



NIDIP

National Illicit Drug
Indicators Project



Trends in **OVERDOSE AND OTHER DRUG-INDUCED DEATHS**

in Australia, 2002-2021

Agata Chrzanowska, Nicola Man, Jane Akhurst, Rachel Sutherland, Louisa Degenhardt and Amy Peacock



Trends in OVERDOSE AND OTHER DRUG-INDUCED DEATHS in Australia, 2002-2021

Agata Chrzanowska¹, Nicola Man¹, Jane Akhurst¹,
Rachel Sutherland¹, Louisa Degenhardt¹
and Amy Peacock^{1,2}

¹ National Drug and Alcohol Research Centre, University of New South Wales

² School of Psychology, University of Tasmania

ISSN XXXX ©NDARC, UNSW SYDNEY 2023

This report was prepared by researchers from the National Drug and Alcohol Research Centre for the Drug Trends program. The Drug Trends program is coordinated by the National Drug and Alcohol Research Centre, UNSW Sydney and undertaken in partnership with the Burnet Institute, National Drug Research Institute, University of Queensland, and University of Tasmania.

This work is copyright. You may download, display, print and reproduce this material in unaltered form only (retaining this notice) for your personal, non-commercial use or use within your organisation. All other rights are reserved. Requests and enquiries concerning reproduction and rights should be addressed to NDARC, UNSW Sydney, NSW 2052, Australia.

Recommended citation: Chrzanowska A, Man N, Akhurst J, Sutherland R, Degenhardt L, Peacock A. Trends in overdose and other drug-induced deaths in Australia, 2002-2021. Sydney: National Drug and Alcohol Research Centre, UNSW Sydney; 2023. Available from: <http://doi.org/10.26190/m2gs-z325>

Please note that as with all statistical reports, there is the potential for minor revisions to data in this report. Please refer to the online version at [Drug Trends](#).

Please contact the Drug Trends team with any queries regarding this publication: drugtrends@unsw.edu.au.

Table of Contents

ACKNOWLEDGEMENTS	VI
EXECUTIVE SUMMARY	2
BACKGROUND AND METHODS	6
Data Source	6
Completeness of coroner referred deaths data at the time of preliminary coding	6
Data Revision	6
Scope of Reporting	7
Panel A. Terminology	7
Reporting of Results	8
Supporting Resources	8
OVERALL TREND IN DRUG-INDUCED DEATHS	9
Overall Trend	10
Panel B. Alcohol-induced deaths	11
Panel C. Drug-induced deaths and the COVID-19 pandemic	12
SOCIODEMOGRAPHIC CHARACTERISTICS OF DRUG-INDUCED DEATHS	14
Sex	15
Age	16
Sex and Age	17
Remoteness Area of Usual Residence	18
Remoteness Area and Sex	19
Remoteness Area and Age	20
Socio-Economic Advantage and Disadvantage	21
Profile	21
UNDERLYING CAUSE AND INTENT OF DRUG-INDUCED DEATHS	23
Underlying Cause of Death	24
Intent of Drug Overdose Deaths	24
Sex	25
Age	26
Remoteness Area of Usual Residence	27
PSYCHOSOCIAL RISK FACTORS AND PLACE OF OCCURRENCE IN DRUG-INDUCED DEATHS	29
Psychosocial Risk Factors	30
Common Psychosocial Risk Factors	30
Sex	31
Age	31
Intent of Drug Overdose Deaths	33
Place of Occurrence	34
Intent of Drug Overdose Deaths	34
DRUG INVOLVEMENT IN DRUG OVERDOSE DEATHS	35

Drug Involvement	36
Sex	37
Age	37
Intent of Drug Overdose Deaths	37
Profile of Drug Involvement	38
Profile by Intent of Drug Overdose Deaths	39
DRUG OVERDOSE DEATHS INVOLVING OPIOIDS	41
Overall Characteristics	42
Sex	42
Age	43
Intent of Drug Overdose Deaths	44
Opioid Type	44
Other Drug Involvement	45
DRUG OVERDOSE DEATHS INVOLVING AMPHETAMINE-TYPE STIMULANTS	47
Overall Characteristics	48
Sex	49
Age	49
Intent of Drug Overdose Deaths	50
DRUG OVERDOSE DEATHS INVOLVING COCAINE	51
Overall Characteristics	52
Sex	52
Age	52
Intent of Drug Overdose Deaths	52
DRUG INDUCED DEATHS BY JURISDICTION OF USUAL RESIDENCE	53
Australian Capital Territory	54
New South Wales	56
Northern Territory	59
Queensland	60
South Australia	63
Tasmania	66
Victoria	68
Western Australia	71

List of Figures

Figure 1. Number and age-standardised rate per 100,000 people of drug-induced deaths for the Australian population, 2002-2021.	10
Figure 2. Number and age-standardised rate per 100,000 people of drug-induced deaths for the Australian population, by sex, 2002-2021.	15
Figure 3. Crude rate per 100,000 people of drug-induced deaths for the Australian population, by age group, 2002-2021.....	16
Figure 4. Crude rate per 100,000 people of drug-induced deaths for the Australian population of females (A) and males (B), by age group, 2002-2021.....	17
Figure 5. Age-standardised rate per 100,000 people of drug-induced deaths for the Australian population, by remoteness area, 2009-2020.....	18
Figure 6. Age-standardised rate per 100,000 people of drug-induced deaths for (A) females and (B) males, by remoteness area, Australia 2009-2021.....	19
Figure 7. Rate per 100,000 people of drug-induced deaths in (A) major city areas and (B) regional and remote areas, by age, Australia 2009-2021.	20
Figure 8. Age-standardised rate per 100,000 people of drug overdose deaths for the Australian population, by intent, 2002-2021.	24
Figure 9. Age-standardised rate per 100,000 people of drug overdose deaths for (A) females and (B) males, by intent, Australia 2002-2021.	25
Figure 10. Crude rate per 100,000 people of drug-induced deaths coded as (A) unintentional and (B) intentional, by age, Australia, 2002-2021.....	27
Figure 11. Age-standardised rate per 100,000 people of drug-induced deaths coded as (A) unintentional and (B) intentional, by the remoteness area of usual residence, Australia, 2009-2021.	28
Figure 12. Most frequently identified places of occurrence for drug overdose deaths, Australia, 2006-2021.	34
Figure 13. Age-standardised rate per 100,000 people of drug overdose deaths for the Australian population, by drug class, 2002-2021.....	36
Figure 14. Thirty most common drug pattern profiles of unintentional (A) and intentional (B) drug overdose deaths, by sex, Australia, 2017-2021.....	39
Figure 15. Age standardised rate per 100,000 people of drug overdose deaths involving opioids for the Australian population, by sex, 2002-2021.....	42
Figure 16. Crude rate per 100,000 people of drug overdose deaths involving opioids for the Australian population, by age, 2002-2021.....	43
Figure 17. Age-standardised rate per 100,000 people of drug overdose deaths involving opioids for the Australian population, by opioid type, 2002-2021.....	45
Figure 18. Age-standardised rate per 100,000 people of drug overdose deaths involving opioids for the Australian population, by other drugs involved, 2002-2021.....	46
Figure 19. Age-standardised rate per 100,000 people of drug overdose deaths involving amphetamine-type stimulants for the Australian population, by sex, 2002-2021.....	48
Figure 20. Crude rate per 100,000 people of drug overdose deaths involving amphetamine-type stimulants for the Australian population, by age, 2002-2021.....	50
Figure 21. Age-standardised rate per 100,000 people of drug-induced deaths, Australian Capital Territory, 2002-2021.....	55
Figure 22. Age-standardised rate per 100,000 people of drug-induced deaths, by sex, New South Wales, 2002-2021.....	57

Figure 23. Age-standardised rate per 100,000 people of drug overdose deaths, by drug class, New South Wales, 2002-2021.	58
Figure 24. Number of drug-induced deaths, Northern Territory, 2002-2021	59
Figure 25. Age-standardised rate per 100,000 people of drug-induced deaths, by sex, Queensland, 2002-2021.	61
Figure 26. Age-standardised rate per 100,000 people of drug overdose deaths, by drug class, Queensland, 2002-2021.	62
Figure 27. Age-standardised rate per 100,000 people of drug-induced deaths, by sex, South Australia, 2002-2021.	64
Figure 28. Age-standardised rate per 100,000 people of drug overdose deaths, by drug class, South Australia, 2002-2021.	65
Figure 29. Age-standardised rate per 100,000 people of drug-induced deaths, by sex, Tasmania, 2002-2021.	67
Figure 30. Age-standardised rate per 100,000 people of drug overdose deaths, by drug class, Tasmania, 2002-2021.	67
Figure 31. Age-standardised rate per 100,000 people of drug-induced deaths, by sex, Victoria, 2002-2021.	69
Figure 32. Age-standardised rate per 100,000 people of drug overdose deaths, by drug class, Victoria, 2002-2021.	70
Figure 33. Age-standardised rate per 100,000 people of drug-induced deaths, by sex, Western Australia, 2002-2021.	72
Figure 34. Age-standardised rate per 100,000 people of drug overdose deaths, by drug class, Western Australia, 2002-2021.	73

List of Tables

Table 1. Changes in number of drug-induced deaths between COD URF revisions (from preliminary to final)	7
Table 2. Number and population rate of drug-induced deaths before and during the novel coronavirus disease (COVID-19) pandemic in Australia	13
Table 3. Percent changes in drug-induced deaths during the novel coronavirus disease (COVID-19) pandemic in Australia.....	13
Table 4. Proportion and number of drug-induced deaths by age group in major cities versus regional and remote areas, Australian, 2021.....	20
Table 5. Proportion of deaths by index of relative socio-economic advantage and disadvantage quintiles by sex, age group, intent, drug involved in overdose and jurisdiction, Australia, 2021.....	22
Table 6. Most common psychosocial risk factors in drug-induced deaths, Australia, 2021.....	30
Table 7. Ten most common psychosocial risk factors in drug-induced deaths by sex, Australia, 2021	31
Table 8. Five most common psychosocial risk factors in drug-induced deaths by age, Australia, 2021.....	32
Table 9. The most common psychosocial risk factors in unintentional and intentional overdose deaths, Australia, 2021	33

Acknowledgements

Funding

The Drug Trends program is funded by the Australian Government Department of Health and Aged Care under the Drug and Alcohol Program.

Data source

We acknowledge all state and territory Registries of Births, Deaths and Marriages, the Coroners and the National Coronial Information System (NCIS) for enabling Cause of Death Unit Record File (COD URF) data to be used for this publication.

Acknowledgements

We wish to acknowledge Lauren Moran and the team at the Australian Bureau of Statistics for their assistance with the data and ICD-10 coding practices to ensure rigorous, comprehensive, and consistent reporting on drug-induced deaths in Australia.

We would like to acknowledge the contribution of those who have been involved in past reporting on drug-induced deaths by Drug Trends, specifically: A/Prof Timothy Dobbins, Dr Amanda Roxburgh, and A/Prof Lucinda Burns.

We acknowledge the traditional custodians of the land on which the work for this report was undertaken. We pay respect to Elders past, present, and emerging.

Related Links

- For interactive data visualisations accompanying this report, go to: https://drugtrends.shinyapps.io/Deaths_2021
- For full details of the methods underpinning this report, go to: <https://ndarc.med.unsw.edu.au/resource-analytics/trends-drug-induced-deaths-australia-2002-2021>
- For other Drug Trends publications on drug-related hospitalisations and drug-induced deaths in Australia, go to: <https://ndarc.med.unsw.edu.au/project/national-illicit-drug-indicators-project-nidip>
- For more information on NDARC research, go to: <http://ndarc.med.unsw.edu.au/>
- For more information about the ABS, go to: <http://www.abs.gov.au>
- For more information on ICD coding go to: <http://www.who.int/classifications/icd/en/>
- For more information on the Remoteness Areas Structure within the Australian Statistical Geography Standard (ASGS), go to: <https://www.abs.gov.au/ausstats/abs@.nsf/mf/1270.0.55.005>
- For more research from the Drug Trends program and to subscribe to our newsletter, go to: <https://ndarc.med.unsw.edu.au/program/drug-trends>
- For details on the collection, organisation and interpretation of NCIS data, go to: <https://www.ncis.org.au/about-the-data/explanatory-notes/>
- For statistics about case closure statistics in NCIS, go to: <https://www.ncis.org.au/about-the-data/operational-statistics/>

Overdose and Other Drug-Induced Deaths in Australia, 2021



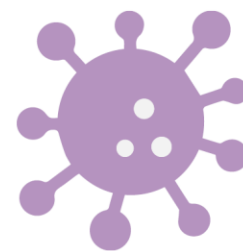
Preliminary estimates indicate that there were 1,788 drug-induced deaths in 2021 (excluding deaths caused by alcohol and tobacco).



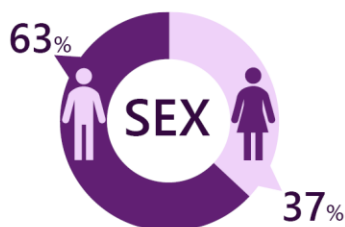
There were five drug-induced deaths per day among Australians, which is 1.0% of all registered deaths in Australia in 2021.



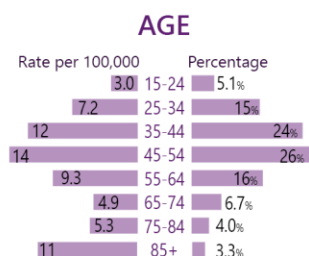
The national preliminary revised rate of drug-induced deaths in 2021 was lower than the revised rate in 2020; these rates are likely to further increase with data revisions.



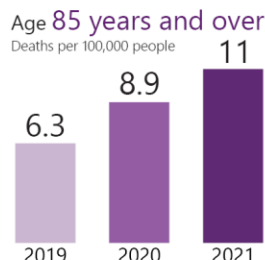
The 2020 and 2021 quarterly rates were similar to or lower than the corresponding 2019 estimates.



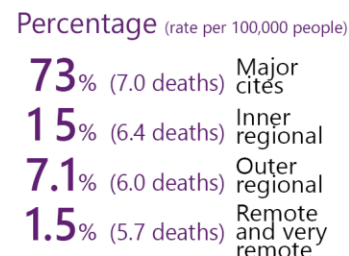
More than three in five drug-induced deaths occurred among males.



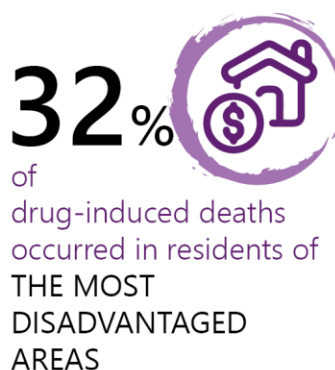
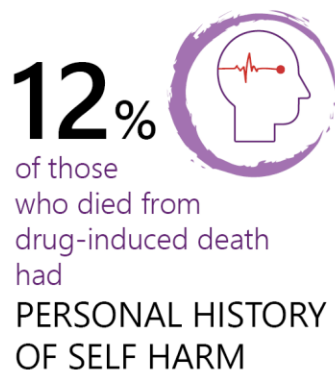
Overdose and other drug-induced deaths were most common among 45-54 and 35-44 year olds.



The 85 and over age group was the only age group where both 2020 and 2021 estimated rates were higher than the 2019 rate; these rates are likely to further increase with data revisions.

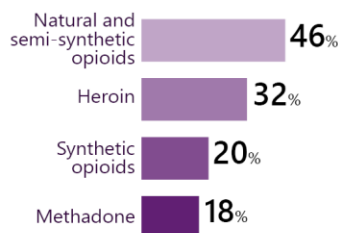


The majority of deaths occurred in major cities however the rate of deaths was similar in major cities and inner regional areas.

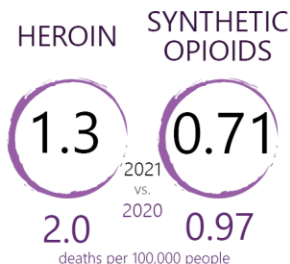


- 58%** Opioids
- 54%** Antiepileptic, sedative-hypnotic and anti-parkinsonism
- 32%** Antidepressants
- 26%** Amphetamine-type stimulants
- 21%** Antipsychotics and neuroleptics
- 16%** Alcohol

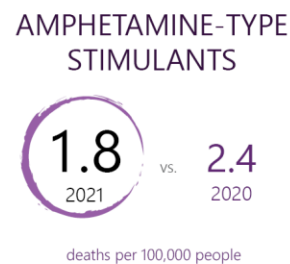
Opioids were the most commonly identified substances involved in drug overdose deaths.



Natural and semi-synthetic opioids (e.g., morphine, oxycodone) was the most commonly identified opioid type in opioid overdose deaths.



Estimated rate of overdose deaths involving opioids in 2021 was lower compared to 2020, which was particularly evident for deaths involving heroin and synthetic opioids.



The rate of drug overdose deaths involving amphetamine-type stimulants was lower in 2021 compared to the peak recorded in 2020.

Executive Summary

This report presents findings on all drug-induced deaths (i.e., overdose and other drug-induced deaths where drugs have been deemed the underlying cause of death) in Australia from 2002 to 2021.

Data are from the Cause of Death Unit Record File (COD URF) collated by the Australian Bureau of Statistics (ABS).

The ABS undertakes a revision process for coroner-certified deaths over a 3-year period. Accordingly, data for 2020 and 2021 are classified as 'revised' and 'preliminary revised' respectively but are not final and will be subject to revision.

Estimates in this report do not include deaths where conditions related to alcohol or tobacco use comprise the underlying cause of death as they fall outside our monitoring (see [methods](#)), although estimates of alcohol-induced deaths are provided in **Panel B**.

Estimates comprise number of deaths and age-standardised mortality rates for Australians of all ages, disaggregated by sex, age, remoteness of usual residence, underlying cause of death and intent, psychosocial risk factors, drug type, and jurisdiction of usual residence. Average annual percent change was estimated using Joinpoint regression for the trend between 2002-2019 in drug-induced deaths and by drug involvement. Statistical comparisons were undertaken of estimated rates for 2020 versus 2021. All other comparisons are descriptive.

Our public [online data visualisation](#) allows viewers to disaggregate data in different ways, and to download these images for their own use.

Overall

Drug-induced deaths in Australia continue to be a significant public health issue. Preliminary data show that there were [1,788](#) drug-induced deaths (including those from drug overdose) among Australians in 2021.

This number of deaths is equivalent to 5 drug-induced deaths per day among Australians in 2021 and comprised 1.0% of all registered deaths in Australia.

Since 2002, the rate of drug-induced deaths steadily increased on average by 3.5% per year, reaching a peak in 2017 with 8.2 deaths per 100,000 people. The 2018 to

2021 estimates were lower than the rate for 2017, however, the 2020 and 2021 estimates are not final and are expected to increase with further revision.

Alcohol-induced deaths (see Panel B). Alcohol use as an underlying cause of death is excluded from analysis in this report, which is focused on trends related to use of drugs illicitly or extra-medically. However, alcohol is a major contributor to mortality in Australia. According to most recent data, there were 1,578 alcohol-induced deaths registered in Australia, equivalent to 5.5 deaths per 100,000 people in 2021, equivalent to approximately five deaths per day. This was the highest rate recorded in the past 10 years, and approaching the earlier peak observed in 2002 (5.8 deaths per 100,000 people). These estimates only capture deaths directly attributed to alcohol use; those deaths partly attributed to alcohol typically carry even greater mortality burden.

Indeed, the preliminary revised estimated rate of drug-induced deaths in 2021 was [6.9 deaths](#) per 100,000 Australians, which is 8.9% lower than the rate in 2020 (7.6 deaths per 100,000 Australians) but both figures are anticipated to increase with revision.

Drug-induced deaths and the COVID-19 pandemic (see Panel C). The COVID-19 pandemic and associated restrictions on gathering and movement impacted drug supply and demand. There has been significant concern about changes in drug-related harms since the pandemic onset, warranting study of mortality data. In Australia, most drug-induced deaths are referred to the coroner and can take several years to process. Thus, more recent estimates than 2021 are not yet available and estimates of drug-induced deaths for 2020 and 2021 are subject to revision. Our study of preliminary data suggests that quarterly rates of drug-induced deaths in 2020 and 2021 were similar or lower than the corresponding 2019 estimates. These estimates are provided only as a tentative early indication of the pattern of drug-related mortality. There are many factors that may influence count of deaths. Deviations between quarters should be treated with caution. More detailed and sophisticated temporal analyses with a longer time series are in progress and will be reported on in future outputs.

The issue of drug-induced deaths is complex and multifaceted, with factors such as socio-economic disadvantage, mental health, and lack of access to healthcare and harm reduction services playing a key role.

Sex

In 2021, [males](#) accounted for 63% (1,120 deaths) of drug-induced deaths. This profile has been consistent over time.

The drug-induced death rate in the male population was [8.9](#) deaths per 100,000 people in 2021, which was lower compared to the rate in 2020 (10 deaths per 100,000 people). The rate in the male population was two times higher than the rate in females (5.0 deaths per 100,000 people in 2021). The rate among females in 2021 was relatively stable as compared to 2020 (5.2 deaths per 100,000 people).

Age

In 2021, a greater proportion of drug-induced deaths occurred among those aged [45-54](#) (26%, 460 deaths) and 35-44 (24%, 434 deaths), which represents a shift compared to 2020, when deaths were most common among the 35-44 age group.

The rate of drug-induced deaths among the [35-44](#) age declined by 14% from 14 in 2020 to 12 deaths per 100,000 people in 2021. The 2021 rate was also lower in the 15-24 age group as compared to 2020 (3.0 versus 3.9 deaths per 100,000 people).

Although the number of deaths remained lowest for those aged [85 and over](#) and the statistical comparison between 2020 and 2021 estimates did not identify significant differences, it is noticeable that the population rate was higher than in the previous year for the last two consecutive years:

- 6.3 deaths per 100,000 people in 2019,
- 8.9 deaths per 100,000 people in 2020, and
- 11 deaths per 100,000 people in 2021.

The 2020 and 2021 estimates are likely to further increase with the data revision.

Remoteness Area of Usual Residence

As in previous years, the greatest proportion of drug-induced deaths in 2021 occurred in [major city areas](#) (73%,

1,314 deaths), followed by inner regional (15%, 296 deaths), outer regional (7.1%, 127 deaths), and remote/very remote (1.5%, 27 deaths) areas.

After adjusting for population size, the rate of drug-induced deaths in 2021 was also highest among people from [major city areas](#) (7.0 deaths per 100,000 people), followed by the inner regional areas (6.4 deaths per 100,000 people), and lowest in remote/very remote areas (5.7 deaths per 100,000 people).

The only statistically significant difference in rate in 2021 versus 2020 was observed for major city areas, with an 7.8% reduction in the rate of drug-induced deaths (7.0 in 2021 versus 7.6 deaths per 100,000 people in 2020).

Socioeconomic Advantage and Disadvantage

In 2021, 32% (569 deaths) of drug-induced deaths occurred in residents of the most disadvantaged areas. This amounted to 33% (375 deaths) for males and 29% (194 deaths) for females, respectively. While the greatest proportion of decedents aged 25 to 84 lived in the most disadvantaged areas, the highest proportion (33%, 30 deaths) of those aged 15 to 24 resided in fairly advantaged areas. Those living in the most disadvantaged areas accounted for the highest percentage of overdose deaths involving all drug types, except for cocaine where 29% of deaths (24 deaths) occurred among people living in the most advantaged areas.

Underlying Cause of Death and Intent

As in 2020, drug overdose ('poisoning') deaths accounted for 97% (1,732 deaths) of all drug-induced deaths in 2021. The intent of death is recorded for drug overdose deaths only. In 2021, 68% (1,180 deaths) of drug overdose deaths were coded as [unintentional](#) and 27% (468 deaths) as intentional.

The rate of unintentional drug overdose deaths nearly [doubled](#) from 2002 to 2019, increasing on average by 4.1% per year. In contrast, the rate of intentional drug overdose deaths remained low and relatively stable.

