to rise.

Data for Figure 35. Number of unintentional drug-induced deaths involving benzodiazepines by state and territory, 2002-2022, rate per 100,000 population

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
VIC	0.9	1.1	1.3	1	0.9	1.2	1.6	1.6	1.9	2	1.7	1.9	2.8	2.6	3.7	4	3.9	3.6	3.8	3	3.8
WA	1.1	0.1	0.5	1.2	1.1	1	2.1	1.8	2.4	1.6	1.9	1.1	2.1	2.5	2.7	4.1	4.4	3.6	4	3.6	3.3
TAS, NT, ACT	1.6	1.1	0.8	1.5	1	1.8	1.2	2	2.1	0.9	1.4	1	1.4	0.5	1.9	1.7	2.8	1.7	2.2	2.3	2.1
NSW	0.9	0.9	1.1	0.8	0.9	0.9	0.7	0.9	1.3	1.4	1.6	1.8	2	2.1	2.1	2.9	3.2	2.3	2.3	3.1	2.2
QLD	0.6	0.4	0.2	0.3	0.3	0.8	1.1	1.9	2.2	2	2.1	1.7	1.9	2	2.1	2.9	3.3	2.6	2.5	2.2	1.6
SA	0.4	0.7	0.1	1	0.6	1.6	1.1	1.6	1	0.9	1.4	1	1.4	0.5	1.6	1.9	2.2	1.6	0.9	1.3	1.4

Note: Data for 2021 and 2022 are preliminary, and likely to rise.

Data for Figure 36. Unintentional drug-induced deaths involving benzodiazepines by regionality, 2002-2022, rate per 100,000 population

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Capital cities	0.9	0.8	1	0.8	0.9	1.2	1.3	1.6	1.9	1.6	1.6	1.7	2	2	2.7	3.1	3.2	2.8	3	2.5	2.5
Outside of capital cities	0.9	0.6	0.5	0.9	0.7	0.7	1.1	1.2	1.6	1.6	2.1	1.5	2.4	2.2	2.3	3.3	3.6	2.6	2.6	2.4	1.9

Note: Data for 2021 and 2022 are preliminary, and likely to rise.

Data for Figure 37. Number of unintentional drug-induced deaths involving benzodiazepines by age group, 2018-2022

	0-19	20-29	30-39	40-49	50-59	60-69	70 and over
Benzodiazepines	41	204	454	847	1,059	709	273

Note: Data are aggregated over the five-year period.

Data for Figure 38. Number of unintentional drug-induced deaths involving benzodiazepines by sex, 2018-2022

	Males	Females
Benzodiazepines	2,291	1,169

Note: Data are aggregated over the five-year period.

Data for Figure 39. Unintentional drug-induced deaths involving stimulants by state and territory, 2002-2022, rate per 100,000 population

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
WA	0.5	0.3	0.5	0.3	0.4	0.6	0.8	0.6	0.4	0.6	0.7	1.3	1.9	1.8	3	3.1	3.8	3.7	3.6	3.6	3.8
VIC	0.2	0.1	0.3	0.5	0.4	0.4	0.5	0.5	0.4	0.5	0.4	0.8	1.1	1.6	2.5	2.6	2.5	2.3	2.8	2.4	2.9
SA	0.1	0.1	0.3	0.5	0.3	0.4	0.5	0.1	0.6	0.4	0.4	0.4	0.5	0.6	1.1	1.9	1.6	1.4	1.3	1.4	2.3
NSW	0.4	0.3	0.4	0.3	0.5	0.3	0.4	0.3	0.4	0.5	0.8	0.7	1	1.2	2	2	2	2.1	2.7	2.1	1.7
TAS, NT, ACT	0.1	0.1	0.1	0.5	0.1	0.7	0.2	0.6	0.1	0.1	0.4	0.4	0.7	0.9	1.3	1.9	2.2	1.8	2.4	1.7	1.7
QLD	0.1	0	0.1	0.1	0.2	0.3	0.2	0.5	0.5	0.4	0.8	0.6	1.2	1.5	1.7	1.8	2	2.1	2.1	1.6	1.5

Note: Data for 2021 and 2022 are preliminary, and likely to rise.

Data for Figure 40. Unintentional drug-induced deaths involving stimulants by regionality, 2002-2022, rate per 100,000 population

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Capital cities	0.4	0.2	0.4	0.3	0.4	0.5	0.5	0.4	0.5	0.5	0.6	0.8	1.1	1.3	2	2.2	2.3	2.2	2.5	2.2	2.3
Outside of capital cities	0.1	0.1	0.1	0.4	0.4	0.2	0.3	0.4	0.3	0.5	0.7	0.6	1.1	1.6	2.1	2.2	2.1	2.1	2.6	1.9	1.8

Note: Data for 2021 and 2022 are preliminary, and likely to rise.

Data for Figure 41. Number of unintentional drug-induced deaths involving stimulants by age group, 2018-2022

	0-19	20-29	30-39	40-49	50-59	60-69	70 and over
Stimulants	31	182	424	801	899	512	115

Note: Data are aggregated over the five-year period.

Data for Figure 42. Number of unintentional drug-induced deaths involving stimulants by sex, 2018-2022

	Males	Females
Stimulants	2,068	725

Note: Data are aggregated over the five-year period.