A comparison of the estimated rates suggests lower rate of unintentional drug overdose in 2021 compared to 2020

while the rate of intentional drug overdose remained similar.

Psychosocial Risk Factors

Between 2017 and 2021, two-in-five (40%, 5,813 deaths) drug-induced deaths had at least one psychosocial risk factor coded. Over half (65%) of the identified risk factors were related to socioeconomic and psychosocial circumstances (in particular, problems related to primary support group).

In 2021, [personal history of self-harm](#) was the most frequently identified psychosocial risk factor (12%, 206 deaths). It was more common in deaths involving females than males. It was also the most frequently identified psychosocial risk factors across all age groups, with the exception of those aged 75 and over, for whom limitation of activities due to disability was the most common psychosocial risk factor.

Place of Occurrence

In 2021, the most common location of the incident underlying the drug overdose death was [home](#) (76%, 1,324 deaths). This has been consistent over time. The location was coded as home for a larger proportion of intentional (84%, 865 deaths) than unintentional (73%, 391 deaths) deaths.

Drug Involvement

Similar to previous years, [opioids](#) (such as heroin and pharmaceutical opioids) were the most commonly involved drug class in drug overdose deaths in 2021 (58%, 1,008 deaths), followed by antiepileptic, sedative-hypnotic and anti-parkinsonism drugs (54%, 943 deaths; predominantly benzodiazepines, 778 deaths).

The rates of drug overdose deaths for all drug types have increased from 2002 to 2019, generally peaking in 2017 or 2018, except for [cocaine](#) and [amphetamine-type stimulants](#), whose rates kept increasing and peaked in 2019 and 2020, respectively.

Analysis showed a significantly lower rate of drug overdose deaths in 2021 as compared to 2020 for:

- amphetamine-type stimulants,
- antidepressants,
- antiepileptic, sedative-hypnotic and anti-parkinsonism drugs,
- cannabinoids, and

- opioids.

Profile of Drug Involvement

Between 2017 and 2021, the majority (77%) of drug overdose deaths included two or more drug classes of interest. Despite that, the most common drug pattern profile for unintentional overdose deaths was amphetamine-type stimulants only (6.3%). In intentional overdose deaths, the most common drug pattern profile was antiepileptic, sedative-hypnotic and anti-parkinsonism drugs only (9.6%).

Drug Overdose Deaths Involving Opioids

In 2021, there were [1,008](#) drug overdose deaths involving opioids among Australians. These deaths typically occurred among males (64%, 642 deaths) and in the 45-54 (28%, 282 deaths) and 35-44 (27%, 268 deaths) age groups. Three-in-four (76%, 763 deaths) were considered unintentional.

From 2002 to 2019, the rate of drug overdose deaths involving opioids more than doubled (2.5 versus 5.0 deaths per 100,000 people, respectively), increasing on average by 5.1% per year and peaking of [5.8 deaths](#) per 100,000 people recorded in 2017. The estimated rate for 2021 was lower than the revised rate in 2020 (4.0 versus 4.8, respectively). This decrease from 2020 to 2021 was particularly evident for overdose deaths involving heroin (by 33%) and synthetic opioids (by 26%), although estimates will be subject to change.

One-in-four (25%, 256 deaths) opioid-overdose deaths in 2021 were attributable to [heroin only](#), 67% (674 deaths) to opioids other than heroin (e.g., pharmaceutical opioids) and 6.9% (70 deaths) to both heroin and other opioids. Indeed, natural and semisynthetic opioids was the most commonly identified opioid type in opioid overdose deaths in 2021 (46%, 462 deaths).

Drug Overdose Deaths Involving Amphetamine-Type Stimulants

There were [451](#) drug overdose deaths involving amphetamine-type stimulants among Australians in 2021 (26% of overdose deaths). These deaths typically occurred among males (74%, 335 deaths) and in the 35-44 (33%, 147 deaths), 45-54 (29%, 132 deaths) and 25-34 (21%, 94 deaths) age groups.

The rate of drug overdose deaths involving amphetamine-type stimulants increased over 6-fold

between 2002 and 2019, increasing on average by 14% per year. The highest rate of [2.4 deaths](#) per 100,000 people was recorded in 2020. The estimated rate in 2021 was lower (1.8 deaths per 100,000 people).

Drug Overdose Deaths Involving Cocaine

There were [82](#) drug overdose deaths involving cocaine among Australians in 2021 (4.7% of overdose deaths). These deaths typically occurred among males (83%, 68 deaths) and in the 25-34 (52%, 43 deaths) age group, and 94% (77 deaths) were unintentional.

Although the absolute numbers remain small and the latest estimates are preliminary, the rate of drug overdose deaths involving cocaine has increased significantly from 0.068 in 2002 to [0.38 deaths](#) per 100,000 people in 2019, increasing on average by 12% per year. Analyses do not suggest a statistically significant change in the estimated rate between 2020 and 2021.

Jurisdiction of Usual Residence

Detailed analyses of deaths by jurisdiction (including by sex, age, intent, remoteness area, drug type and place of occurrence) are available at the end of this report.

Background and Methods

Data Source

Data from the Australian Bureau of Statistics (ABS) were accessed from the Cause of Death Unit Record File (COD URF) through the Australian Coordinating Registry (ACR) and analysed in consultation with the ABS. **Data are presented for 2002-2021; data for 2020 and 2021 are not final and may be subject to revision (see below).**

Completeness of coroner referred deaths data at the time of preliminary coding

Drug-induced deaths are one of the causes of death with the highest proportion of coroner-referred cases. On average, [97%](#) of drug-induced deaths are certified by a coroner. As indicated in the ABS [Causes of Death Methodology document](#) and the NCIS [Operation Statistics](#), deaths that are referred to coroner for investigation take time to be closed. For 'open' cases (i.e., those that are still under investigation and have not been certified by a coroner yet) and when insufficient information is available to code a cause of death, less specific ICD codes are temporarily assigned. Those cases often cannot be reported on, or when they are counted as drug-induced deaths, the drug involved remain unspecified. Those cases are then revised and recoded when additional coronial information becomes available. More information on coding of coroner certified deaths can be found in [Cause of Death, Australia methodology](#).

Data Revision

Because of the time delay in coroner-certification of deaths, the ABS undertake a revision process for coroner-certified deaths over a 3-year period. Data available after the first data collection cycle are preliminary (and are titled accordingly). These data then go through a two-stage revision cycle. After the first revision, the data are titled 'revised' and after the second and final revision the data become final.

Table 1 outlines changes in the number of drug-induced deaths with each data revision undertaken by the ABS. When data undergo the first revision process, the change between the preliminary and revised number is greater (on average 7.3% increase) than when data changes from revised to final (on average 0.85% increase).

There were more open coroner cases at the time of preliminary coding of 2021 data than there were in prior years (67.2% versus a 5-year average of 56.2% for 2015-2019) (see [methods](#) for details). This prompted the ABS to complete an additional revision of 2021 data, published on the 14th April 2023. The ABS focussed on deaths coded to ill-defined causes of death in this preliminary revision. This publication reports on findings from the most recently revised datasets:

- 2002-2019 final data,
- 2020 revised data, and
- 2021 preliminary revised data.

Based on the percent changes in estimated numbers of drug-induced deaths after historical revisions (Table 1), the 2020 revised estimates reported on in this publication may increase by approximately 0.56% to 1.6% when they become final. The 2021 preliminary revised estimates will undergo two further revisions. The estimates presented in this report are expected to increase by approximately 5.4% to 11% when they become revised in the next revision cycle and by approximately 0.56% to 1.6% when they become final. These changes can vary between jurisdictions (which have different coroner case closure statistics) and for some drug involvements as indicated in [the ABS publication](#).

Table 1. Changes in number of drug-induced deaths between COD URF revisions (from preliminary to final)

Reference year	Preliminary	Revised	Final			
	N	N	% change from prelim.	N	% change from revised	% change from prelim.
2016	n/a	1,858	n/a	1,869	0.59%	n/a
2017	1,795	1,991	11%	2,003	0.60%	12%
2018	1,817	1,948	7.2%	1,980	1.6%	8.9%
2019	1,865	1,966	5.4%	1,977	0.56%	6.0%
2020	1,842	1,946	5.6%	-	-	-
2021	1,704	1,788^a	4.9% ^a	-	-	-

Note: The numbers used in this report are highlighted. Data for 2002-2015 are final but are not displayed in the table.

'n/a' indicates that historical data is not available from previous reporting; '-' indicates that data is not available yet and will be completed in future reports when it becomes available. ^a indicates preliminary revised data: due to low proportion of closed cases when the preliminary revised data was collected (see [Technical note](#)).

Scope of Reporting

We present estimates of drug-induced deaths directly attributable to use of *illicit drugs* (e.g., heroin), some *prescription medicines* (that may be prescribed to the individual or obtained via other means) and *medicines available over-the-counter*. These figures only include overdose and other drug-induced deaths where drugs have been deemed the underlying cause of death (**Panel A**. Terminology). The figures presented here do not include deaths from accidents caused by being under the influence of a drug (e.g., motor vehicle accident). In this report, the mortality caused by cocaine, amphetamine, and opioids are given particular attention.

Panel A. Terminology

- **Underlying cause of death (UCOD)** is the disease or condition which initiated the sequence of events resulting in death. There can be only one underlying cause of death.
- **Associated causes of death (ACOD)** are any other diseases or conditions that contributed to the death and are listed on the death certificate but were not deemed the underlying cause of death.
- **Multiple causes of death (MCOD)** include all causes, diseases and conditions reported on the death certificate. This includes the underlying cause of death and all associated causes of death.
- **Drug-induced death** includes all deaths where the UCOD indicates a substance-use disorder or direct harm due to selected substances (excluding alcohol and tobacco). Captured within this category are drug poisoning (overdose) deaths, which comprise all deaths where the acute toxic effects of a drug were determined by the coroner, forensic pathologist or forensic toxicologist to be the UCOD, regardless of intent.
- **Drug overdose death involving selected drug** is where poisoning by the drug of interest (e.g., benzodiazepines) was indicated in the UCOD or MCOD, noting that there may be other drugs coded to these fields. For example, a 'drug overdose death involving benzodiazepines' could comprise an opioid as UCOD and a benzodiazepine and alcohol as MCOD.

This report presents trend of drug-induced deaths from 2002 to 2021. Please refer to [earlier publications](#) and the [online interactive data visualisation](#) for estimates from 1997. Data prior to 1997 were also reported on in earlier publications, but the data were coded using ICD-9 and may not be directly comparable to the data presented in this report.

The definition of drug-induced deaths excludes deaths where conditions related to alcohol or tobacco use comprise the underlying cause of death as they fall outside the scope of our monitoring. However, rates of alcohol involvement in drug-induced deaths, as a substance *contributing* to a death (as opposed to being the *underlying* cause), are reported. As a special addition to this report, we also included a summary of alcohol-induced deaths (**Panel B**) as defined by the ABS in the [Causes](#)

[of Death, Australia, 2021 report](#). We acknowledge the significant loss of life from these substances (see the [National Alcohol Indicators Project](#), [ABS reporting](#) and [Australian Institute of Health and Welfare reporting](#) for further information).

The codes applied here to identify cause of death have limited specificity by drug type, often identifying only the broad drug class (e.g., amphetamines). It is important to note that many drug-induced deaths involve more than one drug (including alcohol), and sometimes it is not possible to determine one substance as the underlying cause of death.

Reporting of Results

Estimates presented here comprise number of deaths and age-standardised mortality rates for Australians of all ages. The exception is where we report by age group (e.g., 10-year age groups); in these instances, we present age-specific rates calculated as population crude rates in the given age group. Small numbers and rates of deaths are not presented to protect the confidentiality of individuals.

Our reporting aims to describe the profile of drug-induced deaths (i.e., key sociodemographic, clinical and contextual features of these deaths) and the trend over time in rates of drug-induced deaths adjusting for age and changes in population size. With the latter, we focus on the trend analysis in rates from 2002 to 2019, as annual estimates for these years are final. The Joinpoint regression was used to estimate trend in rates expressed as an average annual percent change and statistical significance of the change from 2002 to 2019.

In saying this, we acknowledge that there is particular interest in whether the new release of (estimates for 2021 reflect a change relative to the previous year. Annual estimates for 2020 to 2021 are reported on but should be treated with caution as they are not final and may be revised upwards. Percent change and 95% confidence intervals (95%CI) were computed to determine whether there was a statistically significant difference in the 2020 to 2021 mortality rates for all such comparisons (see the [methods](#) for further detail). Data for 2020 and 2021 are not at the same stage of revision (2020 being revised and 2021 preliminary revised) and thus it is important to note that estimates for both years are anticipated to increase with revisions (see Table 1). Percent changes for all comparisons of 2020 and 2021 mortality rates are available in **Appendix A**, and statistically significant comparisons are identified in-text.

All other comparison of numbers and rates between other years are descriptive.

We align our coding practices with those of the ABS and international organisations. Number of deaths may differ between organisations reporting on drug-induced deaths due to the codes used. Please see a summary of reporting practices provided by the AIHW for further information ([Box IMPACT1](#) in the Web report *Alcohol, tobacco & other drugs in Australia*).

Supporting Resources

An accompanying public [online data visualisation](#) allows viewers to disaggregate data in many different ways, and to download these images for their own use. This visualisation allows viewers to look at trends by drug, jurisdiction, sex, age group, remoteness and intent.

Full details of the [methods](#) (including the codes used) are available for download; this document and the [ABS Explanatory Notes](#) should be read alongside this report.

1

Overall Trend in Drug-Induced Deaths

2021 Drug-induced
DEATHS

1,788

drug-induced
deaths

6.9

deaths per
100,000
Australians

5

deaths
per day

1%

of all recorded and
reported deaths in
Australia

↓ 8.9%

lower than
the rate in
2020

2002-2021

Age-standardised rate per 100,000 people of
drug-induced deaths,
Australia, 2002-2021

Note: Deaths where conditions related to alcohol or tobacco comprised the underlying cause of death are not captured here.
Causes of death data for 2020 and 2021 are not final and thus are subject to further revision (indicated by the grey area on the plot).

Overall Trend

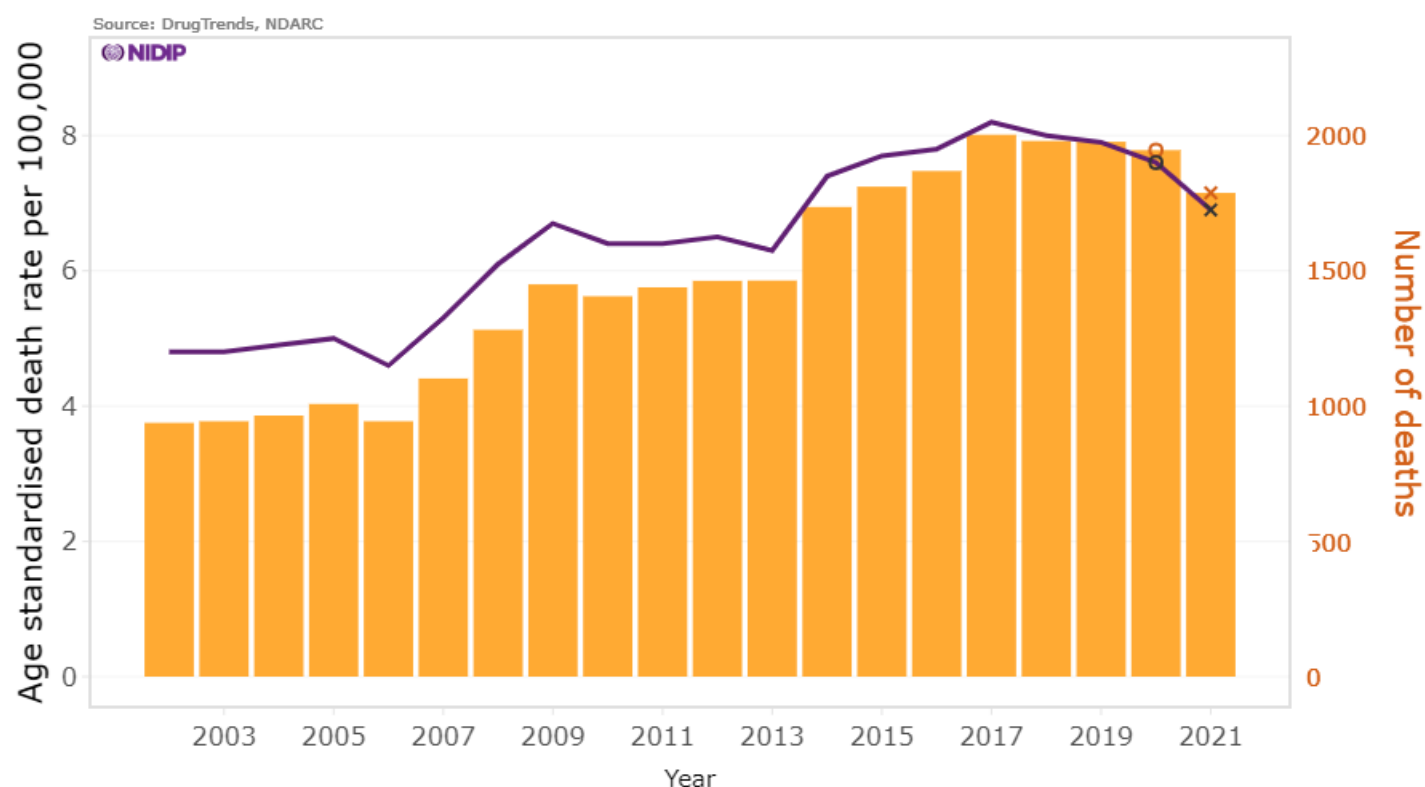


In 2021, there were 1,788 drug-induced deaths among Australians, equivalent to 1% of all recorded and reported deaths in Australia. This equates to 6.9 deaths per 100,000 Australians ([Figure 1](#)), or approximately five deaths per day. These deaths do not include deaths where conditions related to alcohol or tobacco use were the underlying cause of death, although a summary of rates of alcohol-induced deaths is presented in **Panel B** for reference.

Trends since 2002

- From 2002 to 2019, Australia has experienced a rise in the *number* of drug-induced deaths peaking in 2017 at 2,003 deaths.
- The annual *rate* of drug-induced deaths (adjusting for age and changes in population size) also gradually increased from 2002, rising to 8.2 deaths per 100,000 people in 2017. Indeed, the population rate increased on average by 3.5% per year over this period.
- The preliminary revised 2021 estimated rate is lower than the revised 2020 by 8.9% (6.9 versus 7.6 deaths per 100,000 people, respectively) (Table A1) but the preliminary revised estimate of 2021 is expected to increase to a greater extent than the revised estimate of 2020 with further data revisions.

Figure 1. Number and age-standardised rate per 100,000 people of drug-induced deaths for the Australian population, 2002-2021.

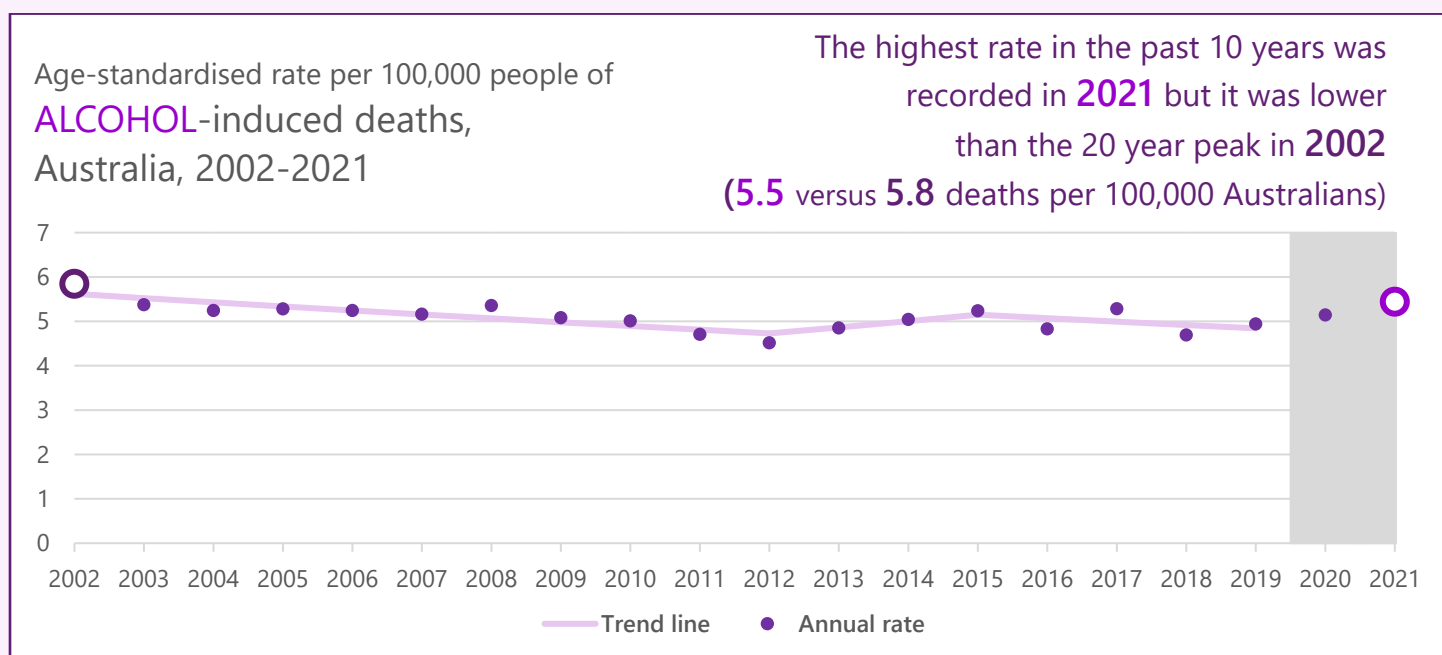


Note: Deaths where conditions related to alcohol or tobacco comprised the underlying cause of death are not captured here. Causes of death data for 2020 and 2021 are not final and thus are subject to further revision. The symbol 'o' indicates revised estimates and 'x' preliminary estimates.

Panel B. Alcohol-induced deaths

Alcohol use as an underlying cause of death is excluded from the analysis presented in this report, which is focused on trends related to use of drugs illicitly or extra-medically. However, alcohol is a major contributor to mortality in Australia, and a significant public health concern. According to the [latest available data](#), in 2021, there were 1,578 alcohol-induced deaths registered in Australia, equivalent to 5.5 deaths per 100,000 people.

This is higher than the revised 2020 rate (5.3 alcohol-induced deaths per 100,000 people in 2020). This was also the highest rate recorded in the past 10 years, and approaching the earlier peak observed in 2002 (5.8 deaths per 100,000 people). The 2020 estimate will be revised one more time, while the 2021 estimate will be revised twice and is likely to increase further ([ABS cat. 3303.0](#)). It is also important to note that these estimates only capture deaths directly attributed to alcohol use; they do not capture all accidents, homicides, and other causes partially attributable to alcohol use (see [methods](#) for details and list of ICD-10 codes used) which often carry even greater mortality burden. We refer the reader to the [National Alcohol Indicators Project](#) for estimates of alcohol-attributable deaths.



Note Causes of death data for 2020 and 2021 are not final and thus are subject to further revision (indicated by the grey area on the plot).

In 2021, males accounted for the majority of alcohol-induced deaths, with a rate of 8.3 deaths per 100,000 people. The rate of alcohol-induced death among females in 2021 was 2.8 deaths per 100,000 people. The age group with the highest rate of alcohol-induced deaths was 55-64 years, with a rate of 16 deaths per 100,000 people. The median age of decedents was 58 years (IQR: 49, 67).

In terms of specific causes of alcohol-induced deaths, the most common were alcoholic liver disease, which accounted for 64% of all alcohol-induced deaths, and mental and behavioural disorders due to alcohol, which accounted for 21% of deaths. Unintentional alcohol poisoning was the underlying cause of 8.4% of alcohol-induced deaths.

Panel C. Drug-induced deaths and the COVID-19 pandemic

Overall mortality

Australia has had multiple waves of COVID-19 infections with periods of restrictions on gathering and movement: i) from mid-March to mid-April 2020, impacting most Australian jurisdictions, ii) from June 2020 to October 2020 impacting mostly Victoria, iii) from June 2021 impacting mostly New South Wales and Victoria, and iv) from November 2021 with identification of the Omicron variant.

Study of mortality trends over this time show that Australia was one of few countries to record [lower than expected mortality](#) in 2020. While this was largely driven by statistically significant decreases in respiratory diseases (namely influenza), there were also decreases in external causes of death including suicide and land transport accidents. By contrast, mortality was higher than expected in 2021, but deaths due to respiratory deaths remained lower than expected.

Drug-related mortality

The COVID-19 pandemic and associated restrictions on gathering and movement have impacted drug supply and demand. In Australia, [wastewater data](#) show reduced population-level exposure to some illicit drugs, particularly methamphetamine, in the first two years of the pandemic. Survey data also suggested disruption to illicit drug use for some people, typically attributed to restrictions on gathering, limiting opportunities for use in such contexts, and reports of reduced availability and increased price of certain drugs. Given these changes in use and markets, there has been significant concern about potential changes in drug-related harms, [disruption to drug treatment and harm reduction services](#), and overstretched acute emergency health services. Such concern warrants particular attention to trends in rates of drug-induced deaths in Australia.

In terms of drug-related mortality trends, [most drug-induced deaths](#) in Australia are referred to the coroner and subject to forensic pathology and toxicology testing. Deaths referred to the coroner can take several years to process, particularly if an inquest is being held or complex investigations are being undertaken. Thus, more recent estimates (i.e., for 2022 and 2023) are not yet available. Further, caution must be exacted in comparing estimates for 2020 to 2021 to previous years, as these estimates are subject to further revisions.

Table 2 shows the number and rate of drug-induced deaths per quarter before onset of the COVID-19 pandemic and associated restrictions (i.e., all quarters of 2019 and the first quarter of 2020) and after onset of the COVID-19 pandemic and associated restrictions (i.e., the second, third and fourth quarter of 2020 and all quarters of 2021). All quarters of 2021 are shown, however data for the fourth quarter of 2021 are not analysed following consultation with ABS on the completeness of these data. We have estimated the percentage difference in the rates (Table 3; see the [methods](#) for further detail). These estimates are shown nationally and for New South Wales and Victoria, the two most populous jurisdictions in Australia. Estimates for other jurisdictions are not presented due to smaller numbers when disaggregated by quarter.

In general, the 2020 and 2021 quarterly rates were similar or lower than the corresponding 2019 estimates. The national rate of drug-induced deaths in Q2 and Q3 2020 versus Q2 and Q3 2019 was not significantly different (3.2% and -8.7% difference, respectively) and so was Q1 2021 versus Q1 2019 (-7.5% difference; Table 3). Significant differences in rates were identified between the following quarters:

- Q4 2020 versus Q4 2019 (-14%),
- Q2 2021 versus Q2 2019 (-14%), and
- Q3 2021 versus Q3 2019 (-19%).

In New South Wales only the estimated rate of drug-induced deaths in Q3 2021 was significantly different than Q3 2019 (-28% difference). In Victoria, a statistically significant difference was identified in Q4 2020 versus Q4 2019 and in Q2 2021 versus Q2 2019 (-29% and -26%, respectively).

Preliminary estimates are provided as a tentative early indication of the pattern of drug-related mortality. There are many factors that may influence estimates. Deviations between quarters should be treated with caution, particularly as estimates will be revised as coronial investigations are closed and additional deaths registrations are received by the ABS. Deaths occurring in more recent quarters are anticipated to show a greater increase with revision.

More detailed temporal analyses with a longer time series are currently underway. This work will draw on sophisticated methodologies (e.g., interrupted time series analyses) to facilitate causal inference regarding the impact of the COVID-19 pandemic and associated restrictions on gathering and movement on rates of drug-induced deaths. Please contact the Drug Trends team (drugtrends@unsw.edu.au) for further information.

Table 2. Number and population rate of drug-induced deaths before and during the novel coronavirus disease (COVID-19) pandemic in Australia

Location	2019				2020				2021			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Number of drug-induced deaths per quarter												
Australia	473	491	510	506	491	513	469	436	444	430	416	268
New South Wales	145	137	162	119	141	158	130	119	116	119	117	98
Victoria	117	134	110	148	134	132	118	105	110	100	96	51
Rate of drug-induced deaths per 100,000 people per quarter												
Australia	1.9	1.9	2.0	2.0	1.9	2.0	1.8	1.7	1.7	1.7	1.6	1.0
New South Wales	1.8	1.7	2.0	1.5	1.7	2.0	1.6	1.5	1.4	1.5	1.4	1.2
Victoria	1.8	2.1	1.7	2.2	2.0	2.0	1.8	1.6	1.7	1.5	1.5	0.8

Note: Q1: January – March; Q2: April – June; Q3: July – September; Q4: October – December.

Deaths were assigned to a quarter based on the month of death; all other data in this report are based on reference year (see [methods](#) for details). Data for Q4 2020 are not presented following consultation with ABS on the completeness of these data. Quarterly rates are based on quarterly estimates of the national, state and territory resident population ([released on 15 December 2022](#)). Estimates are subject to change with data revisions.

Table 3. Percent changes in drug-induced deaths during the novel coronavirus disease (COVID-19) pandemic in Australia

Location	Percent Change (%) 2020 versus 2019			Percent Change (%) 2021 versus 2019		
	Q2	Q3	Q4	Q1	Q2	Q3
Change in number of drug-induced deaths						
Australia	4.5%	-8.0%	-14%	-6.1%	-12%	-18%
	(-8.4, 17)	(-20, 3.5)	(-25, -2.8)	(-18, 6.0)	(-24, -1.1)	(-29, -7.9)
New South Wales	15%	-20%	0%	-20%	-13%	-28%
	(-11, 42)	(-38, -1.2)	(-25, 25)	(-40, -0.47)	(-34, 8.2)	(-45, -11)
Victoria	-1.5%	7.3%	-29%	-6.0%	-25%	-13%
	(-25, 22)	(-21, 35)	(-47, -11)	(-30, 18)	(-45, -6.0)	(-37, 11)
Change in population rate of drug-induced deaths						
Australia	3.2%	-8.7%	-14%	-7.5%	-14%	-19%
	(-9.0, 17)	(-20, 3.7)	(-25, -2.3)	(-19, 5.5)	(-24, -1.5)	(-29, -7.9)
New South Wales	14%	-20%	-0.1%	-21%	-14%	-28%
	(-9.5, 45)	(-37, 1.4)	(-23, 30)	(-38, 2.0)	(-33, 11)	(-44, -8.1)
Victoria	-2.6%	6.9%	-29%	-6.5%	-26%	-13%
	(-24, 25)	(-18, 40)	(-45, -8.0)	(-29, 22)	(-43, -2.8)	(-34, 16)

Note: Q1: January – March; Q2: April – June; Q3: July – September; Q4: October – December. Deaths were assigned to a quarter based on the month of death; all other data in this report are based on reference year (see [methods](#) for details). Data for Q4 2021 are not presented following consultation with ABS on the completeness of these data. Estimates are subject to change with data revisions.

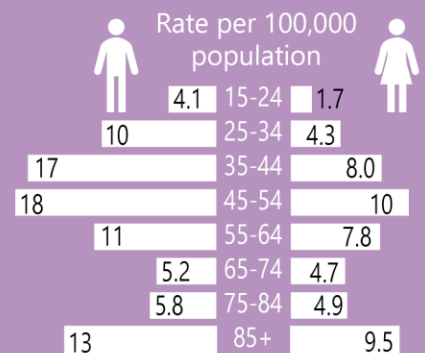
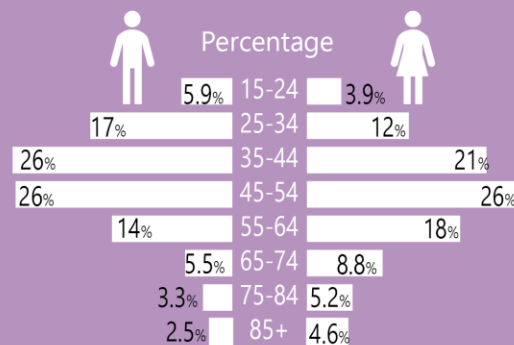
2

Sociodemographic Characteristics of Drug-Induced Deaths

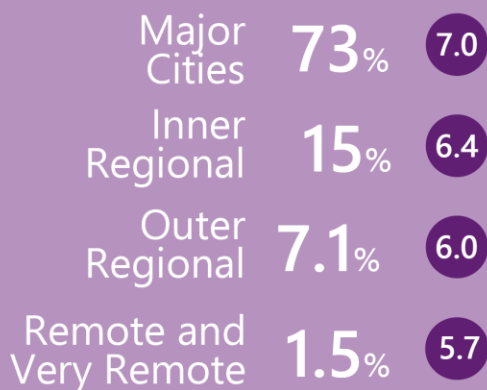
2021 Drug-induced DEATHS



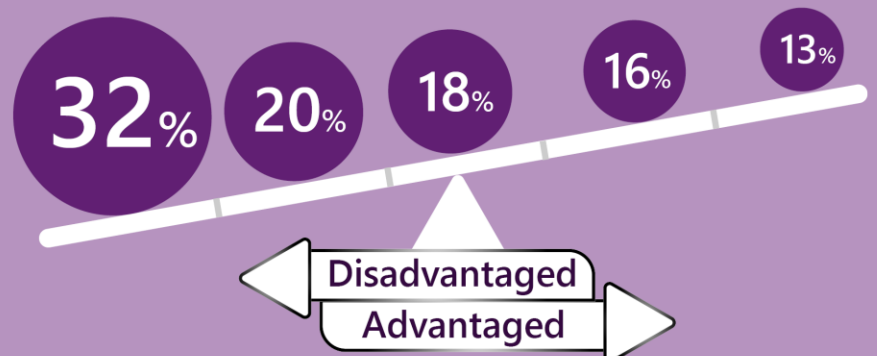
AGE

REMOTENESS
of usual residence

(Percentage and rate per 100,000 population)



SOCIO-ECONOMIC status of area



Sex

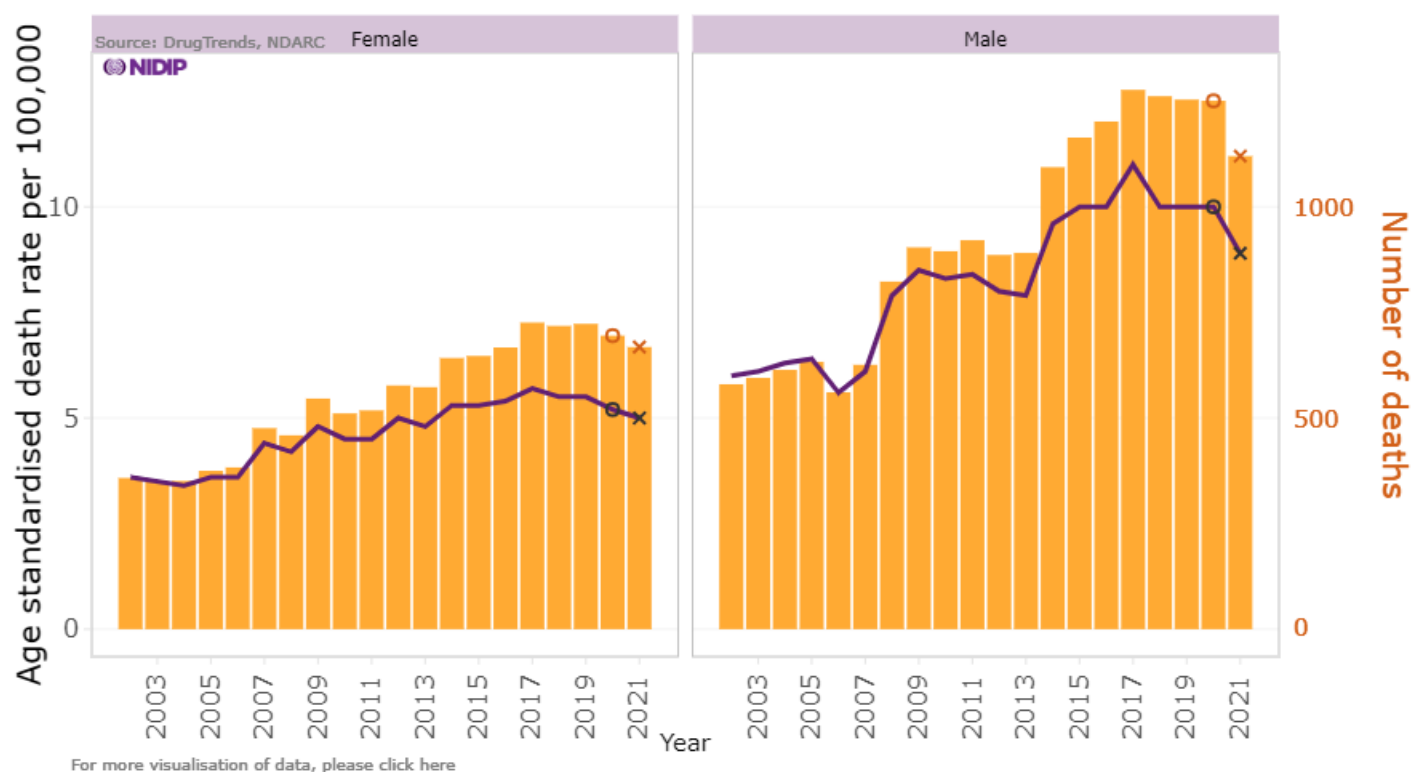


In 2021, drug-induced deaths were nearly twice as frequent among males compared with females (63% versus 37%), with 1,120 drug-induced deaths among males and 668 deaths among females. This equates to 8.9 deaths per 100,000 male Australians and 5.0 deaths per 100,000 female Australians. This profile has been consistent over the course of monitoring.

Trend since 2002

- From 2002 to 2019, the population rates of drug-induced deaths among both [males](#) and females increased on average by 3.8% and 2.9% per year respectively, peaking in 2017 at 11 and 5.7 deaths per 100,000 people ([Figure 2](#)).
- The preliminary revised 2021 estimate is lower than the revised 2020 in males (8.9 versus 10 deaths per 100,000 people, respectively). The rate for females in 2021 compared to 2020 was not statistically different (5.0 versus 5.2 deaths per 100,000 people, respectively) (Table A1).

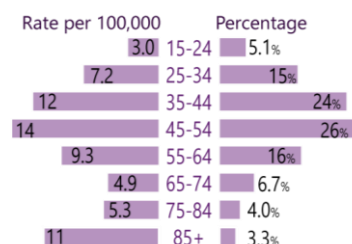
Figure 2. Number and age-standardised rate per 100,000 people of drug-induced deaths for the Australian population, by sex, 2002-2021.



Note: Deaths where conditions related to alcohol or tobacco comprised the underlying cause of death are not captured here.

Causes of death data for 2020 and 2021 are not final and thus are subject to further revision. The symbol 'o' indicates revised estimates and 'x' preliminary estimates.

Age



In 2021, the highest percentage of drug-induced deaths was among people aged **45-54** (26%, 460 deaths) and 35-44 (24%, 434 deaths) and the lowest percentage was among people aged 85 and over (3.3%, 59 deaths) and 75-84 (4.0%, 72 deaths). The highest population rate of drug-induced deaths was also among people aged 45-54 (14 deaths per 100,000 people) and 35-44 (12 deaths per 100,000 people), however this was closely followed by the 85 and over age group (11 deaths per 100,000 people).

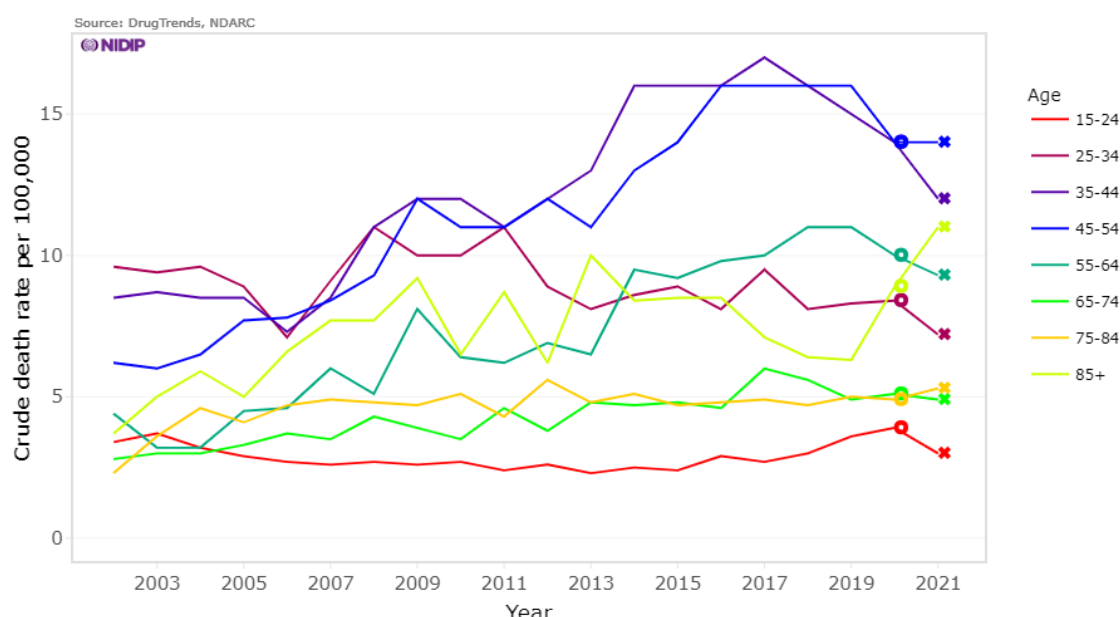
Trend since 2002

- From 2002 to 2019, the **age distribution** of deaths changed. In the early 2000s, young to middle aged adults (i.e., 25-34 age group, followed by 35-44 age group) comprised the greater percentage of deaths. The percentage in the 25-34 age group has declined over time while the percentage in the 45-54, 55-64 and 65-74 age groups increased.
- In terms of population rates, the rate of drug-induced deaths among those aged 25-34 did not show a particular trend and varied between 6.9 and 11 deaths per 100,000 people over the study period. In contrast, from 2002 to 2019 the rate of deaths increased significantly for people aged:
 - 35-44 (8.5 versus 15 deaths per 100,000 people),
 - 45-54 (6.2 versus 16 deaths per 100,000 people),
 - 55-64 (4.4 versus 11 deaths per 100,000 people),
 - 65-74 (2.8 versus 4.9 deaths per 100,000 people), and
 - 75-85 (2.4 versus 6.1 deaths per 100,000 people).

A large shift has been observed in the **85 and over** age group, from 3.7 deaths per 100,000 people in 2002 to a peak of 10 deaths per 100,000 people in 2013, then decreasing to 6.3 deaths per 100,000 people in 2019 (**Figure 3**).

- The preliminary revised 2021 estimate was similar to the revised 2020 estimate for all age groups except for the 15-24 and 35-44 age groups (lower in 2021), and the 85 and over age group (higher in 2021) (Table A2).
- Indeed, the 85 and over age group was the only age group where both 2020 and 2021 estimated rates were higher than the 2019 final rate and are likely to further increase with data revisions.

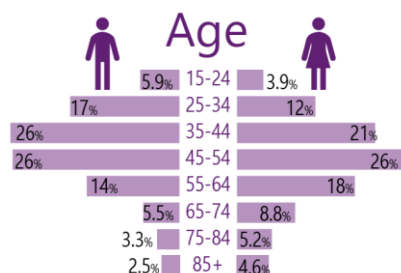
Figure 3. Crude rate per 100,000 people of drug-induced deaths for the Australian population, by age group, 2002-2021.



Note: Deaths where conditions related to alcohol or tobacco comprised the underlying cause of death are not captured here.

Causes of death data for 2020 and 2021 are not final and thus are subject to further revision. The symbol 'o' indicates revised estimates and 'x' preliminary estimates. The rates for the 0-14 years age group are not presented due to sensitivity of the data.

Sex and Age

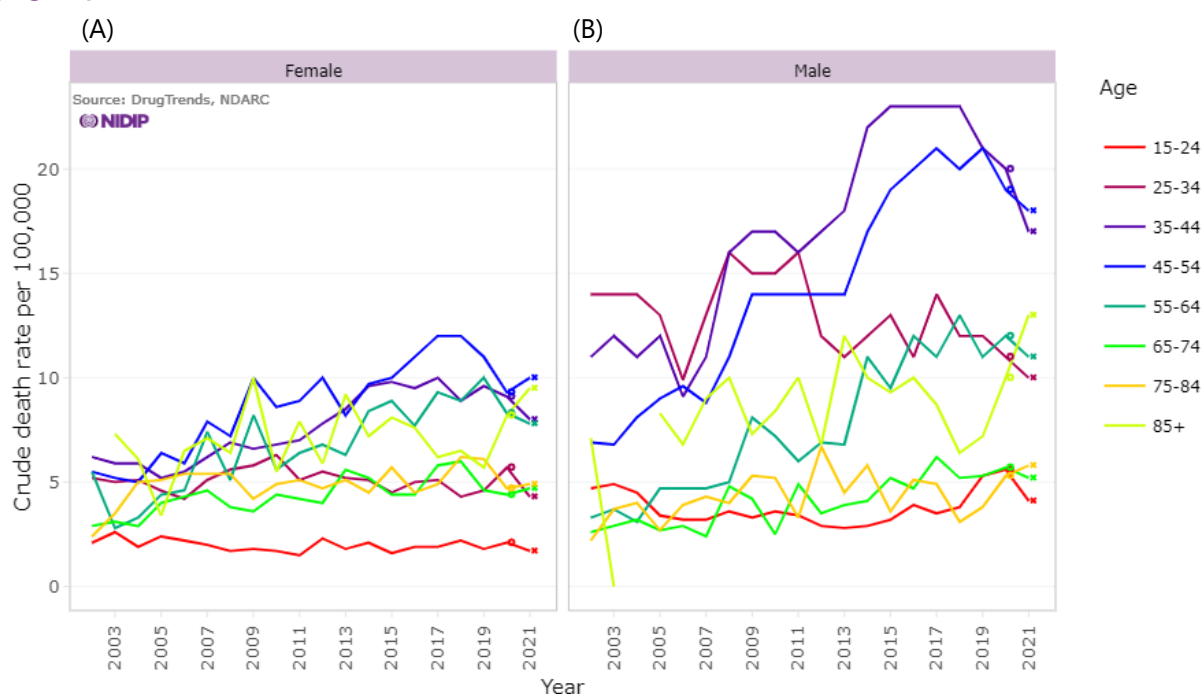


In 2021, the highest percentage and population rate of drug-induced deaths among males was in the 45-54 (26%, 288 deaths, 18 deaths per 100,000 people) and 35-44 (26%, 292 deaths, 17 deaths per 100,000 people) age groups. The same age groups were dominant for drug-induced deaths among females (45-54 age group: 26%, 172 deaths, 10 deaths per 100,000 people; 35-44 age group: 21%, 142 deaths, 8.0 deaths per 100,000 people), however the population rate was also high in the 85 and over age group (9.5 deaths per 100,000 people, 4.6%, 31 deaths).

Trend since 2002

- Over the years, the age profile of drug-induced deaths has changed for both [males and females](#). Specifically, there has been an increase in the percentage of deaths occurring in the following older age groups from 2002 to 2021:
 - 45-54 age group: males from 16% to 26%; females from 20% to 26%,
 - 55-64 age group: males from 5.5% to 14%; females from 15% to 18%, and
 - 65-74 age group: males from 2.9% to 5.5%; females from 5.6% to 8.8%.
- In contrast, a decrease was observed in the following younger age groups:
 - 15-24 age group: males from 11% to 5.9%; females from 7.5% to 3.9%, and
 - 25-34 age group: males from 35% to 17%; females from 21% to 12%.
- From 2002 to 2019, the rates of drug-induced deaths among the 35-44, 45-54 and 55-64 age groups increased significantly for both sexes ([Figure 4](#)). The rates for other age groups did not change significantly.
- There were no statistically significant differences between 2020 and 2021 rates in any of the age groups for either males or females, except for the 35-44 male age group, for which the 2021 rate (17 deaths per 100,000 people) was statistically lower than for 2020 (20 deaths per 100,000 people) (Table A3).