Data for Figure 43. Unintentional drug-induced deaths involving alcohol by state and territory, 2002-2022, rate per 100,000 population

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
WA	0.9	0.5	0.3	1.1	0.8	1.4	1.5	1.7	1.8	1.5	1.3	1.5	1.9	2.0	1.3	1.4	2.2	2.1	3.1	2.1	2.5
VIC	0.8	0.8	1.1	0.8	0.7	0.9	1.2	1.2	1.2	1.2	0.7	0.8	1.2	1.0	1.6	1.9	1.6	1.6	1.7	1.6	2.1
SA	0.3	0.6	0.5	0.6	0.6	1.0	0.9	1.4	1.3	0.8	1.3	0.8	1.0	0.6	0.8	1.4	1.1	1.1	1.1	1.1	1.4
TAS, ACT, NT	1.3	0.2	1.0	0.3	0.5	1.4	0.7	1.1	1.5	1.4	0.8	1.4	1.5	1.2	1.4	1.8	1.7	1.4	1.6	1.7	1.3
NSW	1.0	0.8	0.8	0.7	0.7	0.8	1.0	1.2	1.2	1.4	1.2	1.0	1.4	1.5	1.2	1.5	1.7	1.5	1.1	1.0	0.9
QLD	0.5	0.3	0.3	0.3	0.4	0.6	0.7	1.3	1.3	1.1	1.4	1.0	1.1	1.0	0.9	1.1	1.3	0.9	1.2	1.2	0.9

Note: Data for 2021 and 2022 are preliminary, and likely to rise.

Data for Figure 44. Unintentional drug-induced deaths involving alcohol by regionality, 2002-2022, rate per 100,000 population

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	**2022**
Outside of capital cities	0.8	0.5	0.5	0.5	0.7	0.8	1	1.7	1.3	1.3	1.4	1.1	1.6	1.5	1.4	1.7	1.9	1.5	1.7	1.4	1.3
Capital cities	0.9	0.7	0.8	0.8	0.6	1	1	1.1	1.3	1.2	1	1	1.2	1.1	1.2	1.4	1.5	1.4	1.5	1.3	1.5

Note: Data for 2021 and 2022 are preliminary, and likely to rise.

Data for Figure 45. Number of unintentional drug-induced deaths involving alcohol by age group, 2018-2022

	0-19	20-29	30-39	40-49	50-59	60-69	70 and over
Anti-depressants	12	161	423	546	464	201	62

Note: Data are aggregated over the five-year period.

Data for Figure 46. Number of unintentional drug-induced deaths involving alcohol by sex, 2018-2022

	Males	Females
Anti-depressants	1,342	527

Note: Data are aggregated over the five-year period.

Data for Figure 47. Number of unintentional drug-induced deaths involving alcohol as a sole drug type, by age group and sex, 2018-2022

	0-19	20-29	30-39	40-49	50-59	60-69	70 and over
Males	2	115	289	413	377	161	81
Females	1	3	19	43	50	25	8

Note: Data are aggregated over the five-year period.

Data for Figure 48. Unintentional drug-induced deaths involving anti-depressants by state and territory, 2002-2022, rate per 100,000 population

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
WA	1.1	0.2	0.3	0.6	1.1	0.8	1.2	1.2	1.4	1.2	1.4	0.7	1.4	2.2	1.2	2.9	3	2.7	3.1	2.8	2.6
TAS, NT, ACT	1.7	0.4	0.3	1.2	1	1.5	0.7	1.5	1	1	0.5	0.9	0.9	0.7	1.3	1.1	2.1	1.5	1.6	2	1.8
VIC	0.6	0.6	1	0.7	0.5	0.6	0.9	0.9	0.9	0.9	0.8	0.9	1.5	1.1	1.4	2.3	2.2	1.6	2	1.5	1.8
QLD	0.6	0.1	0.3	0.2	0.4	0.4	0.4	0.7	0.8	0.9	1.2	1.1	1.7	1.6	1.9	1.9	2.1	1.6	1.8	1.7	1
SA	0.5	0.1	0.6	0.8	0.6	1.6	1.2	1.9	1.3	0.2	0.9	0.4	0.9	0.4	0.8	1.2	0.6	0.9	0.5	0.6	0.9
NSW	0.5	0.5	0.7	0.6	0.8	0.5	0.7	0.5	0.6	0.8	0.6	1	0.8	1	1.2	1.3	1.6	1.3	1.1	1.3	0.9

Note: Data for 2021 and 2022 are preliminary, and likely to rise.

Data for Figure 49. Unintentional drug-induced deaths involving anti-depressants by regionality, 2002-2022, rate per 100,000 population

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Outside of capital cities	0.6	0.3	0.5	0.5	0.6	0.5	0.7	0.9	0.9	1.2	1.1	1.1	1.5	1.4	1.9	1.9	2.3	1.7	1.7	1.6	1.2
Capital cities	0.7	0.4	0.7	0.6	0.7	0.7	0.8	0.9	0.8	0.7	0.8	0.9	1.1	1.2	1.2	1.8	1.8	1.5	1.6	1.5	1.5

Note: Data for 2021 and 2022 are preliminary, and likely to rise.

Data for Figure 50. Number of unintentional drug-induced deaths involving anti-depressants by age group, 2018-2022

	0-19	20-29	30-39	40-49	50-59	60-69	70 and over
Anti-depressants	13	203	434	649	474	218	66

Note: Data are aggregated over the five-year period.

Data for Figure 51. Number of unintentional drug-induced deaths involving anti-depressants by sex, 2018-2022

	Males	Females
Anti-depressants	1,152	905

Note: Data are aggregated over the five-year period.

Data for Figure 52. Unintentional drug-induced deaths involving anti-convulsants by state, 2012-2022, rate per 100,000 population

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
WA	0	0	0	0.1	0.5	0.9	1.2	1.5	1.6	1	1.9
VIC	0	0	0.1	0	0.4	0.6	0.8	0.8	0.9	0.8	1.1
QLD	0	0	0	0.1	0.4	0.9	1.7	1.2	1.3	1.6	1
TAS, NT , ACT	0	0	0	0	0	0.1	0.1	0.2	0.7	0.5	0.8
NSW	0	0	0	0	0.1	0	0.1	0.3	0.8	1	0.6
SA	0	0	0	0	0.4	0.2	0.4	0.2	0.3	0.4	0.5

Note: Data for 2021 and 2022 are preliminary, and likely to rise.

Data for Figure 53. Unintentional drug-induced deaths involving anti-convulsants by regionality, 2012-2022, rate per 100,000 population

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Outside of capital cities	0	0	0	0.1	0.3	0.6	1	0.8	1.2	1.1	1
Capital cities	0	0	0	0	0.3	0.4	0.6	0.7	0.9	0.9	0.9

Note: Data for 2021 and 2022 are preliminary, and likely to rise.

Data for Figure 54. Number of unintentional drug-induced deaths involving anti-convulsants by age group, 2018-2022

	0-19	20-29	30-39	40-49	50-59	60-69	70 and over
Anti-convulsants	10	115	267	359	243	85	29

Note: Data are aggregated over the five-year period.

Data for Figure 55. Number of unintentional drug-induced deaths involving anti-convulsants by sex, 2018-2022

	Males	Females
Anti-convulsants	670	438

Note: Data are aggregated over the five-year period.

Data for Figure 56. Unintentional drug-induced deaths involving anti-psychotics by state, 2002-2022, rate per 100,000 population

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
WA	0	0.2	0	0	0.2	0.1	0	0.3	0.3	0.6	0.2	0	0.2	0.6	0.6	1.3	1.8	1.2	1.4	1.3	1.2
VIC	0	0	0	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.1	0.1	0.2	0.5	1.3	1.7	1.2	1.2	1.2	1.0	1.1
TAS, NT, ACT	0	0	0	0.2	0.3	0.6	0.3	0.3	0.5	0.4	0	0.4	0.1	0.1	0.9	0.5	0.8	1.2	0.7	0.8	0.9
NSW	0	0	0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.4	0.7	0.9	1.1	0.7	0.7	0.8	0.5
QLD	0.1	0.1	0.1	0	0.1	0	0.1	0	0.2	0.2	0.1	0.1	0.1	0.5	1.0	0.9	1.3	1.0	0.8	0.7	0.5
SA	0.2	0	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0	0	0.2	0.2	0.3	0.5	0.6	0.1	0.3	0.3	0.2	0.4

Note: Data for 2021 and 2022 are preliminary, and likely to rise.

Data for Figure 57. Unintentional drug-induced deaths involving anti-psychotics by regionality, 2002-2022, rate per 100,000 population

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Outside of capital cities	0.1	0	0	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.1	0	0.1	0.4	0.9	1.1	1.2	1	0.8	0.9	0.7
Capital cities	0	0	0	0	0.2	0.1	0.1	0.2	0.3	0.2	0.1	0.1	0.1	0.5	0.9	1.1	1.1	0.9	0.9	0.9	0.8

Note: Data for 2021 and 2022 are preliminary, and likely to rise.

Data for Figure 58. Number of unintentional drug-induced deaths involving anti-psychotics by age group, 2018-2022

	0-19	20-29	30-39	40-49	50-59	60-69	70 and over
Anti-psychotics	4	113	287	409	225	87	16

Note: Data are aggregated over the five-year period.

Data for Figure 59. Number of unintentional drug-induced deaths involving anti-psychotics by sex, 2018-2022

	Males	Females
Anti-psychotics	722	419

Note: Data are aggregated over the five-year period.

Data for Figure 60. Unintentional drug-induced deaths involving cannabinoids by state and territory, 2002-2022, rate per 100,000 population

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
TAS, NT, ACT	0.2	0.3	0.1	0	0.2	0.1	0.1	0.2	0.5	0.2	0.4	0.2	0.2	0.4	1.1	1	1.2	1.2	0.9	1.3	1.1
WA	0.6	0.2	0.1	0.4	0.6	0.3	0.6	0.6	0.6	1	0.9	0.5	1.1	0.9	1.4	1.7	2.7	1.9	2.3	2.3	1.7
VIC	0.1	0	0.1	0.1	0.3	0.2	0.2	0.1	0.2	0.4	0.3	0.2	0.6	1.1	1.6	2.3	1.8	1.5	1	0.7	1
NSW	0.1	0	0.1	0	0.1	0.1	0	0.1	0.1	0.1	0.2	0.4	0.5	0.6	1	1.3	1.6	1.1	1	0.6	0.7
QLD	0.1	0.1	0	0	0	0.2	0.4	0.7	0.6	0.5	0.6	0.3	0.6	0.7	0.7	1	1.7	1.1	0.9	0.5	0.5
SA	0	0.3	0.2	0	0.1	0.1	0.2	0	0.1	0	0.2	0	0.2	0.1	0.4	1.3	0.5	0.5	0.3	0.4	0.7

Note: Data for 2021 and 2022 are preliminary, and likely to rise.