Figure 4. Crude rate per 100,000 people of drug-induced deaths for the Australian population of females (A) and males (B), by age group, 2002-2021.



Note: Deaths where conditions related to alcohol or tobacco comprised the underlying cause of death are not captured here.

Causes of death data for 2020 and 2021 are not final and thus are subject to further revision. The symbol 'o' indicates revised estimates and 'x' preliminary estimates. The rates for the 0-14 years age group are not presented due to sensitivity of the data.

Remoteness Area of Usual Residence

Remoteness area of usual residence (hereafter 'remoteness area', comprising major city, inner regional, outer regional, remote and very remote areas) has been identified for decedents since 2009. Remoteness area was identified in 99% of drug-induced deaths in 2021. Where remoteness area is disaggregated by another variable (e.g., sex), data are presented for major city areas versus regional and remote areas combined (hereafter 'regional and remote areas').

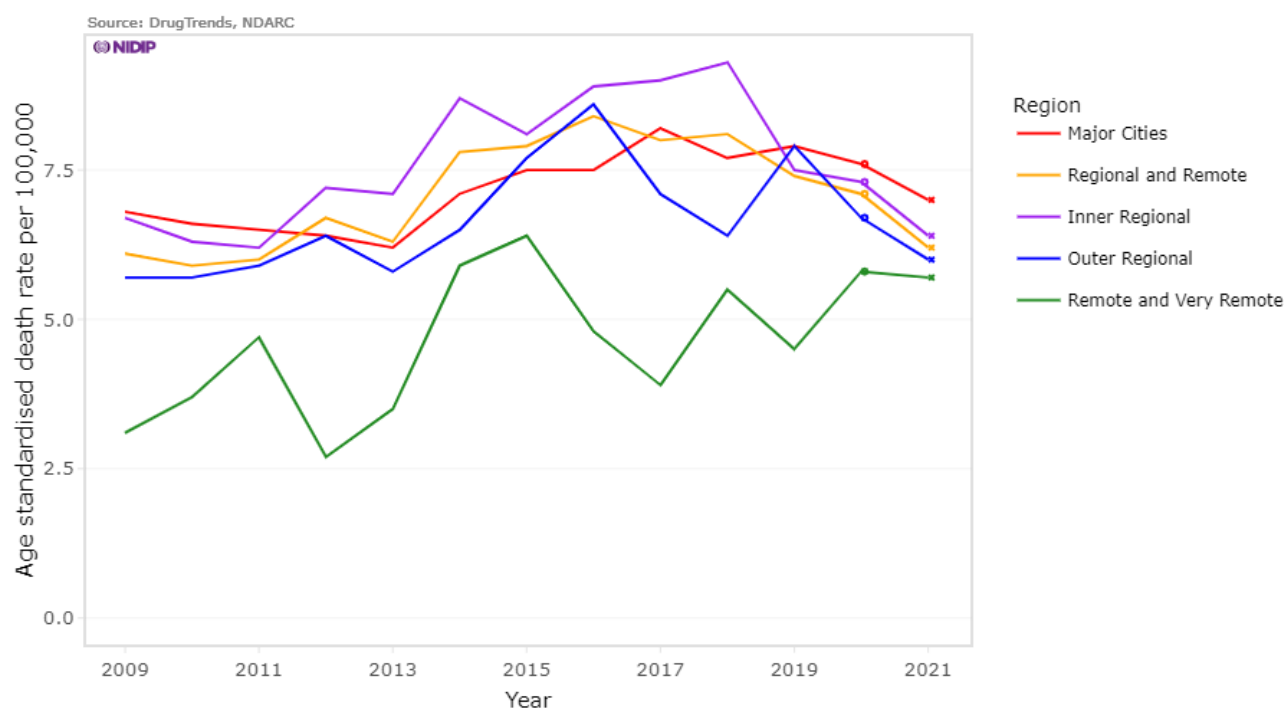
In 2021, the proportion of drug-induced deaths reported among people residing in the following areas were:

- 73% in **major city** (1,314 deaths, 7.0 deaths per 100,000 people), followed by
- 15% in inner regional (296 deaths, 6.4 deaths per 100,000 people),
- 7.1% in outer regional (127 deaths, 6.0 deaths per 100,000 people), and
- 1.5% in remote and very remote (27 deaths, 5.7 deaths per 100,000 people) areas.

Trend since 2009

- The above profile of deaths by remoteness area has been relatively consistent over time, with a greater percentage of deaths recorded as occurring among people from major city areas (varying between 70% to 74%).
- From 2009 to 2019, there was an overall increase in the rate of drug-induced deaths in major cities, inner regional and outer regional areas, with a peak in observed rates between 2016 and 2018 ([Figure 5](#)).
- Statistical comparison showed that only major cities had a statistical lower rate of drug-induced deaths in 2021 relative to 2020 (7.0 versus 7.6 deaths per 100,000 people, respectively) (Table A4).

Figure 5. Age-standardised rate per 100,000 people of drug-induced deaths for the Australian population, by remoteness area, 2009-2020.



Note: Deaths where conditions related to alcohol or tobacco comprised the underlying cause of death are not captured here.

Causes of death data for 2020 and 2021 are not final and thus are subject to further revision. The symbol 'o' indicates revised estimates and 'x' preliminary estimates.

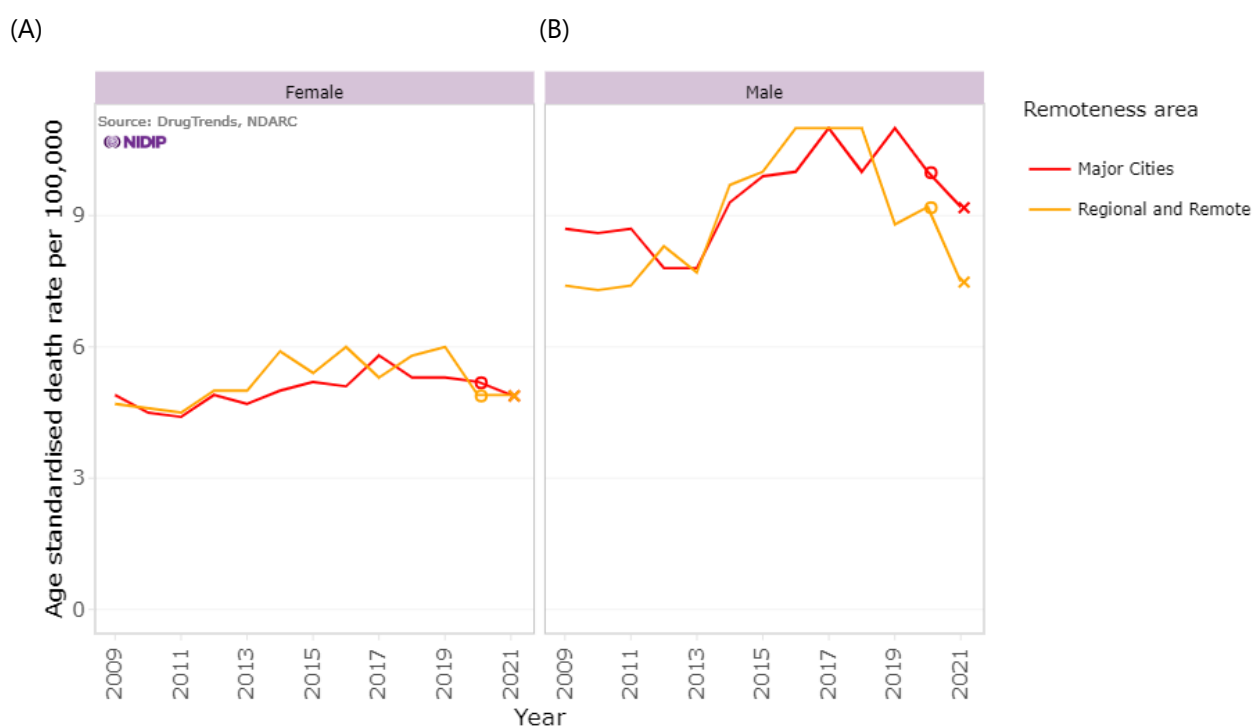
Remoteness Area and Sex

In 2021, two-thirds (64%, 839 deaths, 9.2 deaths per 100,000 people) of drug-induced deaths recorded among people from major cities occurred among [males](#). This was lower in inner regional (58%, 171 deaths, 7.7 death per 100,000 people) and outer regional areas (57%, 73 deaths, 7.0 deaths per 100,000 people), but higher in remote and very remote areas (70%, 19 deaths, 7.5 deaths per 100,000 people).

Trend since 2009

- The proportion of deaths by sex within each remoteness area has been relatively consistent over time.
- The rate of drug-induced deaths for males in major cities and regional and remote areas changed over time in broadly similar patterns, with an overall increase observed which peaked around 2017 (11 deaths per 100,000 people, each) (Figure 6B).
- Rates of drug-induced death among females in major cities and regional and remote areas are similar and show a similar trend over time (Figure 6A).
- In 2021, rates recorded for both males and females in major cities and regional and remote areas fell to the levels seen in 2009; however, 2021 estimates are preliminary and will increase with revision.
- The estimated 2021 rate was lower than the revised 2020 in males from major cities (8.9 versus 10 deaths per 100,000 people, respectively) and from regional and remote areas (7.5 versus 9.2 deaths per 100,000 people) (Table A5)
- The rate for females in 2021 compared to 2020 was not statistically different.

Figure 6. Age-standardised rate per 100,000 people of drug-induced deaths for (A) females and (B) males, by remoteness area, Australia 2009-2021.



Note: Deaths where conditions related to alcohol or tobacco comprised the underlying cause of death are not captured here.

Causes of death data for 2020 and 2021 are not final and thus are subject to further revision. The symbol 'o' indicates revised estimates and 'x' preliminary estimates.

Numbers in remote and very remote area were too small to be shown separately hence the regional, remote and very remote areas were collapsed into one category.

Remoteness Area and Age

In 2021, the proportion of drug-induced deaths among residents of major city areas was highest among those aged [45-54](#) and lowest among those aged 85 and older. In regional and remote areas, the highest proportion of deaths also occurred in those aged 45-54, but the age group with lowest percentage was 15-24 (Table 4).

Table 4. Proportion and number of drug-induced deaths by age group in major cities versus regional and remote areas, Australian, 2021

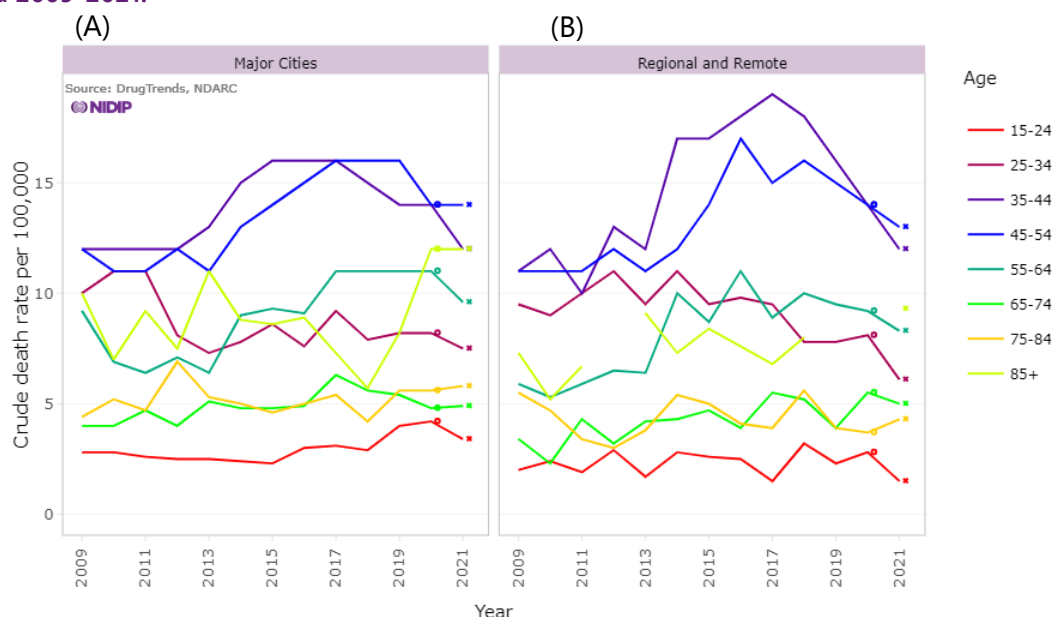
Major Cites			Regional and Remote		
1	45-54 age group	25%, 331 deaths	45-54 age group	27%, 122 deaths	
2	35-44 age group	25%, 323 deaths	35-44 age group	22%, 100 deaths	
3	25-34 age group	16%, 212 deaths	55-64 age group	18%, 81 deaths	
4	55-64 age group	15%, 195 deaths	25-34 age group	12%, 54 deaths	
5	15-24 age group	6.0%, 79 deaths	65-74 age group	9.6%, 43 deaths	
6	65-74 age group	5.9%, 77 deaths	75-84 age group	4.4%, 20 deaths	
7	75-84 age group	4.0%, 52 deaths	85+ age group	3.5%, 15 deaths	
8	85+ age group	3.3%, 44 deaths	15-24 age group	2.7%, 12 deaths	

When adjusted for population size, the highest rate in major cities was recorded in the 45-54 age group, followed by 35-44 and [85 and over](#) (14, 12 and 12 deaths per 100,000 people, respectively). In regional and remote areas, the same age groups also had the highest rates (13, 12 and 9.3 deaths per 100,000 people).

Trend since 2009

- The proportion of deaths by age within each remoteness area has been relatively consistent over time.
- The rate of drug-induced deaths has been consistently highest in the 35-44 and 45-54 age groups in both [major cities](#) and [regional and remote areas](#), with a noticeable increase in the rates between 2009 and 2017 ([Figure 7](#)).
- Comparison of the 2020 and 2021 rates did not identify any statistically significant difference (Table A6), and for people 85 and over, the rate of drug-induced deaths in major city areas remained on all-time high level.

Figure 7. Rate per 100,000 people of drug-induced deaths in (A) major city areas and (B) regional and remote areas, by age, Australia 2009-2021.



Note: Deaths where conditions related to alcohol or tobacco comprised the underlying cause of death are not captured here.

Causes of death data for 2020 and 2021 are not final and thus are subject to further revision. The symbol 'o' indicates revised estimates and 'x' preliminary estimates. The rates for the 0-14 years age group are not presented due to sensitivity of the data. Numbers in remote and very remote area were too small to be shown separately hence the regional, remote and very remote areas were collapsed into one category.

Socio-Economic Advantage and Disadvantage

[Socio-Economic Indexes for Areas \(SEIFA\)](#) is a product developed by the ABS that ranks areas in Australia according to relative socio-economic advantage and disadvantage. The SEIFA index used in this report is based on the Index of Relative Socio-economic Advantage and Disadvantage (IRSAD) which summarises information about the economic and social conditions of people and households within an area, including both relative advantage and disadvantage measures. Data are presented as SEIFA quintile ranging from 1 to 5 where:

- A **lower** score indicates relatively greater disadvantage and a lack of advantage in general. For example, an area could have a low score if there are:
 - many households with low incomes, or many people in unskilled occupations, AND
 - few households with high incomes, or few people in skilled occupations.
- A **higher** score indicates a relative lack of disadvantage and greater advantage in general. For example, an area may have a high score if there are:
 - many households with high incomes, or many people in skilled occupations, AND
 - few households with low incomes, or few people in unskilled occupations.

Data on SEIFA index in the Cause of Deaths Unit Record File has only recently been made available hence we do not report on trends but only present a profile for deaths in 2021.

Profile



In 2021, 32% (569 deaths) of drug-induced deaths occurred in residents of the most disadvantaged areas. This amounted to 33% (375 deaths) for males and 29% (194 deaths) for females, respectively (Table 5).



While the greatest proportion of decedents aged 25 to 84 lived in the most disadvantaged areas, the highest proportion (33%, 30 deaths) of those aged 15 to 24 resided in fairly advantaged areas (quintile 4).



Both unintentional and intentional drug overdose deaths were most frequent among people from the most disadvantaged areas (33% and 26%, 392 and 122 deaths, respectively).



Those living in the most disadvantaged areas accounted for the highest percentage of overdose deaths involving all drug types, except for cocaine where 29% of deaths (24 deaths) occurred among people living in the most advantaged areas.



Table 5. Proportion of deaths by index of relative socio-economic advantage and disadvantage quintiles by sex, age group, intent, drug involved in overdose and jurisdiction, Australia, 2021

	Disadvantaged ← SEIFA → Advantage					Total with SEIFA
	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5	
	%	%	%	%	%	
Total	32	20	18	16	13	99
Sex						0
Male	33	18	18	15	13	98
Female	29	23	19	16	12	99
Age						
15-24	18	17	14	33	16	99
25-34	28	22	17	15	18	99
35-44	30	21	19	14	14	98
45-54	37	17	18	15	12	98
55-64	38	19	19	12	11	99
65-74	33	23	18	17	11	100
75-84	33	18	11	29	8.3	100
85+	19	29	25	14	14	100
Overdose intent						
Unintentional	33	19	18	15	12	98
Intentional	26	20	19	19	16	100
Overdose by Drug						
Amphetamine-type stimulants	35	20	17	13	11	97
Antidepressants	31	19	17	18	15	99
Antiepileptic, sedative-hypnotic & antiparkinsonism drugs	29	20	19	18	13	99
Antipsychotics & neuroleptics	33	20	16	19	12	99
Cannabinoids	49	13	18	11	9	99
Cocaine	17	16	18	20	29	100
Nonopioid analgesics	28	23	14	19	16	100
Opioids	32	20	18	16	11	98

A lower score indicates relatively greater disadvantage and a lack of advantage in general. A higher score indicates a relative lack of disadvantage and greater advantage in general.

3

Underlying Cause and Intent of Drug-Induced Deaths

2021 : Drug-induced
DEATHS

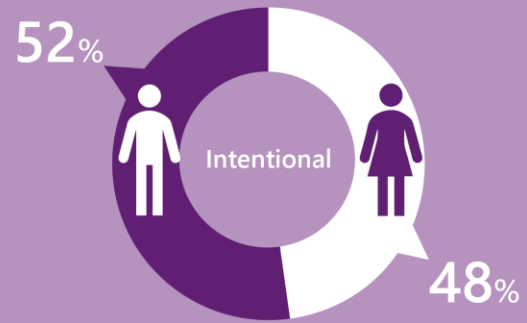
1,732
OVERDOSE DEATHS

97% of Drug-induced
DEATHS

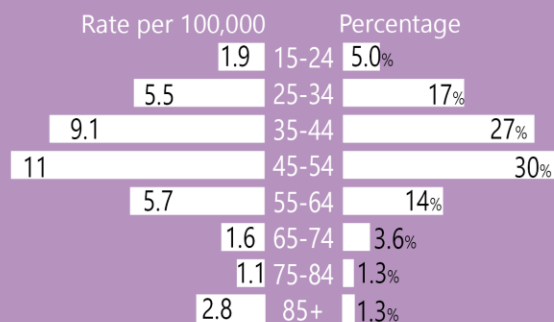
68%
UNINTENTIONAL

27%
INTENTIONAL

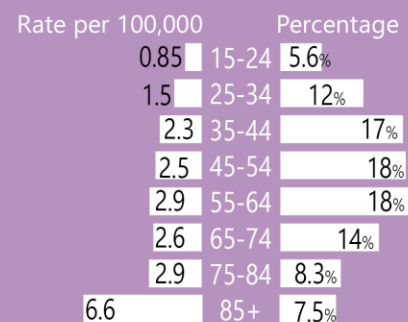
4.8%
UNDETERMINED



AGE



AGE



Underlying Cause of Death

97% of all drug-induced deaths in 2021 were due to **drug overdose** (sometimes known as 'poisoning') (1,732 deaths). This has been consistent over the course of monitoring (97-99% of all drug-induced deaths each year). The remaining deaths each year comprise those attributed to: i) mental and behavioural disorders due to psychoactive substance use and ii) drug-induced diseases (see [methods](#) for more information).

Intent of Drug Overdose Deaths

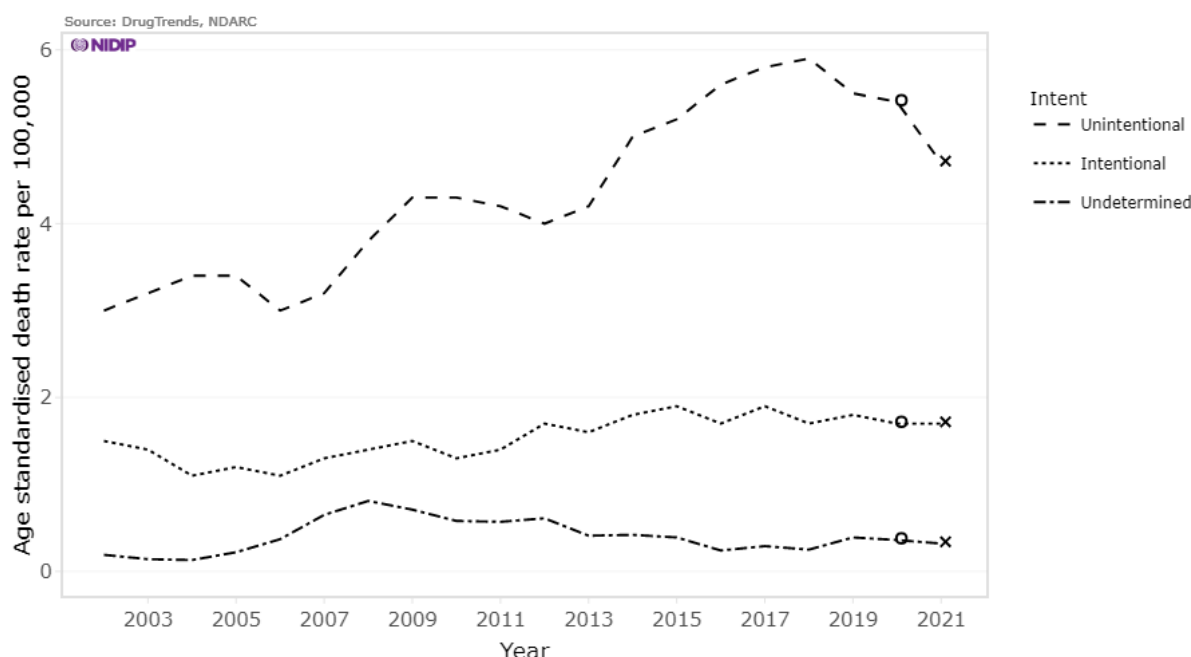
For drug-induced deaths, only those due to overdose are assigned an intent. Two-thirds (68%) of drug overdose deaths were coded as unintentional and 27% as intentional ([1,180 and 468 deaths](#), respectively). Drug overdose deaths of undetermined intent comprised the remaining 4.8% (83 deaths).

68% UNINTENTIONAL
27% INTENTIONAL

Trend since 2002

- Over the course of monitoring, most drug overdose deaths have been classified as unintentional. This has varied between 61% and 73%, while intentional deaths accounted for 22% to 31% over the years.
- From 2002 to 2019, the rate of unintentional drug overdose deaths nearly doubled (3.0 versus 5.5 deaths per 100,000 people, respectively), increasing on average by 4.1% per year and peaking at 5.9 deaths per 100,000 people in 2018 ([Figure 8](#)).
- In contrast, the rate of intentional drug overdose deaths remained low and relatively stable (1.5 in 2002 versus 1.8 deaths per 100,000 people in 2019).
- The preliminary revised rate of unintentional drug overdose in 2021 (4.7 deaths per 100,000 people) was lower compared to 2020 (5.4 deaths per 100,000 people) while the rate of intentional drug overdose remained similar.