Data for Figure 61. Unintentional drug-induced deaths involving cannabinoids by regionality, 2001-2021, rate per 100,000 population

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Outside of capital cities	0.1	0	0.1	0.1	0.2	0.2	0.2	0.4	0.3	0.4	0.5	0.3	0.8	0.8	1.2	1.7	2.1	1.3	1.1	1	0.6
Capital cities	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.5	0.7	1	1.4	1.5	1.2	1.1	1	0.9

Note: Data for 2021 and 2022 are preliminary, and likely to rise.

Data for Figure 62. Number of unintentional drug-induced deaths involving cannabinoids by age group, 2018-2022

	0-19	20-29	30-39	40-49	50-59	60-69	70 and over
Cannabinoids	29	221	344	491	281	75	4

Note: Data are aggregated over the five-year period.

Data for Figure 63. Number of unintentional drug-induced deaths involving cannabinoids by sex, 2018-2022

	Males	Females
Cannabinoids	1,084	361

Note: Data are aggregated over the five-year period.

12.11. Data cubes for Chapter 9

Data for Figure 64. Unintentional drug-induced deaths by regionality in New South Wales, 2002-2022, rate per 100,000 population

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Regional NSW	5.1	4.7	4.5	4.9	5.7	4.7	4.5	5.1	5.7	6.4	6.9	5.9	8.5	8.2	8.7	8.6	8.2	8.3	8.4	7.7	7.7
Greater Sydney	5.2	5.1	5.3	4.9	5.4	5.1	5.4	5.8	5.5	5.6	5.1	5.9	6.2	6.9	6.5	7.0	6.9	6.6	6.1	6.3	5.9

Note: Data for 2021 and 2022 are preliminary, and likely to rise.

Data for Figure 65. Unintentional drug-induced deaths by drug type in greater Sydney and regional NSW, 2002-2022, rate per 100,000 population

Greater Sydney																					
	2002	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
Stimulants	0.5	0.3	0.5	0.3	0.5	0.4	0.5	0.3	0.5	0.6	0.7	0.7	1	1.2	1.7	1.8	1.9	2.0	2.5	2.1	1.6
Other pharmaceuticals	0.6	0.5	0.8	0.7	1.2	0.7	0.9	0.6	0.7	0.7	0.7	1	0.8	1.5	1.3	1.9	2	1.7	1.7	2.2	1.5
Benzodiazepines	1.0	1.0	1.3	0.8	1.0	1.0	0.7	1.1	1.3	1.3	1.5	1.9	1.8	1.9	1.9	2.5	3.1	2.4	2.2	2.3	1.5
Pharmaceutical opioids	1.0	0.8	0.8	0.8	1.0	0.8	1.0	1.2	0.8	1.0	0.8	1.3	2.0	2.2	1.7	2.0	1.8	1.7	1.4	1.3	0.8
Heroin	0.4	0.5	0.6	0.5	0.4	0.4	0.3	0.7	0.6	0.6	0.4	0.8	0.5	1.2	1.5	1.4	1.7	1.8	1.5	1.2	1.4
Regional NSW																					
	2002	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
Other pharmaceuticals	0.5	0.4	0.7	0.4	0.8	0.5	0.6	0.8	0.8	1.4	0.8	1.4	1.4	1.3	2.4	2.1	2.9	2.4	2.1	2.3	1.9
Stimulants	0.5	0.3	0.5	0.5	0.6	0.3	0.2	0.2	0.2	0.2	1.1	0.5	1.0	1.2	2.4	2.4	2.2	2.0	3.3	2.1	1.8
Benzodiazepines	0.9	0.7	0.7	0.8	0.7	0.6	0.8	0.7	1.1	1.5	1.8	1.5	2.3	2.2	2.5	3.6	3.3	2.2	2.8	2.1	1.7
Pharmaceutical opioids	1.1	1	0.8	1	1.1	0.9	0.7	1.2	1.5	1.7	1.7	2.2	3.5	3.1	3.5	2.8	2.8	2.3	2.1	1.6	1.2
Heroin	0.1	0.4	0.2	0.3	0.1	0.2	0.2	0.5	0.4	0.4	0.6	0.3	0.7	0.5	1.2	1.5	1.2	1.4	1.4	1.0	0.9

Note: Data for 2021 and 2022 are preliminary, and likely to rise.

Data for Figure 66. Unintentional drug-induced deaths by regionality in Victoria, 2002-2022, rate per 100,000 population

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Regional VIC	4.4	5.0	4.8	5.7	5.0	4.5	6.6	6.6	5.7	6.3	4.6	5.5	8.0	7.5	8.9	11.0	8.3	9.0	8.4	6.6	8
Greater Melbourne	4.4	5.3	5.7	4.5	4.2	4.4	6.1	5.3	5.4	5.4	3.6	5.0	5.2	5.9	7.2	6.7	6	6.1	7.3	6.3	7.8

Note: Data for 2021 and 2022 are preliminary, and likely to rise.

Data for Figure 67. Unintentional drug-induced deaths by drug type in greater Melbourne and regional Victoria, 2002-2022, rate per 100,000 population

Greater Melbourne																					
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Benzodiazepines	0.8	1.2	1.5	1	0.8	1.3	1.5	1.7	1.9	2.1	1.6	1.8	2.5	2.5	3.8	3.5	3.4	3.2	3.8	3	3.7
Stimulants	0.2	0.1	0.4	0.5	0.4	0.5	0.4	0.6	0.4	0.5	0.4	0.8	1.1	1.5	2.5	2.3	2.4	2.1	2.6	2.3	2.7
Other pharmaceuticals	0.6	0.7	1.1	0.8	0.5	0.7	0.9	0.8	1	1	0.8	1.0	1.4	1.4	2.7	2.8	2.8	2.4	3.0	2.2	2.8
Heroin	1.3	2.1	2	1.1	0.7	1.2	2.1	1.4	1.7	1.7	0.9	1.6	1.6	2.2	2.8	3.1	2.8	2.4	2.7	2	3.2
Pharmaceutical opioids	0.6	1	1.4	0.8	0.8	1.3	1.8	1.3	1.2	1.2	0.9	1.2	1.7	1.8	2.6	1.7	1.8	1.4	1.7	1.3	1.5

Regional VIC																					
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Benzodiazepines	1	0.8	0.5	1.2	1.2	0.8	1.9	1.5	2.1	1.7	2.0	2.3	3.9	3.0	3.5	5.6	4.9	4.4	3.8	3.2	3.6
Other pharmaceuticals	0.6	0.5	0.8	1.1	0.9	1.0	1.4	1.6	1.3	1.5	1.3	1.3	2.6	2.1	3.5	5.4	4.5	4.2	3.4	2.7	3.4
Stimulants	0	0.1	0.2	0.3	0.4	0.2	0.5	0.1	0.2	0.7	0.7	0.5	1.4	2.0	2.3	3.2	2.3	2.7	2.9	2.4	2.6
Heroin	0.7	1.0	0.8	1.4	0.2	0.3	0.7	1.2	1.2	1.0	0.7	1.0	1.7	1.7	1.9	3.4	2.3	3.0	2.9	2.0	2.3
Pharmaceutical opioids	0.9	0.8	0.8	1.0	1.0	0.8	2	1.2	2.2	1.4	2	2.5	2.9	2.9	4.1	3.2	3.2	2.2	1.9	1.7	2.3

Note: Data for 2021 and 2022 are preliminary, and likely to rise.

Data for Figure 68. Unintentional drug-induced deaths by regionality in Queensland, 2002-2022, rate per 100,000 population

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Regional QLD	3.6	3.3	4.8	4.0	3.8	4.4	4.7	6.0	6.4	6.4	7.2	6.2	6.4	7.6	7.7	6.6	7.3	5.5	6.5	6.3	5.7
Greater Brisbane	3.8	3.3	3.9	3.9	3.1	4.3	4.1	5.2	7.5	6.2	5.4	4.9	5.7	5.8	6.0	6.2	6.1	6.2	6	5.6	5.8

Note: Data for 2021 and 2022 are preliminary, and likely to rise.

Data for Figure 69. Unintentional drug-induced deaths by regionality in Western Australia, 2002-2022, rate per 100,000 population

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Greater Perth	4.6	3.9	2.9	4.3	4.7	5.4	5.5	6.2	6.6	6.4	6.4	6.2	7.1	7.5	8.4	9.1	9.1	9.4	9.8	8.5	9.1
Regional WA	3.3	3.7	1.7	5.5	4.5	4.7	8.5	8.0	7.2	7.5	6.7	5.2	8.6	10.3	8.3	6.2	8.7	10.4	8.2	8.1	8.2

Note: Data for 2021 and 2022 are preliminary, and likely to rise.

Data for Section 9.7 – Unintentional drug-induced deaths 2018-2022 (Statistical Area 3), rate per 100,000 population

SA3	Number of deaths	Population	Rate per 100,000 population
New South Wales			
Queanbeyan	16	63815	5
Snowy Mountains	5	20486	4.9
South Coast	36	75427	9.5
Goulburn - Mulwaree	16	38092	8.4
Young - Yass	10	37800	5.3
Gosford	65	178366	7.3
Wyong	72	168468	8.5
Bathurst	21	48991	8.6
Lachlan Valley	27	55329	9.8
Lithgow - Mudgee	24	47962	10
Orange	19	61102	6.2
Clarence Valley	18	52895	6.8
Coffs Harbour	46	91895	10
Bourke - Cobar - Coonamble	12	22926	10.5
Broken Hill and Far West	18	20125	17.9
Dubbo	25	74320	6.7
Lower Hunter	32	96732	6.6
Maitland	24	84926	5.7
Port Stephens	19	75755	5
Upper Hunter	10	30810	6.5
Dapto - Port Kembla	42	79549	10.6
Illawarra Catchment Reserve	0	5	0
Kiama - Shellharbour	33	97801	6.7
Wollongong	58	135313	8.6
Great Lakes	10	32990	6.1
Kempsey - Nambucca	27	50947	10.6
Lord Howe Island	0	438	0
Port Macquarie	37	85487	8.7
Taree - Gloucester	26	56925	9.1
Albury	41	66127	12.4
Lower Murray	8	13046	12.3