Figure 8. Age-standardised rate per 100,000 people of drug overdose deaths for the Australian population, by intent, 2002-2021.



Note: Deaths where conditions related to alcohol or tobacco comprised the underlying cause of death are not captured here. Causes of death data for 2020 and 2021 are not final and thus are subject to further revision. The symbol 'o' indicates revised estimates and 'x' preliminary estimates.

Sex

In 2021, 68% (797 deaths) of unintentional drug overdose deaths were reported among males. In contrast, half (52%, 244 deaths) of intentional drug overdose deaths occurred among males. This distribution has been relatively consistent over time.

Population rates for unintentional overdose deaths were 6.5 in [males](#) and 3.0 deaths per 100,000 people in females and for intentional deaths the rates were 1.8 in males and 1.6 deaths per 100,000 people in females.

Trend since 2002

- From 2002 to 2019, the rate of unintentional drug overdose deaths among males doubled (4.1 versus 8.2 deaths per 100,000 people) ([Figure 9](#)). For females, the rate has also steadily increased, from 2.0 in 2002 to 3.3 deaths per 100,000 people in 2019, however was on average around two times lower than for males.
- The rates of intentional drug overdose deaths were similar among males and females, ranging between 0.97 and 2.1 deaths per 100,000 people for males and 1.0 to 1.9 deaths per 100,000 people for females between 2002 and 2019.
- The preliminary revised rate of unintentional drug overdose in 2021 in males was lower than the rate observed in 2020 (6.5 versus 7.6 deaths per 100,000 people, respectively); the rate for females was similar (3.0 versus 3.2 deaths per 100,000 people, respectively).
- The 2021 estimated rates of intentional drug overdose were similar to the 2020 rates for both males and females (Table A7).

Figure 9. Age-standardised rate per 100,000 people of drug overdose deaths for (A) females and (B) males, by intent, Australia 2002-2021.



Note: Deaths where conditions related to alcohol or tobacco comprised the underlying cause of death are not captured here.

Causes of death data for 2020 and 2021 are not final and thus are subject to further revision. The symbol 'o' indicates revised estimates and 'x' preliminary estimates.

Age-standardised rates were not calculated if the number of deaths was less than or equal to 10 (please refer to our methods document for details). Suppressed data are visible as gaps in the data series.

Age

In 2021, the highest proportion of [unintentional](#) drug overdose deaths were for people aged:

- 45-54 (30%, 351 deaths), and
- 35-44 (27%, 321 deaths).

The most common age groups accounting for [intentional](#) drug overdose deaths were the following:

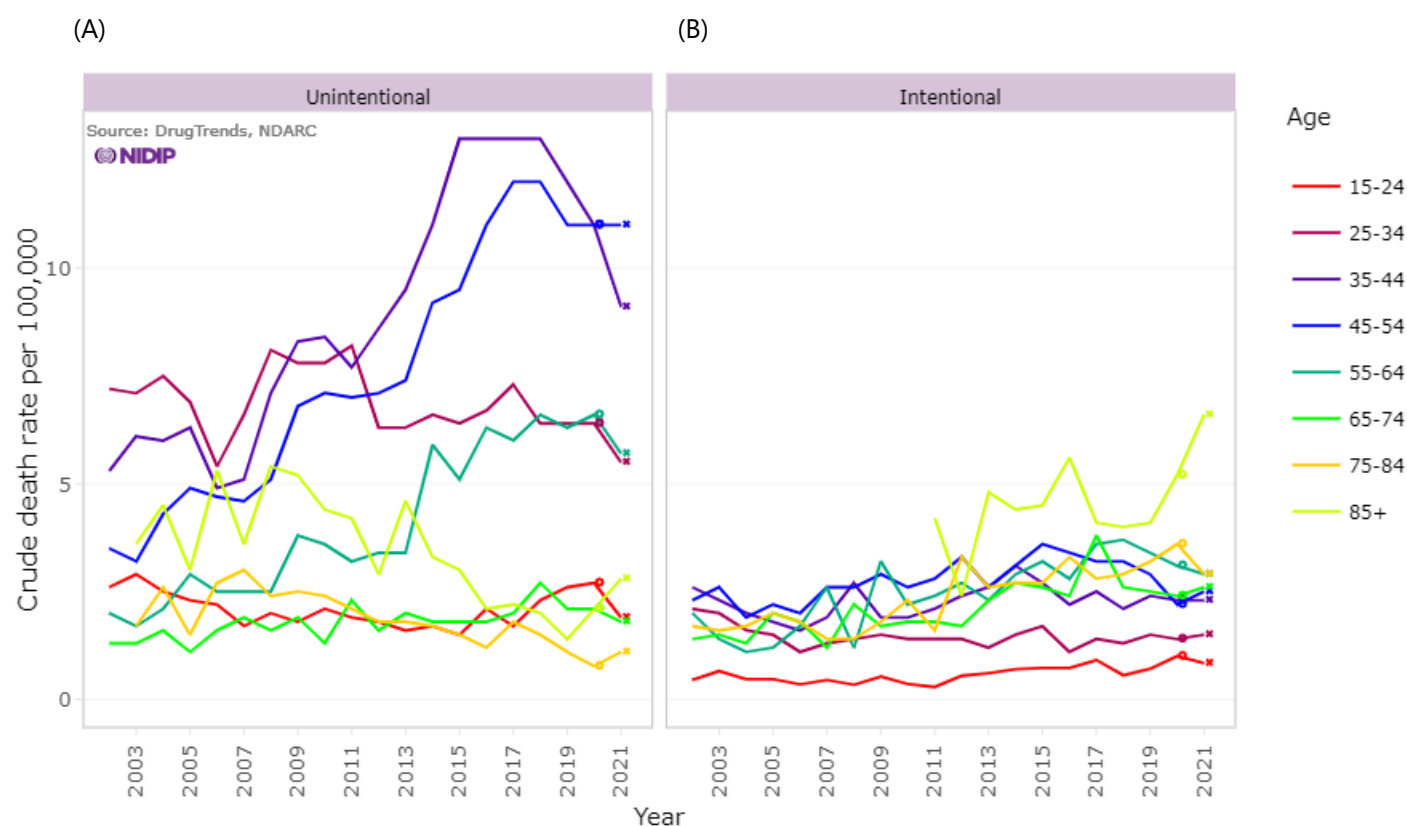
- 55-64 (18%, 86 deaths),
- 45-54 (18%, 82 deaths), and
- 35-44 (17%, 80 deaths) age groups.

When adjusted for population size, the highest rate of [unintentional](#) drug overdose deaths was also recorded for the 45-54 and 35-44 age groups (11 and 9.1 deaths per 100,000 people, respectively), however the rate of [intentional](#) overdose deaths was highest for the 85 and over age group (6.6 deaths per 100,000 people).

Trend since 2002

- Younger age groups have historically accounted for a greater proportion of unintentional drug overdose deaths. This has, however, shifted over the years to a middle-aged (e.g., 35-54) demographic. Intentional drug overdose deaths have generally been more common among middle and older age groups (e.g., 35-74).
- From 2002 to 2019, the rates of unintentional overdose deaths have:
 - stayed low and stable for the 15-24 age group, and
 - declined and then stayed low for the two oldest age groups (75-84 and 85 and over), and
 - increased for the 35-44, 45-54 and 55-64, 65-74 age group age groups. The increase is particularly striking for the 45-54 and 55-64 age groups, which increased nearly 3-fold from 3.5 in 2002 to 11 deaths per 100,000 people in 2019 and from 2.0 in 2002 to 6.4 deaths per 100,000 people in 2019, respectively.
- From 2002 to 2019, the rates of intentional overdose deaths have:
 - stayed low for those aged 15-24 and 25-34, and
 - fluctuated over time for older age groups but, overall, suggest an increase for the 55-64, 65-74, 75-84 and 85 and over age groups ([Figure 10](#)).
- Comparison of the 2020 and 2021 estimates suggests:
 - a lower rate of unintentional overdose deaths in 2021 compared to 2020 in the 15-24 and 35-44 age groups (Table A8),
 - non-significant differences between the 2021 and 2020 rate of intentional overdose deaths in all age groups

Figure 10. Crude rate per 100,000 people of drug-induced deaths coded as (A) unintentional and (B) intentional, by age, Australia, 2002-2021



Note: Deaths where conditions related to alcohol or tobacco comprised the underlying cause of death are not captured here.

Causes of death data for 2020 and 2021 are not final and thus are subject to further revision. The symbol 'o' indicates revised estimates and 'x' preliminary estimates. The rates for the 0-14 years age group are not presented due to sensitivity of the data.

Remoteness Area of Usual Residence

In 2021, major cities were recorded as the place of residence of decedents in three-in-four unintentional and intentional drug overdose deaths (75% and 71%, respectively).

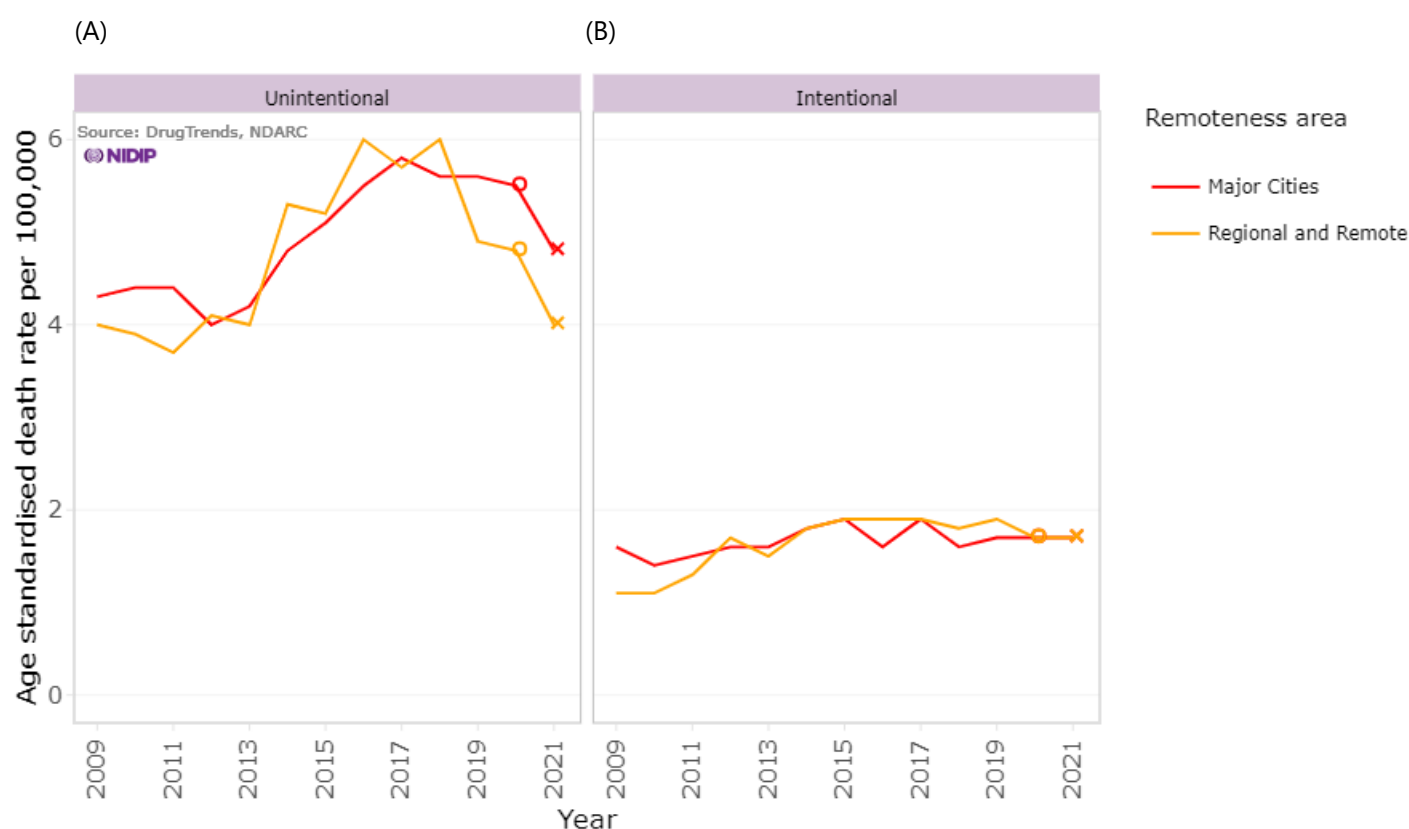
The rate of unintentional overdose deaths was higher in major city areas than the rate in regional and remote areas in 2021 (4.8 versus 4.0 deaths per 100,000 people), whereas the rate of intentional deaths was similar in both area types (1.7 deaths per 100,000 people, each).

	Unintentional		Intentional	
	Percentage	Number	Percentage	Number
Major cities	75%	884 deaths	71%	331 deaths
Inner regional	15%	180 deaths	21%	96 deaths
Outer regional	6.6%	78 deaths	7.1%	33 deaths
Remote and very remote	1.4%	17 deaths	1.5%	7 deaths

Trend since 2009

- From 2009 to 2019, both area types (major cities and regional and remote areas) showed an increase in rate of unintentional drug overdose deaths (4.3 and 4.0 deaths per 100,000 people in 2009 versus 5.6 and 6.0 deaths per 100,000 people in 2018, respectively), followed by a decline in regional and remote areas (Figure 11).
- The rate of intentional drug overdose deaths also increased in regional and remote areas (1.1 in 2009 to 1.8 deaths per 100,000 people in 2019) but stayed on a similar level in major city areas (1.6 in 2009 and 1.7 deaths per 100,000 people in 2019).
- The 2021 estimated rates of unintentional overdose deaths were lower than in 2020 in major cities and regional and remote areas (Table A9). The 2020 and 2021 estimated rates of intentional overdose deaths were similar.

Figure 11. Age-standardised rate per 100,000 people of drug-induced deaths coded as (A) unintentional and (B) intentional, by the remoteness area of usual residence, Australia, 2009-2021.



Note: Deaths where conditions related to alcohol or tobacco comprised the underlying cause of death are not captured here.

Causes of death data for 2020 and 2021 are not final and thus are subject to further revision. The symbol 'o' indicates revised estimates and 'x' preliminary estimates.

4

Psychosocial Risk Factors and Place of Occurrence in Drug-Induced Deaths

2017-2021

65% of risk factors were related to
**SOCIOECONOMIC AND
PSYCHOSOCIAL
CIRCUMSTANCES**

26% of risk factors were related to
**CONDITIONS INFLUENCING
HEALTH STATUS
(E.G., FAMILY AND
PERSONAL HISTORY)**



2021 : Drug-induced
DEATHS

12%



of those
who died from
drug-induced death
had
**PERSONAL HISTORY
OF SELF HARM**

19%



of those
aged **75-84 and
85 years and over** had
a risk factor related to
**LIMITATION OF ACTIVITIES
DUE TO DISABILITY**

76%



of all
drug-overdose death
occurred
at
HOME

Psychosocial Risk Factors

While not routinely recorded on death certificates in Australia, psychosocial factors like employment, housing, social and family support may be important determinants of health outcomes and mortality patterns ([CSDH 2008, Psychosocial risk factors for suicide](#)). As a result, psychosocial risk factors identified in coronial, police and pathology reports on coroner-certified drug-induced deaths were coded and added to all COD URF dataset from 2017 onwards by the ABS. It is important to exercise caution while interpreting these data (see [ABS notes](#) and our [methods document](#) for further discussion of caveats to these data). In particular, it should be noted that risk factors could only be identified based on information available in the aforementioned reports and that drug-induced deaths are likely to involve a variety of risk factors for mortality (often, no single risk factor will ultimately cause death).

Common Psychosocial Risk Factors



Between 2017 and 2021, two-in-five (40%, 5,813 deaths) drug-induced deaths had at least one psychosocial risk factor coded, of which one risk factor was identified in 58% of cases, two risk factors in 25% and three or more risk factors in the remaining 17%. Over half (65%) of the identified risk factors were related to socio-economic and psychosocial circumstances (in particular, problems related to primary support group) and 26% were related to conditions influencing health status (e.g., family and personal history).

In 2021, the most frequently identified [psychosocial risk factor](#) in all drug-induced deaths was [personal history of self-harm](#) (12%, 206 deaths) (Table 6). Other frequently identified psychosocial factors were: disruption of family by separation and divorce (3.9%, 70 deaths), disappearance and death of family member (3.6%, 65 deaths), limitation of activities due to disability (3.6%, 65 deaths), problems in relationship with spouse or partner (3.3%, 59 deaths), problems related to other legal circumstances (2.5%, 44 deaths), and problems related to release from prison (2.1%, 37 deaths). These findings are relatively consistent with those observed from 2017 through to 2020 (available [online](#)).

Table 6. Most common psychosocial risk factors in drug-induced deaths, Australia, 2021

Rank	Risk factors	Percentage of all drug-induced deaths
1	Personal history of self-harm	12%
2	Disruption of family by separation and divorce	3.9%
3	Limitation of activities due to disability	3.6%
4	Disappearance and death of family member	3.6%
5	Problems in relationship with spouse or partner	3.3%
6	Problems related to other legal circumstances	2.5%
7	Problems related to release from prison	2.1%
8	Other specified problems related to primary support group	1.8%
9	Absence of family member	1.7%
10	Unemployment, unspecified	1.7%

● Risk factor related to socioeconomic and psychosocial circumstances, conditions influencing health status, ● Other risk factors.

● Risk factor related to family and personal history and certain

Sex

In 2021, psychosocial risk factors were more commonly identified in drug-induced deaths occurring among females than males (40%, 265 deaths versus 34%, 377 deaths).

Although [personal history of self-harm](#) was more commonly identified among females than among males, it was the leading risk factor for both sexes (17% versus 8.3%, 113 and 93 deaths, respectively) (Table 4).

Limitation of activities due to disability was the second most common risk factor identified for female decedents (4.9%, 33 deaths), closely followed by disappearance and death of family member (4.8%, 32 deaths). In contrast, the second most common risk factor for male decedents was disruption of family by separation and divorce (4.4%, 49 deaths), followed by problems related to release from prison (3.0%, 34 deaths).

This pattern of risk factors by sex has been consistent historically since monitoring of these characteristics began in 2017 (available [online](#)).

Table 7. Ten most common psychosocial risk factors in drug-induced deaths by sex, Australia, 2021

 Male	Rank	Female 
At least one psychosocial risk factor	34%	40%
Personal history of self-harm	8.3% 	17% Personal history of self-harm
Disruption of family by separation and divorce	4.4%  	5.0% Limitation of activities due to disability
Problems related to release from prison	3.2% 	4.9% Disappearance and death of family member
Disappearance and death of family member	3.1% 	4.3% Problems in relationship with spouse or partner
Limitation of activities due to disability	3.0%  	3.1% Disruption of family by separation and divorce
Problems related to other legal circumstances	2.7% 	2.8% Other specified problems related to primary support group
Problems in relationship with spouse or partner	2.7% 	2.2% Unemployment, unspecified
Homelessness	1.7% 	2.0% Absence of family member
Absence of family member	1.5% 	2.0% Problems related to other legal circumstances
Unemployment, unspecified	1.5%  	1.7% Personal history of noncompliance with medical treatment and regimen

*Percentages were calculated of total number of male and female drug-induced deaths

 Risk factor related to socioeconomic and psychosocial circumstances,  Risk factor related to family and personal history and certain conditions influencing health status,  Other risk factors.

Age

In 2021, the percentage of drug-induced deaths for which at least one psychosocial risk factor was identified was higher in the older age groups, specifically the 65-74 (44%) and 85 and over (41%) age groups (Table 8).

Personal history of self-harm was the most common risk factor identified in all age groups except the 75-84 and 85 and over age groups, where limitation of activities due to disability was identified as the most frequent psychoactive risk factor (19%, each) (Table 8).

Table 8. Five most common psychosocial risk factors in drug-induced deaths by age, Australia, 2021

Risk Factor	15-24		25-34		35-44		45-54		55-64		65-74		75-84		85+	
	Rank	%	Rank	%	Rank	%	Rank	%	Rank	%	Rank	%	Rank	%	Rank	%
At least one		36%		36%		36%		34%		34%		43%		38%		41%
Personal history of self-harm	1	16%	1	16%	1	11%	1	9.3%	1	11%	1	16%			5	3.4%
Prophylactic measure, unspecified	2	5.4%														
Disappearance and death of family member	3	4.3%					3	4.1%	3	3.9%	3	5.8%	2	11%	2	12%
Disruption of family by separation and divorce	4	3.3%	2	5.6%	4	4.1%	2	4.6%	4	3.2%						
Problems in relationship with parents and in-laws	5	3.3%	3	4.1%												
Conviction in civil and criminal proceedings without imprisonment			4	3.4%												
Problems related to other legal circumstances			5	3.4%	5	3.9%							5	2.8%		
Problems related to release from prison					2	4.8%										
Problems in relationship with spouse or partner					3	4.8%	4	3.5%			4	5.8%				
Unemployment, unspecified							5	3.0%								
Limitation of activities due to disability									2	5.2%	2	9.2%	1	19%	1	19%
Absence of family member									5	2.5%	5	3.3%				
Other specified problems related to primary support group													3	4.2%	4	5.1%
Social exclusion and rejection													4	4.2%		
Other problems related to care-provider dependency															3	5.1%

● Risk factor related to socioeconomic and psychosocial circumstances,
 ● Risk factor related to family and personal history and certain conditions influencing health status,
 ● Other risk factors.

Intent of Drug Overdose Deaths

At least one psychosocial risk factor was coded in 37% (641 deaths) of drug overdose deaths in 2021, slightly lower than the average for 2017-2021 (41%). Psychosocial risk factors were more commonly identified in [intentional](#) than unintentional drug overdose deaths in all years (71%, 331 deaths versus 24%, 279 deaths in 2021).

In 2021, the most common risk factor in both intentional and unintentional overdose deaths was personal history of self-harm, however it accounted for a much higher proportion of intentional deaths (29% and 5.0% for intentional and unintentional deaths, respectively). There are some other important differences between the risk factors identified in those two groups and their distribution (Table 9).

Among intentional deaths in 2021, the next most common risk factors comprised:

- limitation of activities due to disability (13%),
- disappearance and death of family member (8.8%), and
- disruption of family by separation and divorce (8.5%).

The next most common risk factors identified for unintentional deaths in 2021 comprised:

- problems related to release from prison (2.6%),
- problems in relationship with spouse or partner (2.3%), and
- problems related to other legal circumstances (2.2%) .

The most common risk factors for intentional and unintentional drug overdose deaths have been relatively consistent since monitoring of psychosocial risk factors began in 2017.

Table 9. The most common psychosocial risk factors in unintentional and intentional overdose deaths, Australia, 2021

Unintentional overdose deaths		Rank	Intentional overdose deaths	
Personal history of self-harm	5.0%	1	29%	Personal history of self-harm
Problems related to release from prison	2.6%	2 2	13%	Limitation of activities due to disability
Problems in relationship with spouse or partner	2.3%	3	8.8%	Disappearance and death of family member
Problems related to other legal circumstances	2.2%	4	8.5%	Disruption of family by separation and divorce
Disruption of family by separation and divorce	2.0%	5	6.2%	Problems in relationship with spouse or partner
Disappearance and death of family member	1.7%	6	4.3%	Other specified problems related to primary support group
Unemployment, unspecified	1.5%	7	3.2%	Absence of family member
Homelessness	1.4%	8	3.2%	Problems related to other legal circumstances
Conviction in civil and criminal proceedings without imprisonment	1.4%	9	3.0%	Other problems related to housing and economic circumstances
Personal history of noncompliance with medical treatment and regimen	1.4%	10 10	2.6%	Problem related to housing and economic circumstances, unspecified

*Percentages were calculated of total number of unintentional and intentional overdose deaths respectively

- Risk factor related to socioeconomic and psychosocial circumstances, ● Risk factor related to family and personal history and certain conditions influencing health status, Other risk factors.