Upper Murray exc. Albury	16	43226	7.4
Armidale	14	38048	7.4
Inverell - Tenterfield	17	38958	8.7
Moree - Narrabri	12	25368	9.5
Tamworth - Gunnedah	27	85167	6.3
Lake Macquarie - East	45	125996	7.1
Lake Macquarie - West	25	83507	6
Newcastle	93	177916	10.5
Richmond Valley - Coastal	25	86486	5.8
Richmond Valley - Hinterland	49	71872	13.6
Tweed Valley	43	96693	8.9
Griffith - Murrumbidgee (West)	15	49873	6
Tumut - Tumbarumba	5	14889	6.7
Wagga Wagga	38	98715	7.7
Shoalhaven	41	106936	7.7
Southern Highlands	17	51808	6.6
Baulkham Hills	12	154924	1.5
Dural - Wisemans Ferry	9	27963	6.4
Hawkesbury	6	25206	4.8
Rouse Hill - McGraths Hill	2	51235	1
Blacktown	45	144049	6.2
Blacktown - North	10	132819	1.5
Mount Druitt	40	117520	6.8
Botany	30	57292	10.5
Marrickville - Sydenham - Petersham	33	56405	11.7
Sydney Inner City	169	230421	14.7
Eastern Suburbs - North	34	131963	5.2
Eastern Suburbs - South	88	141240	12.5
Bankstown	69	186488	7.4
Canterbury	43	143278	6
Hurstville	26	134051	3.9
Kogarah - Rockdale	32	147990	4.3
Canada Bay	27	88597	6.1
Leichhardt	32	57931	11
Strathfield - Burwood - Ashfield	55	164096	6.7

Chatswood - Lane Cove	28	119665	4.7
Hornsby	26	87686	5.9
Ku-ring-gai	12	125749	1.9
North Sydney - Mosman	20	97767	4.1
Manly	9	44286	4.1
Pittwater	14	63763	4.4
Warringah	39	158622	4.9
Camden	14	72292	3.9
Campbelltown (NSW)	56	176396	6.3
Wollondilly	6	45603	2.6
Blue Mountains	36	78527	9.2
Blue Mountains - South	0	6	0
Penrith	61	157294	7.8
Richmond - Windsor	9	38140	4.7
St Marys	22	57022	7.7
Auburn	26	104006	5
Carlingford	27	74166	7.3
Merrylands - Guildford	70	165046	8.5
Parramatta	65	154815	8.4
Pennant Hills - Epping	5	54548	1.8
Ryde - Hunters Hill	44	148366	5.9
Bringelly - Green Valley	34	136330	5
Fairfield	65	196826	6.6
Liverpool	54	134701	8
Cronulla - Miranda - Caringbah	26	117485	4.4
Sutherland - Menai - Heathcote	29	112043	5.2
Victoria			
Ballarat	45	114056	7.9
Creswick - Daylesford - Ballan	13	30345	8.6
Maryborough - Pyrenees	9	26427	6.8
Bendigo	44	101701	8.7
Heathcote - Castlemaine - Kyneton	19	51358	7.4
Loddon - Elmore	1	12010	4.2
Barwon - West	4	21705	2.3
Geelong	94	209107	9

Surf Coast - Bellarine Peninsula	19	88786	4.3
Upper Goulburn Valley	26	58614	8.9
Wangaratta - Benalla	20	48001	8.3
Wodonga - Alpine	22	75321	5.8
Baw Baw	11	55970	3.9
Gippsland - East	14	48032	5.8
Gippsland - South West	29	69332	8.4
Latrobe Valley	46	76489	12
Wellington	18	44948	8
Brunswick - Coburg	31	93405	6.6
Darebin - South	23	55296	8.3
Essendon	29	70987	8.2
Melbourne City	59	163185	7.2
Port Phillip	83	108120	15.4
Stonnington - West	21	66632	6.3
Yarra	68	95438	14.3
Boroondara	43	175243	4.9
Manningham - West	25	99559	5
Whitehorse - West	32	110569	5.8
Bayside	44	103855	8.5
Glen Eira	39	160498	4.9
Kingston	33	125024	5.3
Stonnington - East	5	43839	2.3
Banyule	43	129053	6.7
Darebin - North	49	99151	9.9
Nillumbik - Kinglake	9	68162	2.6
Whittlesea - Wallan	68	250900	5.4
Keilor	12	62720	3.8
Macedon Ranges	10	32785	6.1
Moreland - North	26	82719	6.3
Sunbury	15	44669	6.7
Tullamarine - Broadmeadows	43	200724	4.3
Knox	54	161832	6.7
Manningham - East	4	26974	1.9
Maroondah	33	116563	5.7

Whitehorse - East	27	64342	8.4
Yarra Ranges	60	157230	7.6
Cardinia	34	115782	5.9
Casey - North	36	139903	5.1
Casey - South	42	220588	3.8
Dandenong	93	199718	9.3
Monash	48	189431	5.1
Brimbank	89	192798	9.2
Hobsons Bay	40	89069	9
Maribyrnong	58	88332	13.1
Melton - Bacchus Marsh	70	193774	7.2
Wyndham	68	289567	4.7
Frankston	87	141519	12.3
Mornington Peninsula	54	169089	6.4
Grampians	30	59922	10
Mildura	22	56887	7.7
Murray River - Swan Hill	12	38084	6.3
Campaspe	13	38467	6.8
Moira	13	30249	8.6
Shepparton	32	67899	9.4
Glenelg - Southern Grampians	14	36478	7.7
Colac - Corangamite	10	38194	5.2
Warrnambool	14	52411	5.3
Queensland			
Capalaba	19	74966	5.1
Cleveland - Stradbroke	20	93065	4.3
Wynnum - Manly	20	73700	5.4
Bald Hills - Everton Park	6	45944	2.6
Chermside	18	75036	4.8
Nundah	15	43185	6.9
Sandgate	23	62104	7.4
Carindale	9	54789	3.3
Holland Park - Yeronga	38	80264	9.5
Mt Gravatt	21	79905	5.3
Nathan	22	40783	10.8