Place of Occurrence

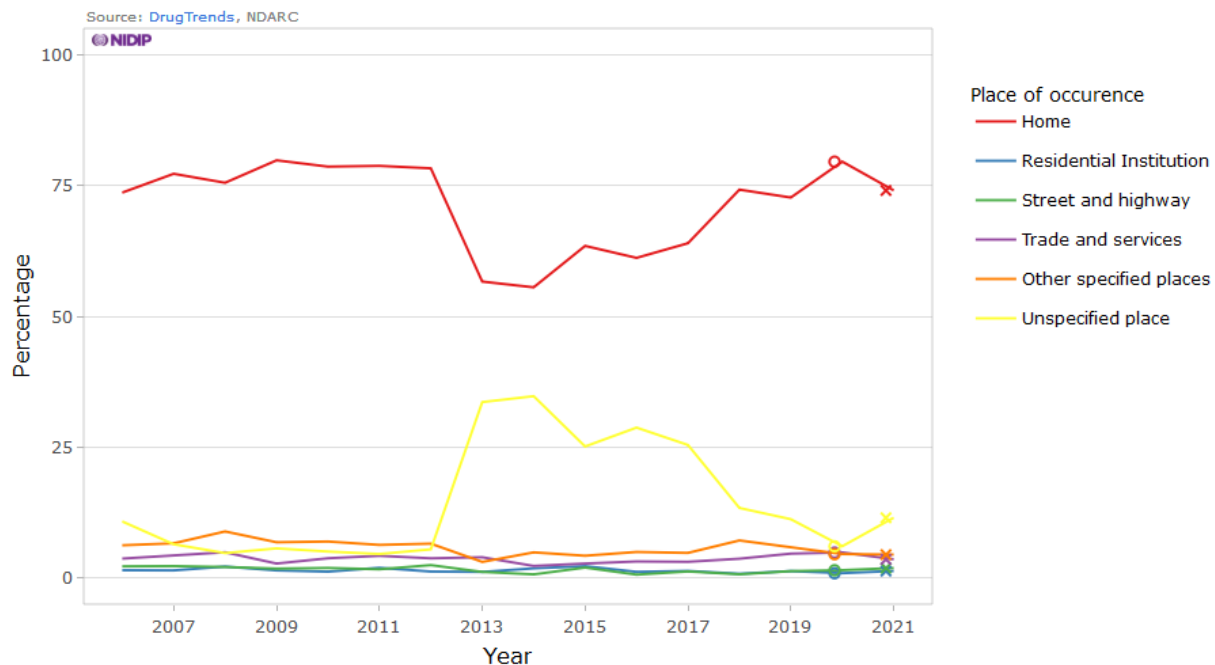
Place of occurrence refers to a physical location where the event leading to death (such as an injury, poisoning or adverse effect) occurred. Beginning in 2006, all deaths in Australia have been coded with this information. See the [methods](#) for details on change in coding practices.



For the majority (76%, 1,324 deaths) of drug overdose deaths in 2021, the location of the incident underlying the drug overdose death was coded as **home**. Trade and services locations (e.g., gas stations, hotels, shopping malls, warehouses, train stations or bus stops) were identified for 3.7% (64 deaths), street and highway for 2.0% (34 deaths) and residential institution in 1.4%. Other specified places (e.g., school, other institution and public administrative area, sports and athletics area, industrial and construction area, railway line and other public places) were identified in 4.6% of deaths (80 deaths). The place of occurrence could not be specified in 12% of drug overdose deaths (206 deaths).

The majority of drug overdose deaths have occurred at home over the course of monitoring ([Figure 12](#)). All other places of occurrence have consistently comprised less than 5% of cases each year. The exception is the percentage of deaths where place of occurrence could not be specified, which has been elevated from 2013, and likely reflects a change in coding practice, reinforcing the need for caution when interpreting these data.

Figure 12. Most frequently identified places of occurrence for drug overdose deaths, Australia, 2006-2021.



Note: Causes of death data for 2020 and 2021 are not final and thus are subject to further revision.

For data from 2006 to 2012, place of occurrence was derived from the 4th digit of the ICD-10 code assigned to deaths due to external causes, for matched coroner records. For 2013 data onwards, place of occurrence was coded directly from comments in the reports relating to the coroners' investigation.

Intent of Drug Overdose Deaths

In 2021, 73% (865 deaths) of unintentional overdose deaths and 84% (391 deaths) of intentional overdose deaths occurred at home. Since monitoring of this information began in 2006, the proportion of unintentional drug overdose deaths where the incident leading to death occurred at home has varied between 55% and 81%. A broadly similar range is evident for intentional deaths (between 59% and 87% per year). Although other places have a consistently similar rate of occurrence in both unintentional and intentional deaths, the place where the event leading to death happened could not be specified more often for unintentional than intentional deaths (15% versus 4.3%, respectively).

5

Drug Involvement in Drug Overdose Deaths

2021 : Drug-induced
DEATHS

1008

Overdose
deaths
involving
OPIOIDS

4.0 per 100,000
Australians vs. **4.8**
in 2020

943

Overdose
deaths
involving
**ANTIEPILEPTIC, SEDATIVE-HYPNOTIC
AND ANTI-PARKINSONISM DRUGS**

3.6 per 100,000
Australians vs. **4.4**
in 2020

547

Overdose
deaths
involving
ANTIDEPRESSANTS

2.1 per 100,000
Australians vs. **2.5**
in 2020

451

Overdose
deaths
involving
**AMPHETAMINE-TYPE
STIMULANTS**

1.8 per 100,000
Australians vs. **2.4**
in 2020

358

Overdose
deaths
involving
**ANTIPSYCHOTICS
& NEUROLEPTICS**

1.4 per 100,000
Australians vs. **1.5**
in 2020

270

Overdose
deaths
involving
ALCOHOL

1.0 per 100,000
Australians vs. **1.2**
in 2020

207

Overdose
deaths
involving
**NON-OPIOID
ANALGESICS**

0.77 per 100,000
Australians vs. **0.82**
in 2020

82

Overdose
deaths
involving
COCAINE

0.34 per 100,000
Australians vs. **0.37**
in 2020

80

Overdose
deaths
involving
CANNABINOIDS

0.33 per 100,000
Australians vs. **0.47**
in 2020

The findings in this chapter and in Chapters 6 and 7 are concentrated on drug overdose deaths; these deaths comprise 96-99% of all drug-induced deaths each year. The reason we focus on these cases is that if a specific drug is identified in toxicology reports as being present in the person's system and deemed to be contributory to that death then this case will be identified as a drug overdose death.

It is important to note that drug types in this report are not mutually exclusive; there may be multiple drugs that contribute to a drug overdose death. Therefore, the individual numbers cannot be used to calculate a total. Also, percentages of drug involvement are likely to be underestimates as some substances are not always included in routine toxicological screening at death.

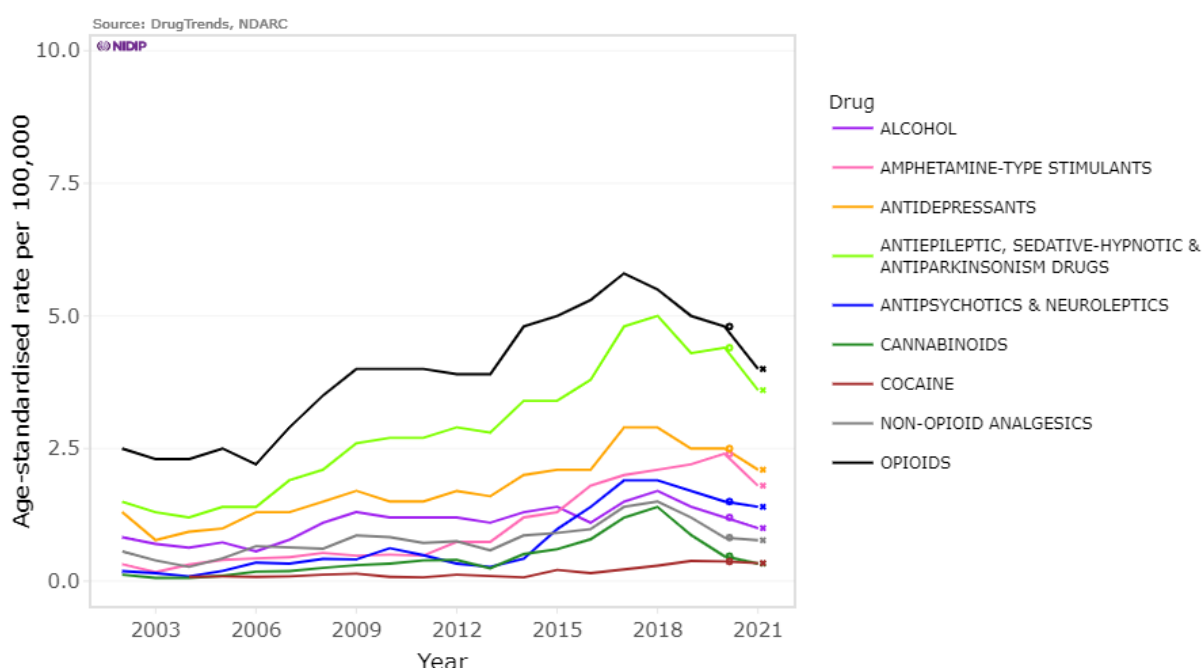
Drug Involvement

In 2021, the most common drug type involved in drug overdose deaths was **opioids** (58%, 1008 deaths, 4.0 deaths per 100,000 people) (Figure 13). As in 2020, this was followed by **antiepileptic, sedative-hypnotic and anti-parkinsonism drugs** (54%, 943 deaths, 3.6 deaths per 100,00 people), which predominantly comprised benzodiazepines (45%, 778 deaths, 3.0 deaths per 100,00 people).

Other drug types involved in drug overdose deaths studied in this report comprise:

- **Antidepressants** (32%, 547 deaths, 2.1 deaths per 100,000 people),
- **Amphetamine-type stimulants** (26%, 451 deaths, 1.8 deaths per 100,000 people),
- **Antipsychotics and neuroleptics** (21%, 358 deaths, 1.4 deaths per 100,000 people),
- **Alcohol** (16%, 270 deaths, 1.0 deaths per 100,000 people),
- **Non-opioid analgesics, antipyretics and antirheumatics** (12%, 207 deaths, 0.77 deaths per 100,000 people),
- **Cocaine** (4.7%, 82 deaths, 0.34 deaths per 100,000 people), and
- **Cannabinoids** (4.6%, 80 deaths, 0.33 deaths per 100,000 people).

Figure 13. Age-standardised rate per 100,000 people of drug overdose deaths for the Australian population, by drug class, 2002-2021.



Note: Deaths where conditions related to alcohol or tobacco comprised the underlying cause of death are not captured here.

Causes of death data for 2020 and 2021 are not final and thus are subject to further revision. The symbol 'o' indicates revised estimates and 'x' preliminary estimates.

Age-standardised rates were not calculated if the number of deaths was less than or equal to 10 (please refer to our methods document for details). Suppressed data are visible as gaps in the data series.

Trend since 2002

- From 2002 and 2019, the rate of drug overdose deaths across all drug classes increased. Indeed, nearly all drug classes experienced a peak in the rate of drug overdose deaths in 2017 or 2018, except for cocaine and amphetamine-type stimulants, whose rates kept increasing and peaked in 2019 and 2020, respectively.
- From 2002 to 2019, the rate increased on average by:
 - 14% per year for overdose deaths involving **amphetamine-type stimulants** (95%CI: 8.1%, 20%),
 - 7.0% per year for overdose deaths involving **antidepressants** (95%CI: 6.0%, 8.0%),
 - 8.7% per year for overdose deaths involving **antiepileptic, sedative-hypnotic and anti-parkinsonism drugs** (95%CI: 7.6%, 9.8%),
 - 16% per year for overdose deaths involving **antipsychotics and neuroleptics** (95%CI: 1.8%, 32%),
 - 18% per year for overdose deaths involving **cannabinoids** (95%CI: 15%, 21%),
 - 12% per year for overdose deaths involving **cocaine** (95%CI: 4.3%, 20%),
 - 7.4% per year for overdose deaths involving **non-opioid analgesics** (95%CI: 5.4%, 9.5%), and
 - 5.1% per year for overdose deaths involving **opioids** (95%CI: 7.8%, 12%).
- Comparison between the latest estimates confirmed significantly lower rates of drug overdose deaths in 2021 compared to 2020 for the following drug classes, noting again that estimates will be revised upwards with revision:
 - **Amphetamine-type stimulants** by 24% (1.8 versus 2.4 deaths per 100,000 people),
 - **Antidepressants** by 17% (2.1 versus 2.5 deaths per 100,000 people),
 - **Antiepileptic, sedative-hypnotic and anti-parkinsonism drugs** by 17% (3.6 versus 4.4 deaths per 100,000 people),
 - **Cannabinoids** by 30% (0.33 versus 0.37 deaths per 100,000 people), and
 - **Opioids** by 18% (4.0 versus 4.8 deaths per 100,000 people) (Table A10).

Sex

In 2021, opioids was the most commonly identified drug type in drug overdose deaths among **males** (5.1 deaths per 100,000 people), followed by antiepileptic, sedative-hypnotic and anti-parkinsonism drugs (4.5 deaths per 100,000 people).

Among **females**, the rate of overdose deaths involving opioids was equally high as the rate of antiepileptic, sedative-hypnotic and anti-parkinsonism drugs (2.8 deaths per 100,000 people, each).

Age

In 2021, antiepileptic, sedative-hypnotic and anti-parkinsonism drugs was the drug type with highest rate of death in people aged 15-24, 65-74, 75-84 and 85 and over, usually followed by opioids. The reverse was observed in the 34-45 and 45-54 age groups; rates for the two drug classes were similarly high in the 25-34 and 55-64 age groups.

Intent of Drug Overdose Deaths

When examining [unintentional drug overdose deaths](#) in 2021, the pattern of drug involvement was largely consistent with results for all overdose deaths, apart from amphetamine-type stimulants, which had a higher rate than antidepressants:

- **Opioids** (763 deaths, 3.1 deaths per 100,000 people)
- **Antiepileptic, sedative-hypnotic and anti-parkinsonism drugs** (615 deaths, 2.5 deaths per 100,000 people)
- **Amphetamine-type stimulants** (407 deaths, 1.7 deaths per 100,000 people)
- **Antidepressants** (320 deaths, 1.3 deaths per 100,000 people)
- **Antipsychotics and neuroleptics** (234 deaths, 0.95 deaths per 100,000 people)
- **Alcohol** (183 deaths, 0.72 deaths per 100,000 people)
- **Non-opioid analgesics, antipyretics and antirheumatics** (108 deaths, 0.42 deaths per 100,000 people),
- **Cocaine** (77 deaths, 0.32 deaths per 100,000 people), and
- **Cannabinoids** (70 deaths, 0.29 deaths per 100,000 people).

A different pattern was observed for [intentional drug overdose deaths](#). The most common drug class involved in intentional overdose deaths in 2021 was antiepileptic, sedative-hypnotic and anti-parkinsonism drugs, followed by opioids and antidepressants:

- **Antiepileptic, sedative-hypnotic and anti-parkinsonism drugs** (281 deaths, 1.1 deaths per 100,000 people)
- **Opioids** (196 deaths, 0.70 deaths per 100,000 people)
- **Antidepressants** (187 deaths, 0.67 deaths per 100,000 people)
- **Antipsychotics and neuroleptics** (107 deaths, 0.41 deaths per 100,000 people)
- **Non-opioid analgesics, antipyretics and antirheumatics** (83 deaths, 0.29 deaths per 100,000 people),
- **Alcohol** (78 deaths, 0.30 deaths per 100,000 people), and
- **Amphetamine-type stimulants** (39 deaths, 0.15 deaths per 100,000 people).

Numbers of overdose deaths involving cocaine or cannabinoids were too small to present.

Trend since 2002

- From 2002 to 2019, the rates of unintentional drug overdose deaths have increased for nearly all drug types, peaking usually in 2018, except for cocaine (peak in 2019) and amphetamine-type stimulants (peak in 2020).
- Comparison of the latest estimates identified lower rates in 2021 compared to 2020 in unintentional drug overdose deaths involving:
 - alcohol by 21% (0.72 versus 0.92 deaths per 100,000 people),
 - amphetamine-type stimulants by 19% (1.7 versus 2.1 deaths per 100,000 people),
 - antidepressants by 18% (1.3 versus 1.5 deaths per 100,000 people),
 - antiepileptic, sedative-hypnotics & antiparkinsonism drugs by 22% (2.5 to 3.2 deaths per 100,000 people),
 - cannabinoids by 31% (0.29 versus 0.42 deaths per 100,000 people), and
 - opioids by 22% (3.1 versus 3.9% deaths per 100,000 people) (Table A11).
- Similarly, the rates of intentional drug overdose deaths generally [increased](#) from 2002 to 2019 for all drug types.
- Comparison of the latest estimates of intentional overdose deaths did not show any significant difference for any of the drug types.

Profile of Drug Involvement

Our [earlier research](#) demonstrated that more than one drug classes was involved in the majority of drug overdose deaths from 2012 to 2016, and that intentional and unintentional overdose deaths had different demographic and drug involvement profiles.

In this section, we therefore describe the common drug pattern profiles in unintentional and intentional overdose deaths separately for the following drug classes: heroin, other opioids (excluding heroin), amphetamine-type stimulants, cocaine, antidepressants, antipsychotics and neuroleptics, antiepileptic, sedative-hypnotic and anti-parkinsonism drugs, non-opioid analgesics, alcohol, and cannabinoids. A small proportion (5.6%) of overdose deaths involved none of these drug types.

Due to the large number of possible drug pattern profiles in drug overdose deaths (and subsequent small numbers), data from 2017 to 2021 have been combined for this reporting.

There were 9,466 drug overdose deaths between 2017 and 2021, of which 71% were unintentional and 25% intentional (6,696 and 2,359 deaths, respectively). Of those cases with at least one drug class of interest (9,011 deaths), 77% (6,951 deaths) involved two or more drug classes (range 2-7 classes). Specifically:

- 23% (2,060 deaths) of drug overdose deaths involved one drug class,
- 22% (1,975 deaths) involved two drug classes,
- 26% (2,314 deaths) involved three drug classes, and

- 30% (2,662 deaths) involved four or more of these drug classes.

Profile by Intent of Drug Overdose Deaths

The five most common drug pattern profiles which cumulatively accounted for 25% of all unintentional overdose deaths in 2017-2021 (Figure 14A) comprised:

- Amphetamine-type stimulants only (6.3%, 424),
- Heroin only (5.7%, 384 deaths),
- Opioids (excluding heroin) only (4.6%, 307 deaths),
- Opioids (excluding heroin) with antiepileptic, sedative-hypnotic and anti-parkinsonism drugs (4.2%, 281 deaths), and
- Opioids (excluding heroin) with antiepileptic, sedative-hypnotic and anti-parkinsonism drugs and antidepressants (3.8%, 252 deaths).

Of all unintentional drug overdose deaths, 78% involved two or more drug classes.

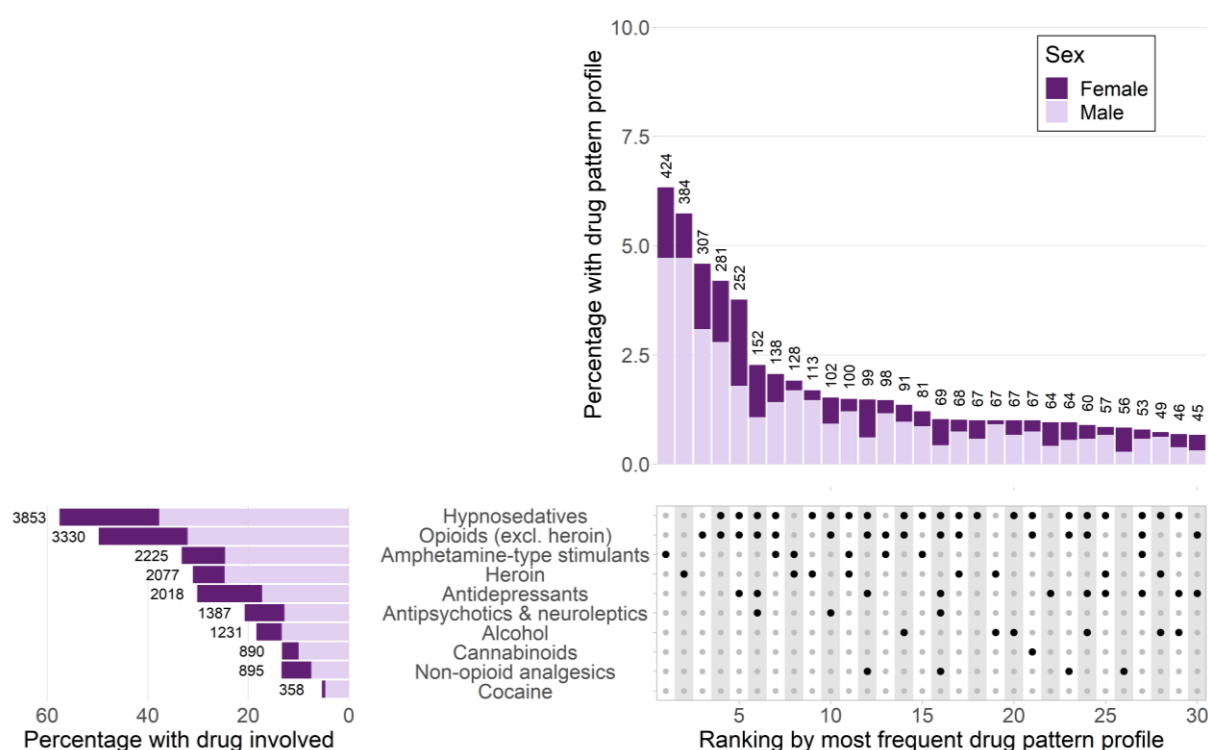
The five most common drug pattern profiles which cumulatively accounted for 28% of the intentional overdose deaths in 2017-2021 (Figure 14B) comprised:

- Antiepileptic, sedative-hypnotic and anti-parkinsonism drugs only (9.6%, 226 deaths),
- Opioids (excluding heroin) with antiepileptic, sedative-hypnotic and anti-parkinsonism drugs (5.2%, 122 deaths),
- Antiepileptic, sedative-hypnotic and anti-parkinsonism drugs with antidepressants (4.6%, 109 deaths),
- Antidepressants only (4.3%, 104 deaths), and
- Opioids (excluding heroin) with antiepileptic, sedative-hypnotic and anti-parkinsonism drugs and antidepressants (4.2%, 98 deaths).

Of all intentional drug overdose deaths, 74% involved two or more drug classes.