Rocklea - Acacia Ridge	19	67805	5.6
Sunnybank	10	51919	3.9
Centenary	9	33614	5.4
Kenmore - Brookfield - Moggill	5	48391	2.1
Sherwood - Indooroopilly	16	55893	5.7
The Gap - Enoggera	18	54601	6.6
Brisbane Inner	69	87365	15.8
Brisbane Inner - East	10	45020	4.4
Brisbane Inner - North	47	100898	9.3
Brisbane Inner - West	16	61718	5.2
Cairns - North	16	58064	5.5
Cairns - South	53	106837	9.9
Innisfail - Cassowary Coast	16	35840	8.9
Port Douglas - Daintree	6	12313	9.7
Tablelands (East) - Kuranda	15	43011	7
Darling Downs (West) - Maranoa	12	44805	5.4
Darling Downs - East	6	43424	2.8
Granite Belt	10	41729	4.8
Central Highlands (Qld)	6	29524	4.1
Rockhampton	44	121714	7.2
Biloela	6	14626	8.2
Gladstone	29	64008	9.1
Broadbeach - Burleigh	27	66931	8.1
Coolangatta	21	57696	7.3
Gold Coast - North	30	69974	8.6
Gold Coast Hinterland	2	20132	2.5
Mudgeeraba - Tallebudgera	13	36167	7.2
Nerang	17	70767	4.8
Ormeau - Oxenford	35	154186	4.5
Robina	11	54309	4.1
Southport	30	64895	9.2
Surfers Paradise	26	45417	11.4
Forest Lake - Oxley	27	79476	6.8
Ipswich Hinterland	12	67716	3.5
Ipswich Inner	36	115814	6.2

Springfield - Redbank	29	103454	5.6
Beaudesert	5	14862	6.7
Beenleigh	17	46058	7.4
Browns Plains	21	92781	4.5
Jimboomba	6	59679	2
Loganlea - Carbrook	20	65038	6.2
Springwood - Kingston	25	80699	6.2
Bowen Basin - North	3	35749	1.4
Mackay	29	121477	4.8
Whitsunday	6	23405	5.1
Bribie - Beachmere	13	36807	7.1
Caboolture	21	79009	5.3
Caboolture Hinterland	1	14788	3.4
Narangba - Burpengary	16	69500	4.6
Redcliffe	27	63892	8.5
The Hills District	11	91187	2.4
North Lakes	8	87422	1.8
Strathpine	19	40136	9.5
Far North	4	33217	1.5
Outback - North	8	30966	5.2
Outback - South	5	17508	5.7
Buderim	12	59348	4
Caloundra	21	94329	4.5
Maroochy	26	63460	8.2
Noosa	13	46574	5.6
Sunshine Coast Hinterland	19	57685	6.6
Nambour	17	49237	6.9
Noosa Hinterland	8	24144	6.6
Toowoomba	46	162393	5.7
Charters Towers - Ayr - Ingham	13	42042	6.2
Townsville	65	195061	6.7
Bundaberg	37	93688	7.9
Burnett	8	50000	3.2
Gympie - Cooloola	16	53135	6
Hervey Bay	23	62921	7.3

Maryborough	18	47485	7.6
South Australia			
Adelaide City	10	25538	7.8
Adelaide Hills	11	78758	2.8
Burnside	5	46307	2.2
Campbelltown (SA)	6	54870	2.2
Norwood - Payneham - St Peters	19	37652	10.1
Prospect - Walkerville	11	30244	7.3
Unley	10	39223	5.1
Gawler - Two Wells	11	37554	5.9
Playford	24	99362	4.8
Port Adelaide - East	33	76430	8.6
Salisbury	38	145073	5.2
Tea Tree Gully	19	96997	3.9
Holdfast Bay	9	35800	5
Marion	29	96341	6
Mitcham	11	66622	3.3
Onkaparinga	45	176302	5.1
Charles Sturt	44	118285	7.4
Port Adelaide - West	36	61027	11.8
West Torrens	25	65403	7.6
Barossa	6	38314	3.1
Lower North	8	23103	6.9
Mid North	10	27777	7.2
Yorke Peninsula	7	26879	5.2
Eyre Peninsula and South West	16	58645	5.5
Outback - North and East	7	26835	5.2
Fleurieu - Kangaroo Island	8	55301	2.9
Limestone Coast	14	68081	4.1
Murray and Mallee	24	72815	6.6
Western Australia			
Augusta - Margaret River - Busselton	24	57778	8.3
Bunbury	56	109638	10.2
Manjimup	2	24138	2.1
Mandurah	67	108655	12.3

Cottesloe - Claremont	24	73674	6.5
Perth City	73	113176	12.9
Bayswater - Bassendean	53	86421	12.3
Mundaring	18	44662	8.1
Swan	62	149299	8.3
Joondalup	54	164272	6.6
Stirling	119	212136	11.2
Wanneroo	60	211863	5.7
Armadale	51	94599	10.8
Belmont - Victoria Park	45	77148	11.7
Canning	32	101280	6.3
Gosnells	55	129214	8.5
Kalamunda	23	60318	7.6
Serpentine - Jarrahdale	12	32495	7.4
South Perth	18	44786	8
Cockburn	72	116603	12.3
Fremantle	41	40679	20.2
Kwinana	28	46255	12.1
Melville	40	108210	7.4
Rockingham	54	138104	7.8
Albany	29	63130	9.2
Wheat Belt - North	27	57363	9.4
Wheat Belt - South	2	19989	2.5
Kimberley	7	38070	3.7
East Pilbara	11	26639	8.3
West Pilbara	12	32300	7.4
Esperance	7	16408	8.5
Gascoyne	10	9890	20.2
Goldfields	25	40076	12.5
Mid West	28	56501	9.9
Tasmania			
Brighton	7	19192	7.3
Hobart - North East	13	58368	4.5
Hobart - North West	23	57902	7.9
Hobart - South and West	10	36531	5.5

Hobart Inner	14	55674	5
Sorell - Dodges Ferry	6	18230	6.6
Launceston	29	87997	6.6
Meander Valley - West Tamar	3	24165	2.1
North East	8	39654	4
Central Highlands (Tas.)	3	12379	4
Huon - Bruny Island	8	21700	7.4
South East Coast	6	7482	16
Burnie - Ulverstone	10	50437	4
Devonport	8	48457	3.3
West Coast	6	18026	6.7
Northern Territory			
Darwin City	7	28558	4.9
Darwin Suburbs	19	57754	6.6
Litchfield	7	22935	6.1
Palmerston	13	38811	6.7
Alice Springs	19	40281	9.4
Barkly	2	6021	8.3
Daly - Tiwi - West Arnhem	4	17961	2.8
East Arnhem	2	14501	3.4
Katherine	10	21067	9.5
Australian Capital Territory			
Belconnen	32	104305	6.1
Canberra East	3	1829	27.3
Gungahlin	20	84904	4.7
North Canberra	33	60240	11
South Canberra	13	31039	8.4
Tuggeranong	32	88123	7.3
Weston Creek	5	24114	4.1
Woden Valley	11	38353	5.7
Molonglo	4	9696	5.2
Urriarra - Namadgi	0	611	0

Note: Data are aggregated over the five-year period. For areas with fewer than five deaths, the actual number of deaths has been suppressed to maintain confidentiality. For these areas, the rate has been calculated based on an assigned number of 2.5 deaths.

12.12. Data cubes for Chapter 10

Data for Figure 86: Number of drug- and alcohol-related ambulance attendances, by age group, 2022

	15–24	25–34	35–44	45–54	55+
Alcohol and other drugs	33,438	30,617	28,958	25,780	29,043

Data for Figure 87: Number of drug- and alcohol-related ambulance attendances, by sex, 2022

	Males	Females	Other
Alcohol and other drugs	82,983	64,297	12,582

Data for Figure 88: Number of drug- and alcohol-related ambulance attendances involving alcohol, by age group, 2022

	15–24	25–34	35–44	45–54	55+
Alcohol	16,292	14,701	16,585	17,568	22,101

Data for Figure 89: Number of drug- and alcohol-related ambulance attendances involving any pharmaceutical, by age group, 2022

	15–24	25–34	35–44	45–54	55+
Any pharmaceutical	9,965	6,885	5,591	4,971	5,613

Data for Figure 90: Number of drug- and alcohol-related hospitalisations in Australia, by drug type (excluding alcohol) 2016-17 to 2021-22

Drug-type	2016–17	2017–18	2018–19	2019–20	2020–21	2021-22
Stimulants	15,353	14,734	16,211	18,157	15,148	12,214
Methamphetamine	10,395	10,403	12,042	14,053	12,422	10,069
Antiepileptics	10,790	9,905	9,493	10,685	10,422	8,248
Non-opioid analgesics	9,172	7,826	7,197	6,783	8,213	7,269
Cannabinoids	6,302	6,461	6,100	6,640	7,488	6,854
Opioids	8,882	8,763	8,650	7,597	6,690	5,836
Benzodiazepines	6,361	5,479	5,204	5,001	4,687	3,799
Antipsychotics	4,674	4,409	4,433	4,163	4,110	3,709
Antidepressants	4,616	4,156	4,120	4,137	4,187	3,708
Cocaine	818	1040	1,217	1,275	1,786	1,256
Hallucinogens	339	335	376	435	471	314
Total	137,728	136,151	140,570	140,709	151,797	135,179

Data for Figure 91. Number of drug-related hospitalisations by principal diagnosis, 2001-02 – 2021-2022

Principal Diagnosis	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
Poisoning	24885	25139	25047	25733	25429	26116	26717	28068	27229	26717	27930
Substance use disorder	13441	12704	14033	13695	14407	14710	14636	14117	14703	17038	19107
	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	
Poisoning	27829	27551	29173	32156	33973	30377	29652	29170	29453	25400	
Substance use disorder	20570	22741	27384	31616	30978	30220	32098	33553	32966	26968	