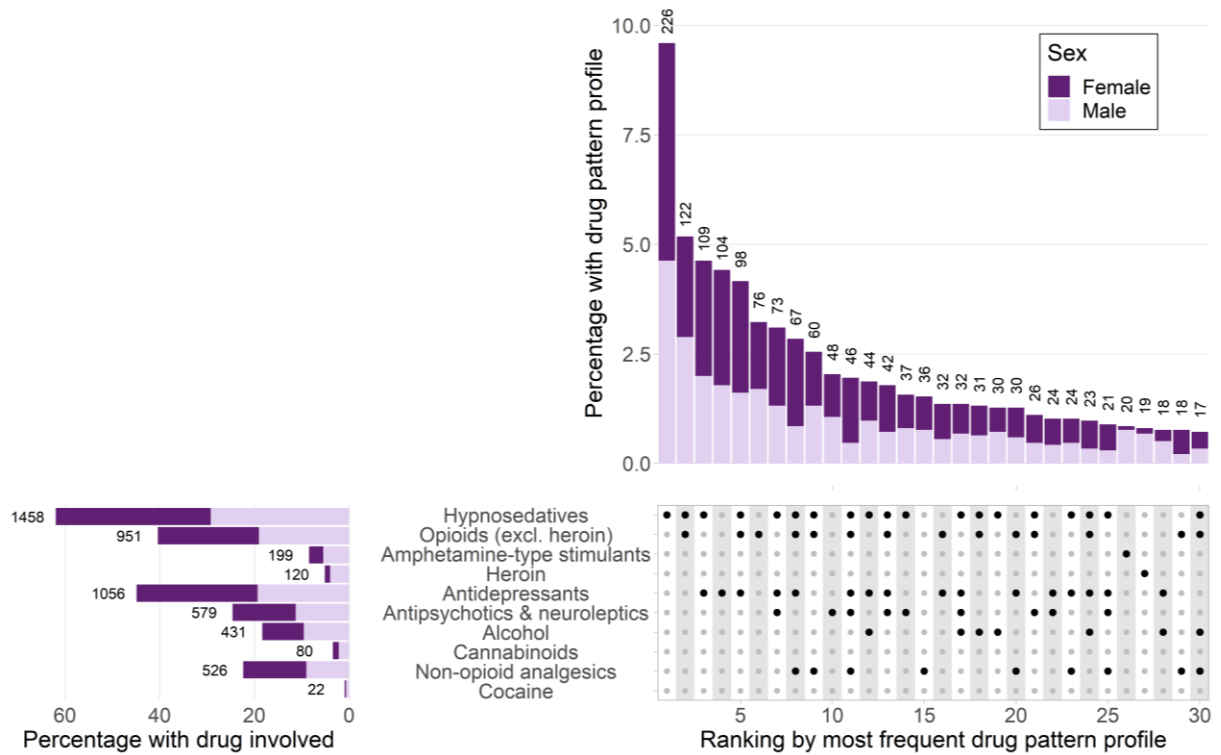
Figure 14. Thirty most common drug pattern profiles of unintentional (A) and intentional (B) drug overdose deaths, by sex, Australia, 2017-2021

(A) Unintentional



Note: Antiepileptic, sedative-hypnotic and anti-parkinsonism drugs is shown as Hypnosedatives in the figure.

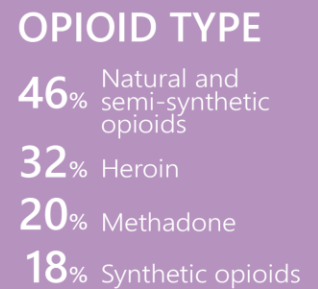
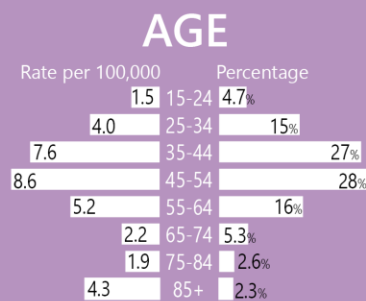
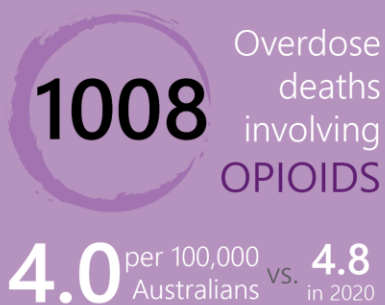
(B) Intentional



Note. Figures present the number of deaths by drug pattern profile for males and females. Dots represent intersection of drug classes involved in the drug pattern profile. Note the axis depicts the percentage of deaths, and data labels show the number of deaths. The percentage axes have been rescaled to improve presentation of the results. Antiepileptic, sedative-hypnotic and anti-parkinsonism drugs is shown as Hypnotosedatives in the figure.

6

Drug Overdose Deaths Involving Opioids

2021 Drug-induced
DEATHS

2002-2021

Age-standardised rate per 100,000 people of drug overdose deaths involving OPIOIDS, Australia 2002-2021

The highest rate was recorded in **2017** and reached **5.8 deaths per 100,000 Australians.**



Note: Deaths where conditions related to alcohol or tobacco comprised the underlying cause of death are not captured here. Causes of death data for 2020 and 2021 are not final and thus are subject to further revision (indicated by the grey area on the plot).

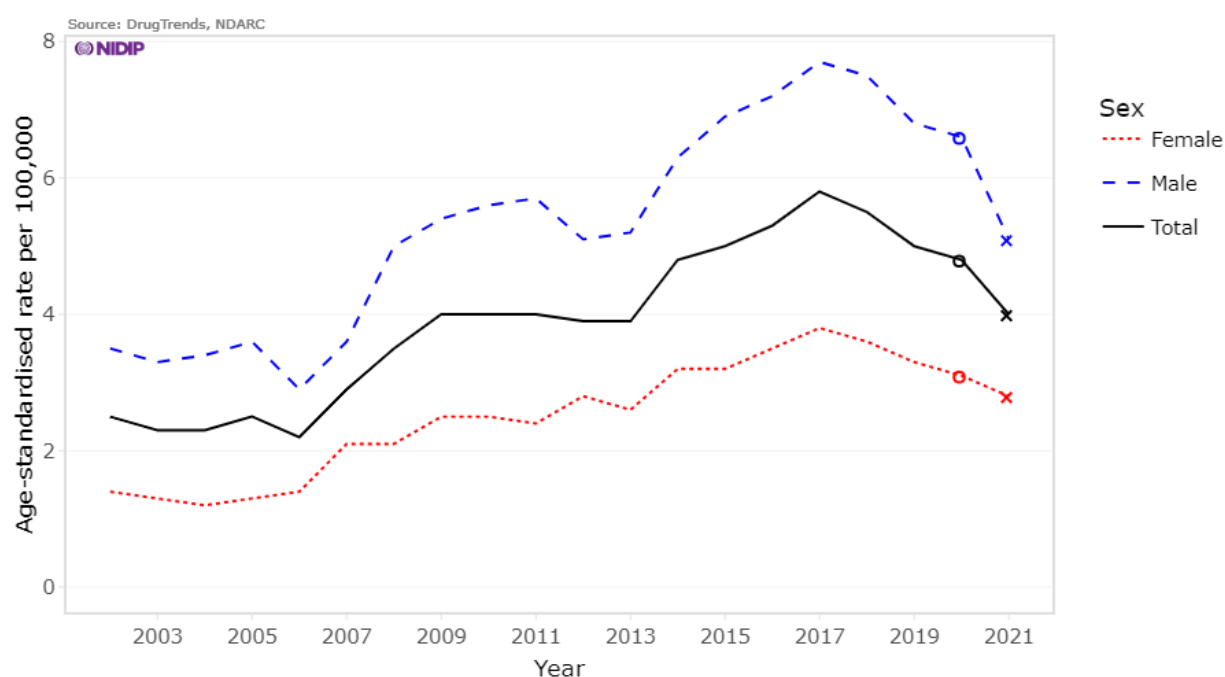
Overall Characteristics

In 2021, there were 1008 drug overdose deaths involving opioids among Australians (4.0 deaths per 100,000 people).

Trend since 2002

- From 2002 to 2019, the rate of drug overdose deaths involving opioids more than doubled (2.5 versus 5.0 deaths per 100,000 people, respectively), increasing on average by 5.1% (Figure 15).
- The highest rate of drug overdose deaths involving opioids was recorded in 2017 (5.8 deaths per 100,000 people).
- The preliminary revised 2021 rate was lower than the revised 2020 rate (4.0 versus 4.8, respectively) (Table A10).

Figure 15. Age standardised rate per 100,000 people of drug overdose deaths involving opioids for the Australian population, by sex, 2002-2021



Note: Causes of death data for 2020 and 2021 are not final and thus are subject to further revision. The symbol 'o' indicates revised estimates and 'x' preliminary estimates.

Sex

In 2021, 64% (642 deaths) of drug overdose deaths involving opioids occurred among males. This sex disparity has been consistent over time, with the number of deaths for males typically being twice the number of deaths for females.

The population rate for drug overdose deaths involving opioids among males was also twice the female rate (5.1 versus 2.8 deaths per 100,000 people, respectively).

Trend since 2002

- From 2002 to 2019, the rate of opioid-overdose deaths in males and females followed a similar pattern of increase. Rates for both males and females peaked in 2017, reaching 7.7 deaths and 3.8 deaths per 100,000 people, respectively (Figure 15).
- The preliminary revised 2021 rate was lower than the revised 2020 rate for males (5.1 versus 6.6, respectively) but not for females (2.8 versus 3.1 deaths per 100,000 people, respectively) (Table A12).

Age

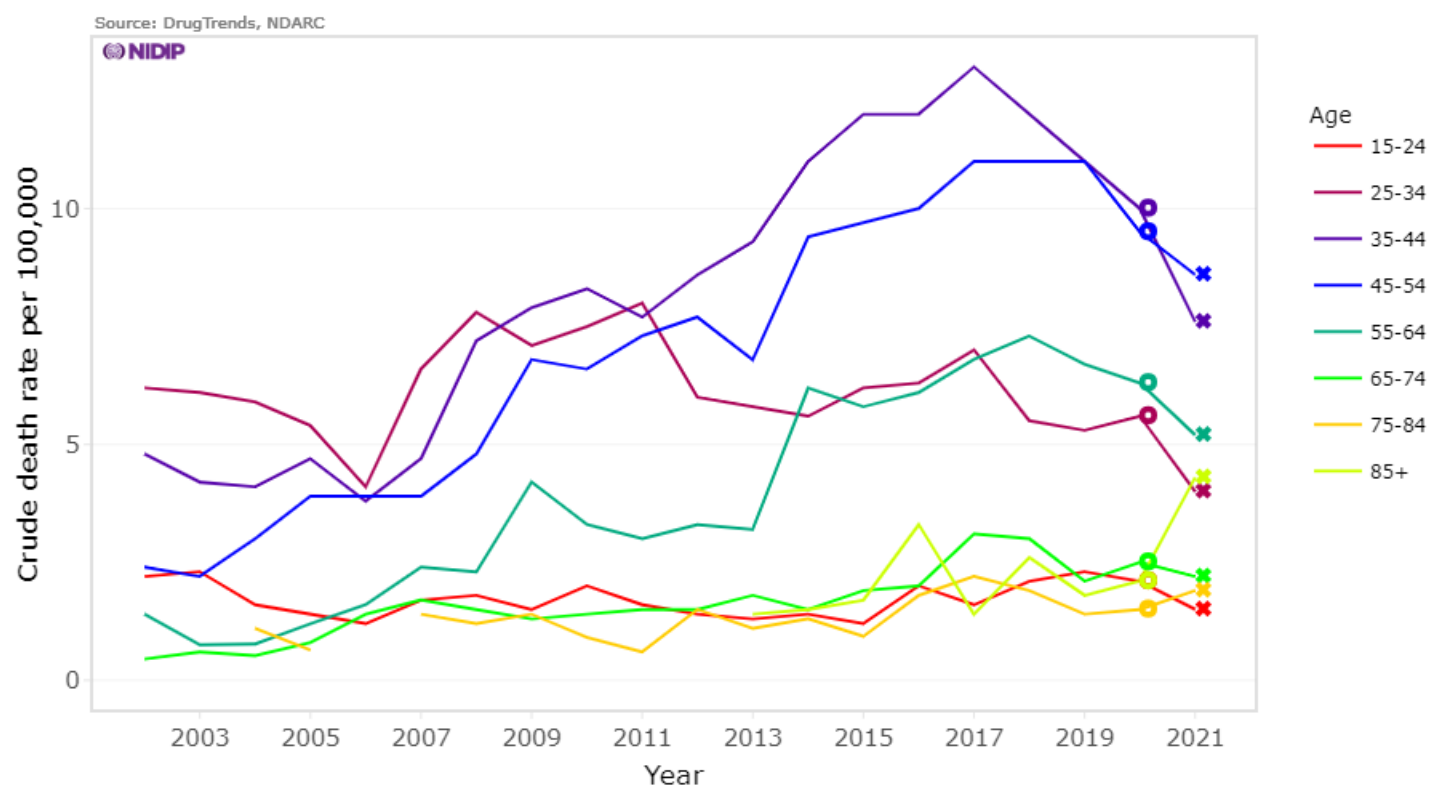
In 2021, the highest proportion of overdose deaths involving opioids occurred among Australians aged 45-54 years (28%, 282 deaths), followed by the 35-44 (27%, 268 deaths), 55-64 (16%, 157 deaths) and 25-34 (15%, 150 deaths) age groups.

The population rate was also highest in the 45-54 age group (8.6 deaths per 100,000 people), followed by the 34-44 age group (7.6 deaths per 100,000 people).

Trend since 2002

- Over the years, the age distribution of drug overdose deaths involving opioids has changed. In the early 2000s, the younger age groups (i.e., 25-34 age group, followed by 35-44, 45-54 and 15-24 age groups) comprised the greater proportion of deaths. The percentage of deaths in the 25-34 and 15-24 age groups has declined over time in favour of an increased proportion of deaths in the 45-54 and 55-64 age groups.
- In the period from 2002 to 2019, the rate of overdose deaths involving opioids among the 35-44 and 45-54 age group increased from 4.8 and 2.4 deaths per 100,000 people in 2002 to a peak of 13 and 11 deaths per 100,000 people, respectively, in 2017. Another large increase between 2002 and 2019 was apparent for the 55-64 age group (1.4 to 6.7 deaths per 100,000 people, respectively) (Figure 16).
- While subject to revision, estimates for the years 2021 are generally lower than (for 25-34 and 35-44 age groups) or similar to (for 15-24, 45-54, 55-64, 65-74 and 75-84 age groups) those for 2020 (Table A13).
- Although the difference is not statistically significant, the rate in the 85 and over age group was nearly two times higher in 2021 than it was in 2020 (4.3 versus 2.1 deaths per 100,000 people).

Figure 16. Crude rate per 100,000 people of drug overdose deaths involving opioids for the Australian population, by age, 2002-2021.



Note: Causes of death data for 2020 and 2021 are not final and thus are subject to further revision. The symbol 'o' indicates revised estimates and 'x' preliminary estimates. Rates for small numbers (less than or equal to 5 deaths) are suppressed. The rates for the 0-14 years age group are not presented due to sensitivity of the data.

Intent of Drug Overdose Deaths

In 2021, three-in-four (76%, 763 deaths) drug overdose deaths involving opioids were considered unintentional, 19% (196 deaths) were considered intentional, and 4.9% (49 deaths) of undetermined intent. This pattern has been relatively consistent over the years.

When considering rates, unintentional overdose deaths involving opioids followed the same trend over time as overall overdose deaths involving opioids, peaking in 2017 and 2018 at 4.6 deaths per 100,000 people and evidencing a lower preliminary rate in 2021 as compared to the revised 2020 rate (3.1 versus 3.9 deaths per 100,000 people) (Table A11).

Opioid Type

In 2021, 25% (256 deaths) of drug overdose deaths involving opioids were attributed to [heroin only](#), 67% (674 deaths) to opioids other than heroin (e.g., pharmaceutical opioids) and 6.9% (70 deaths) to both heroin and other opioids. The number of opioid-induced deaths attributed to opium or unspecified opioids was very small (less than 10).

This profile in 2021 represents a shift over time in opioid involvement. Specifically, it represents an increase in the percentage of opioid-overdose deaths attributed to heroin only since 2012 (14% in 2012) and a decrease in the percentage of other opioids only (72% in 2012) and opium or unspecified opioids (8.9% in 2012).

Overall, in 2021, there were:

- 462 overdose deaths involving **natural and semi-synthetic opioids** (e.g., morphine, codeine, oxycodone) (46%),
- 326 deaths involving **heroin** (32%),
- 205 deaths involving **methadone** (20%), and
- 184 deaths involving **synthetic opioids** (e.g., fentanyl, tramadol, pethidine) (18%).

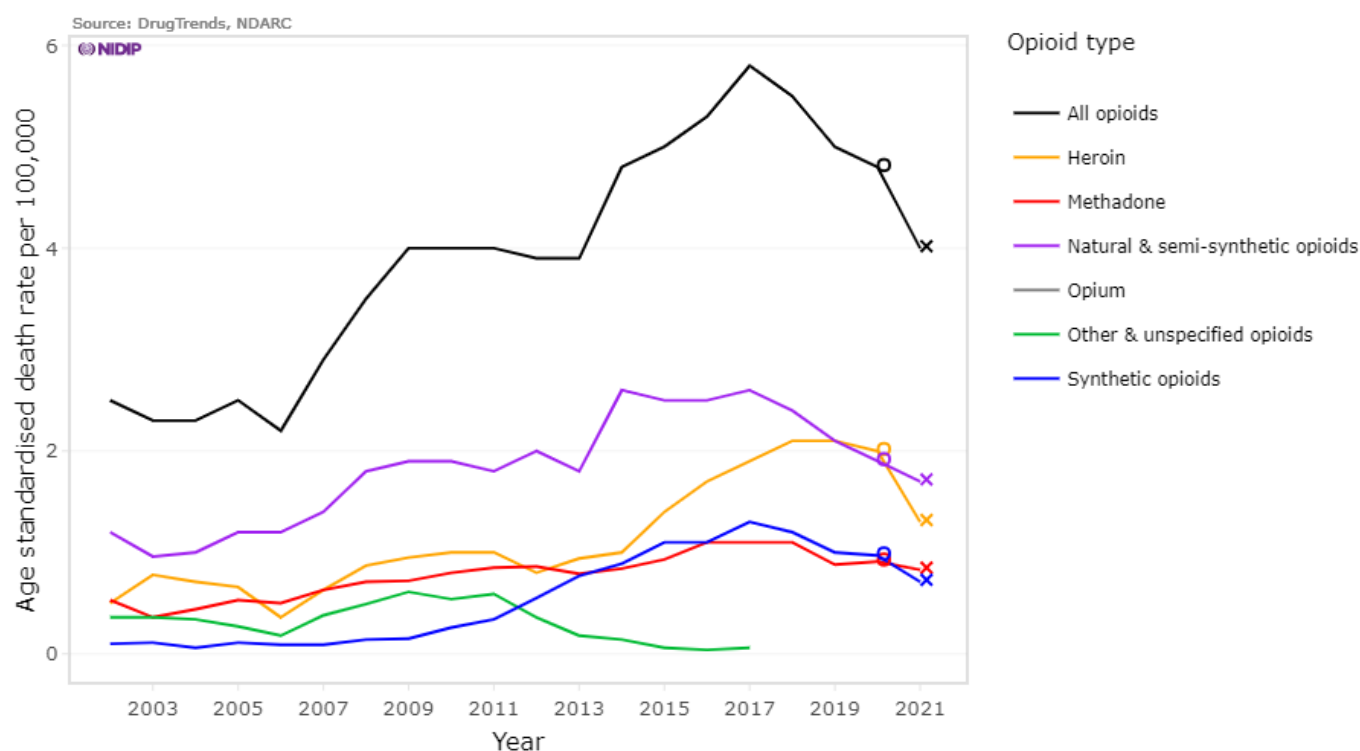
These numbers are not additive as multiple opioids may be involved in a single death ([Figure 17](#)).

Trend since 2002

- From 2002 to 2019, the rate of overdose deaths involving [heroin](#) increased from 0.5 in 2002 to 2.1 deaths per 100,000 people in 2019.
- The rates of overdose deaths involving natural and semi-synthetic opioids, synthetic opioids, and methadone also increased from 2002 and they reached their highest levels in 2014, 2017, and 2016, respectively.
- The preliminary revised 2021 rates were lower than the revised 2020 for:
 - heroin (1.3 versus 2.0 deaths per 100,000 people, respectively) and
 - synthetic opioids (0.71 versus 0.97 deaths per 100,000 people, respectively) (Table A14).

These findings should be treated with caution until revised data are released, as there is the potential for an increase in rates with revision of estimates, with greater increases anticipated with revision for more recent data.

Figure 17. Age-standardised rate per 100,000 people of drug overdose deaths involving opioids for the Australian population, by opioid type, 2002-2021.



Note: Causes of death data for 2020 and 2021 are not final and subject to further revision. The symbol 'o' indicates revised estimates and 'x' preliminary estimates.

One opioid-overdose death may involve multiple opioid types and that findings here reflect the number of opioid-overdose deaths involving each opioid type (not necessarily attributed primarily to that opioid). Opioid type was identified if the following ICD-10 code was recorded: heroin (T40.1), methadone (T40.3), natural and semi-synthetic opioids (T40.2), synthetic opioids (T40.4), other and unspecified opioids (T40.0, T40.6).

Age-standardised rates were not calculated if the number of deaths was less than or equal to 10 (please refer to our methods document for details). Suppressed data are visible as gaps in the data series.

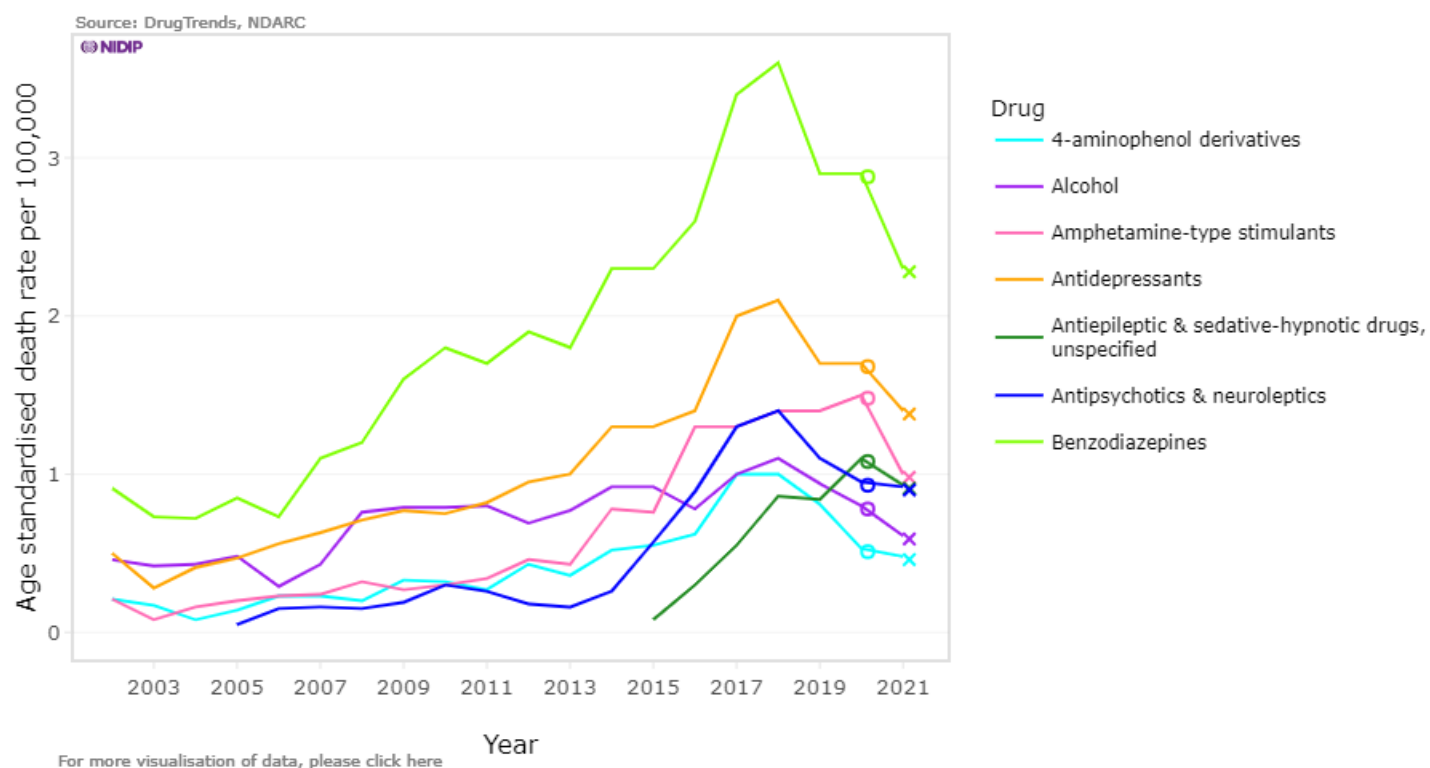
Other Drug Involvement

In 2021, **benzodiazepines** and **antidepressants** remained the most common non-opioid drug types involved in opioid-overdose deaths, with benzodiazepines being involved in 58% (592 deaths) and antidepressants in 36% (362 deaths) of these deaths. Other drugs commonly involved in overdose deaths involving opioids in 2021 were **amphetamine-type stimulants** (25%, 247 deaths), **antiepileptic and sedative-hypnotic drugs, unspecified** (predominantly comprising pregabalin; 23%, 234 deaths), **antipsychotics and neuroleptics** (23%, 228 deaths) and **4-aminophenol derivatives** (e.g., paracetamol) (13%, 130 deaths) ([Figure 18](#)). **Alcohol** was found to be a contributory to 15% (155 death) of opioid-induced deaths.

Trend since 2002

- As per the overall trend of increasing rates of drug overdose deaths involving these substances, the rate of their involvement in opioid overdose deaths has also increased from 2002 to 2019, peaking usually in 2018 ([Figure 18](#)).
- The preliminary revised 2021 rate was lower than the 2020 for involvement of:
 - benzodiazepines (2.3 versus 2.9 deaths per 100,000 people),
 - antidepressants (1.4 versus 1.7 deaths per 100,000 people),
 - amphetamine-type stimulants (1.0 versus 1.5 deaths per 100,000 people), and
 - alcohol (0.61 versus 0.80 deaths per 100,000 people) (Table A15).

Figure 18. Age-standardised rate per 100,000 people of drug overdose deaths involving opioids for the Australian population, by other drugs involved, 2002-2021.



Note: Causes of death data for 2020 and 2021 are not final and subject to further revision. The symbol 'o' indicates revised estimates and 'x' preliminary estimates.

Age-standardised rates were not calculated if the number of deaths was less than or equal to 10 (please refer to our methods document for details). Suppressed data are visible as gaps in the data series.

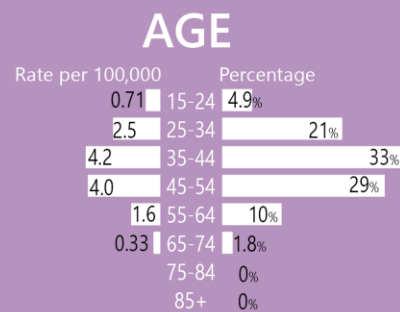
7

Drug Overdose Deaths Involving Amphetamine-Type Stimulants

2021 : Drug-induced
DEATHS

451 Overdose deaths involving
AMPHETAMINE-TYPE STIMULANTS

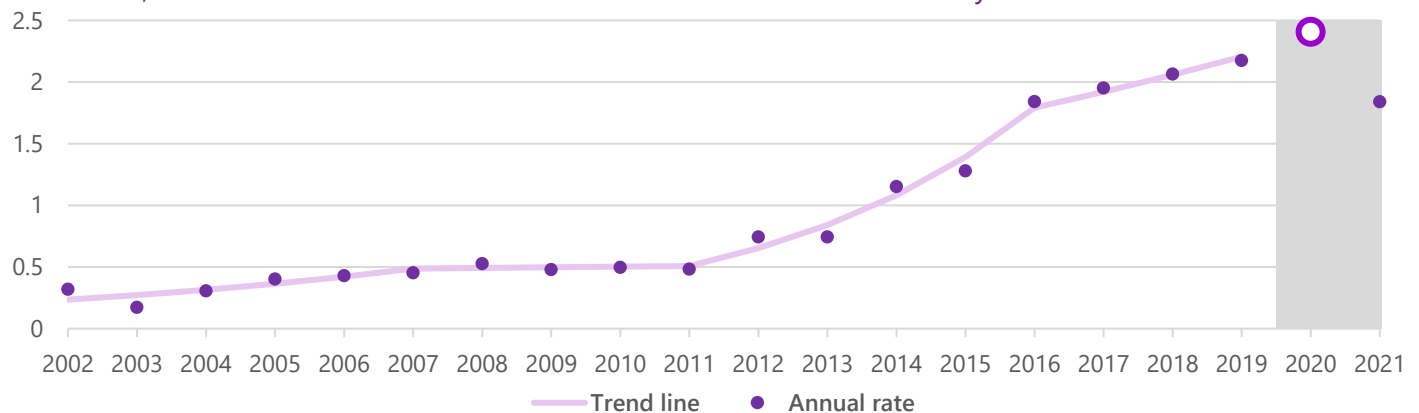
1.8 per 100,000 Australians vs. **2.4** in 2020



90%
UNINTENTIONAL

2002-2021

Age-standardised rate per 100,000 people of drug-induced deaths involving **AMPHETAMINE-TYPE STIMULANTS**, Australia, 2002-2021



Note: Deaths where conditions related to alcohol or tobacco comprised the underlying cause of death are not captured here. Causes of death data for 2020 and 2021 are not final and thus are subject to further revision (indicated by the grey area on the plot).

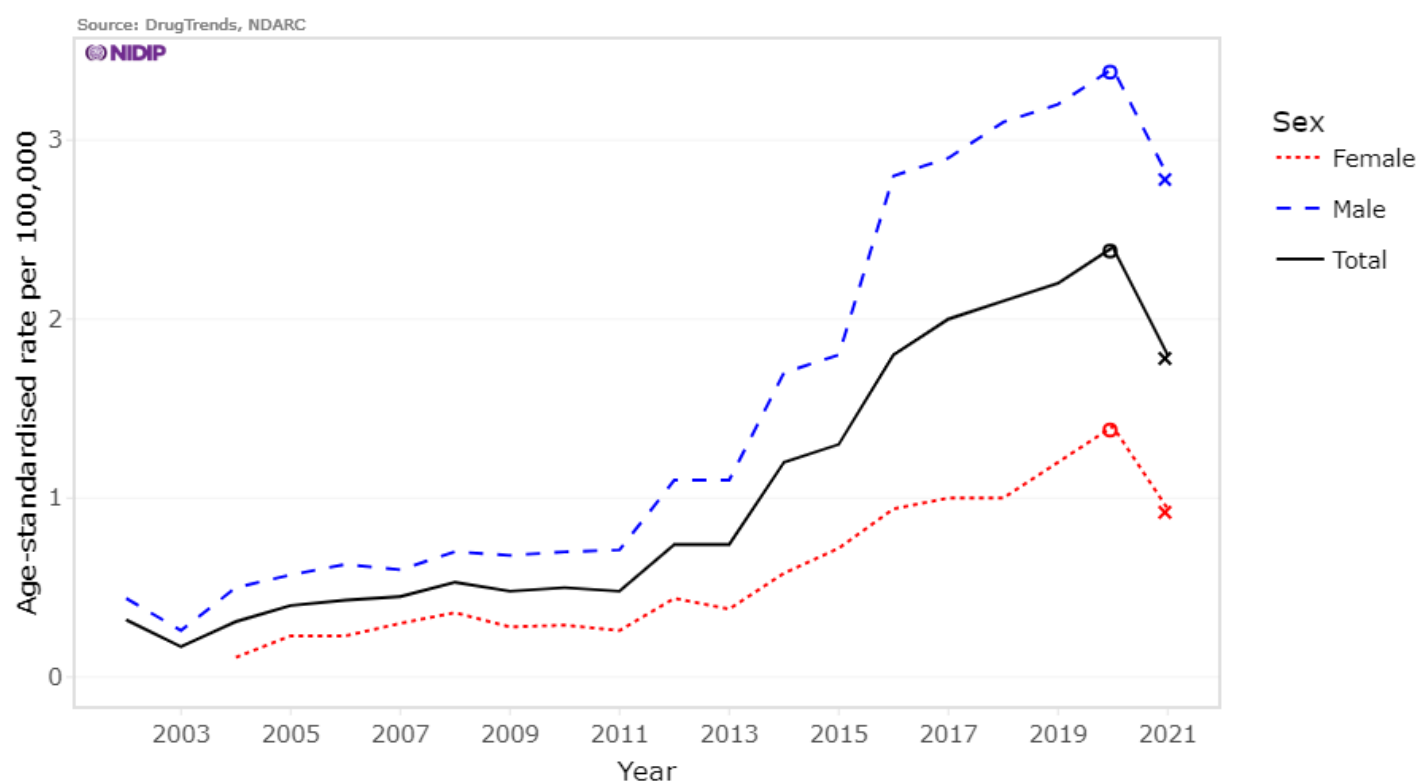
Overall Characteristics

There were 451 drug overdose deaths involving [amphetamine-type stimulants](#) among Australians in 2021 (1.8 deaths per 100,000 people).

Trends since 2002

- From 2002 and 2019, the rate of drug overdose deaths involving amphetamine-type stimulants increased over six-fold (0.32 to 2.6 deaths per 100,000 people, respectively), increasing on average by 14% per year ([Figure 19](#)) (Table A10).
- The revised rate of drug overdose deaths involving amphetamine-type stimulants in 2020 was the highest recorded across the period of monitoring (2.4 deaths per 100,000 people).
- The preliminary revised 2021 estimate was lower compared to 2020 (1.8 versus 2.4 deaths per 100,000 people). It should be noted that the rates reported for 2020 and 2021 are expected to increase when data are revised and finalised.

Figure 19. Age-standardised rate per 100,000 people of drug overdose deaths involving amphetamine-type stimulants for the Australian population, by sex, 2002-2021.



Note: Deaths where conditions related to alcohol or tobacco comprised the underlying cause of death are not captured here. Causes of death data for 2020 and 2021 are not final and thus are subject to further revision. The symbol 'o' indicates revised estimates and 'x' preliminary estimates. Age-standardised rates were not calculated if the number of deaths was less than or equal to 10 (please refer to our methods document for details). Suppressed data are visible as gaps in the data series.

Sex

In 2021, the majority of drug overdose deaths involving amphetamine-type stimulants occurred among males (74%, 335 deaths). This is consistent with historical data.

The population rate for drug overdose deaths involving [amphetamine-type stimulants](#) was also higher among males than females (2.8 versus 0.94 deaths per 100,000 people, respectively).

Trends since 2002

- From 2020 to 2019, the rate of drug overdose deaths involving amphetamine-type stimulants for males and females followed a similar pattern of increase, with a particular increase observed between 2011 and 2019 (0.71 and 0.25 in 2011 to 3.2 and 1.2 deaths per 100,000 people in 2019, respectively) ([Figure 19](#)).
- The revised rate of drug overdose deaths involving amphetamine-type stimulants in 2020 was the highest recorded across the period of monitoring for both males and females (3.4 and 1.4 deaths per 100,000 people).
- The preliminary revised 2021 estimated rate was lower compared to 2020 for both males and females (Table A16).

Age

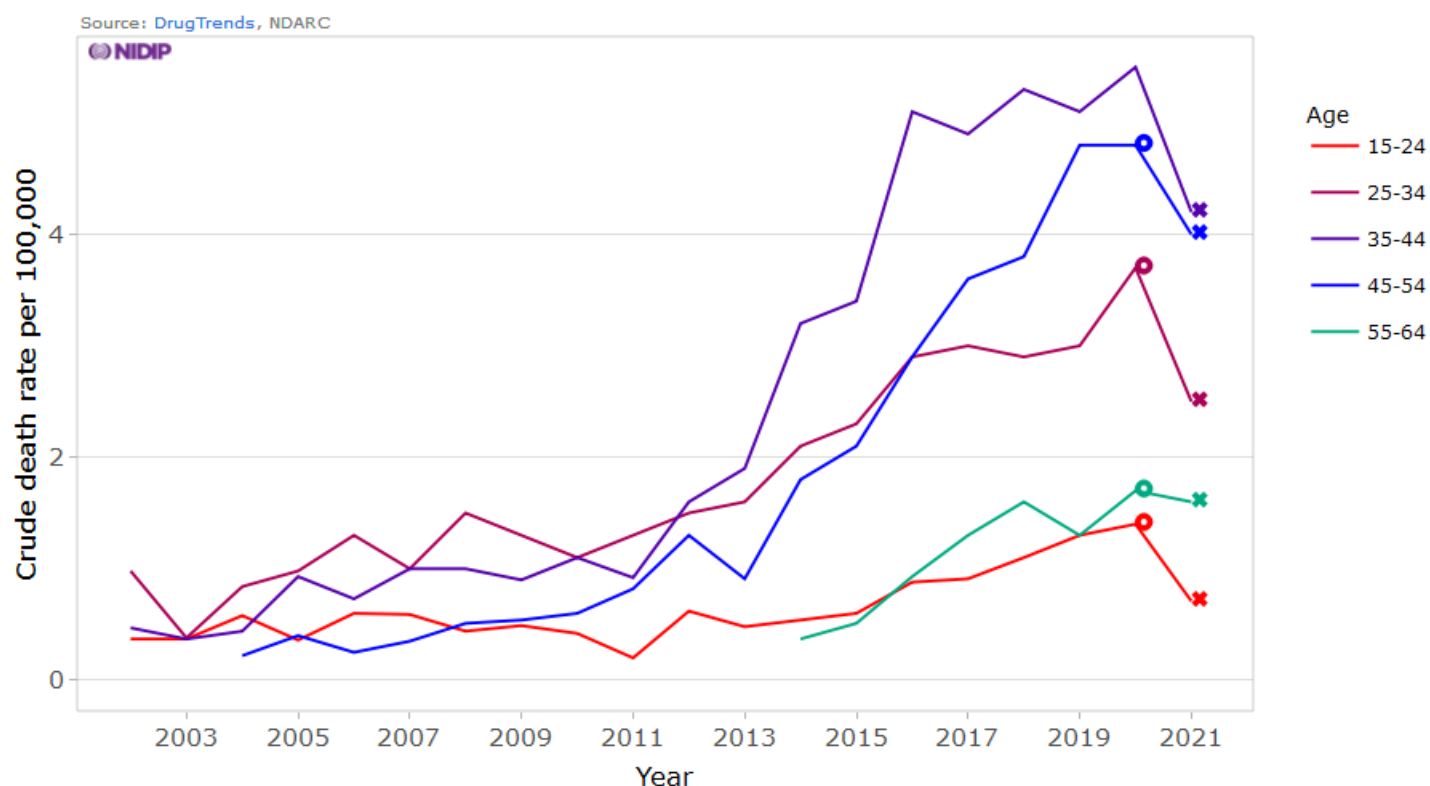
In 2021, the highest proportion of drug overdose deaths involving amphetamine-type stimulants was aged [35-44](#) (33%, 147 deaths, 4.2 deaths per 100,000 people), followed by the 45-54 (29%, 132 deaths, 4.0 deaths per 100,000 people) and 25-34 (21%, 94 deaths, 2.5 deaths per 100,000 people) age groups.

Amphetamine-type stimulants were rarely identified in drug overdose deaths among older people (i.e., 65 and over, 1.8%), and were uncommon in the youngest age group (i.e., 15-24, 4.9%) in 2021.

Trends since 2002

- There has been a shift in the age distribution of drug overdose deaths involving amphetamine-type stimulants over time from younger to older age groups. Specifically, 45% of drug overdose deaths involving amphetamine-type stimulants occurred among people aged 25-34 in 2002 compared to 21% in 2019.
- From 2002 to 2019, an increase in the rate of drug overdose deaths involving amphetamine-type stimulants has been observed in most age groups except for older age groups, namely those 65 and over, where amphetamine-type stimulants are rarely identified. This increase was most striking in three age groups:
 - the 35-44 age group (from 0.47 to 5.1 deaths per 100,000 people in 2002 and 2019, respectively),
 - the 45-54 age group (from 0.34 to 4.8 deaths per 100,000 people in 2002 and 2019, respectively), and
 - the 25-34 age group (from 0.98 to 3.0 deaths per 100,000 people in 2002 and 2019, respectively) ([Figure 20](#)).
- Rates peaked in 2020 for 35-44, 25-34, 55-64 and 15-24 age groups.
- The preliminary revised 2021 rates were lower than the 2020 rates for 15-24, 25-34 and 35-44 age groups (Table A17). It is important to note that this finding may change with increases in the 2020 and 2021 estimates following revision.

Figure 20. Crude rate per 100,000 people of drug overdose deaths involving amphetamine-type stimulants for the Australian population, by age, 2002-2021.



Note: Deaths where conditions related to alcohol or tobacco comprised the underlying cause of death are not captured here.

Causes of death data for 2020 and 2021 are not final and thus are subject to further revision. The symbol 'o' indicates revised estimates and 'x' preliminary estimates.

Rates for small numbers (less than or equal to 5 deaths) are suppressed.

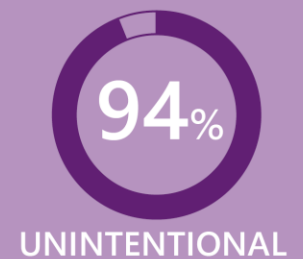
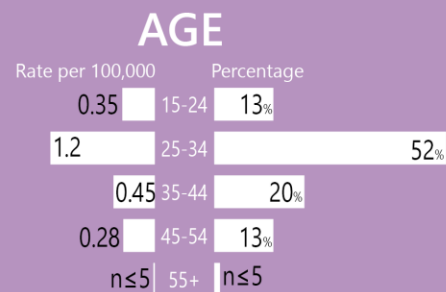
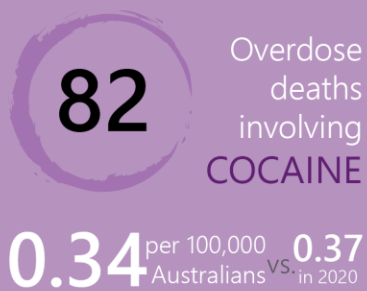
The rates for the 0-14 years age group are not presented due to sensitivity of the data.

Intent of Drug Overdose Deaths

In 2021, 90% (407 deaths) of drug overdose deaths involving amphetamine-type stimulants were unintentional overdoses; 8.6% (39 deaths) were determined as intentional. The percentage of drug overdose deaths involving amphetamine-type stimulants coded as unintentional has varied between 77% and 98% over the years.

8

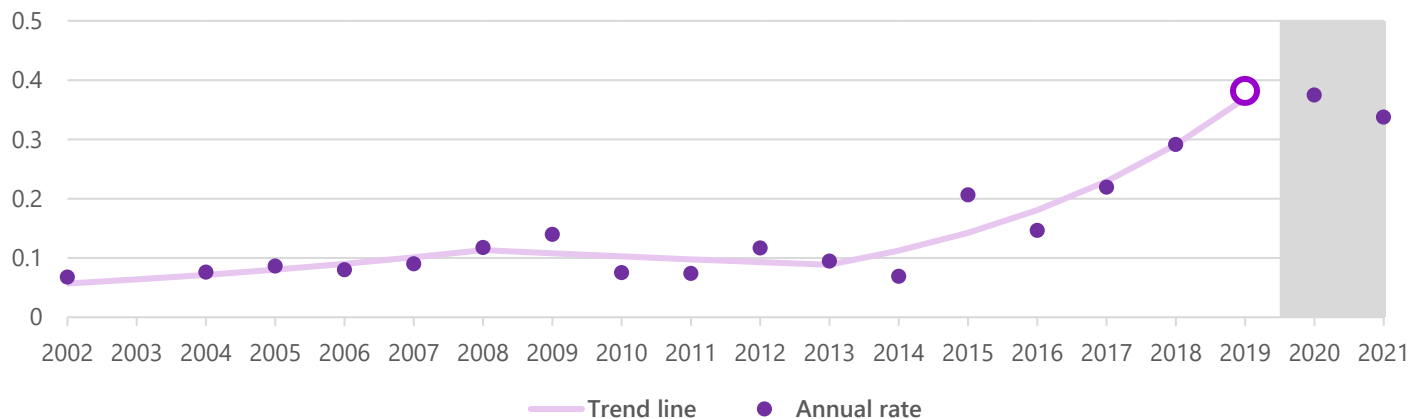
Drug Overdose Deaths Involving Cocaine

2021 Drug-induced
DEATHS

2002-2021

Age-standardised rate per 100,000 people of drug-induced deaths involving COCAINE, Australia 2002-2021

The highest rate was recorded in 2019, it reached 0.38 deaths per 100,000 Australians and is likely to increase with data revision.



Note: Deaths where conditions related to alcohol or tobacco comprised the underlying cause of death are not captured here. Causes of death data for 2020 and 2021 are not final and thus are subject to further revision (indicated by the grey area on the plot).

Overall Characteristics

There were 82 drug overdose deaths involving [cocaine](#) among Australians in 2021 (0.34 deaths per 100,000 people).

Trends since 2002

- From 2002 to 2019, the rate of drug overdose deaths involving cocaine increased over five-fold (0.068 versus 0.38 deaths per 100,000 people), increasing on average by 12% per year and reaching a historical high in 2019.
- The preliminary revised rate in 2021 was similar to the rate recorded in 2020 (0.34 versus 0.37 deaths per 100,000 people, respectively) (Table A10), however the 2020 and 2021 estimates are expected to increase when data are revised and finalised.

Sex

In 2021, [males](#) accounted for 83% of all cases of drug overdose deaths involving cocaine (68 deaths). This pattern has been consistent over the course of monitoring.

Trends since 2002

- Although the annual number of drug overdose deaths involving cocaine has remained low and the latest estimates are preliminary, the greatest increase in rates for males was observed between 2014 and 2019 (0.12 versus 0.63 deaths per 100,000 people, respectively).
- For females, the numbers have remained low, and rates cannot be calculated for reasons of confidentiality.

Age

In 2021, drug overdose deaths involving cocaine were most common in the [25-34 age group](#) (52%, 43 deaths) and this age group recorded the biggest increase in rate since 2011 (0.19 versus 1.2 deaths per 100,000 people, respectively).

The 35-44 age group accounted for 20% (16) of cocaine overdose deaths in 2021, while the 15-24 and 45-54 age groups accounted for 13% (11 deaths), each.

Trends since 2002

- Small numbers in each age group precluded study of change over time in age specific rates.

Intent of Drug Overdose Deaths

The vast majority of drug overdose deaths involving cocaine in 2021 were unintentional (94%, 77 deaths). This profile has been consistent over the course of monitoring.

9

Drug Induced Deaths by Jurisdiction of Usual Residence

The below sections describe the profile of drug-induced deaths for each jurisdiction in 2021 and the trend in drug-induced deaths from 2002 to 2021. We encourage caution when interpreting some of these figures given the small number of deaths for some drug types in less populous jurisdictions (e.g., Northern Territory, Tasmania). Data on the number and rate (crude and/or age-standardised) of deaths by sex, age group and drug type for each jurisdiction can be obtained from the publicly accessible [online interactive data visualisation](#).



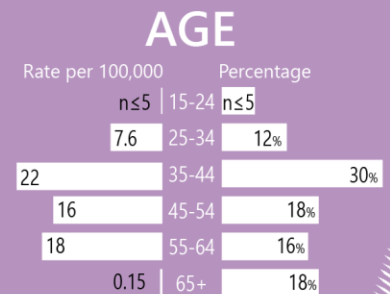
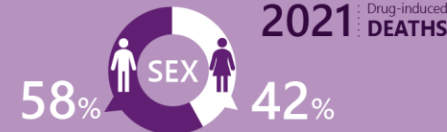
Australian Capital Territory



DRUG INVOLVEMENT

(deaths per 100,000 population)

6.1	Opioids
5.9	Antiepileptic, sedative-hypnotic and anti-parkinsonism drugs
3.9	Antidepressants
2.7	Amphetamine-type stimulants
2.6	Antipsychotics & neuroleptics
1.3	Non-opioid analgesics
(n≤5)	Cannabinoids
0	Cocaine



There were 50 registered overdose and other drug-induced deaths (excluding alcohol and tobacco) in the [Australian Capital Territory](#) in 2021, which is equivalent to 2.3% of all registered deaths in this jurisdiction.

The age-standardised rate of drug-induced deaths in the Australian Capital Territory has fluctuated over time ([Figure 21](#)). The preliminary age-standardised rate in 2021 was 11 deaths per 100,000 people and it was not statistically different from that in 2020 (12 deaths per 100,000 people) (Table A18). Estimates for 2020 and 2021 are subject to revision and may increase.

Sex

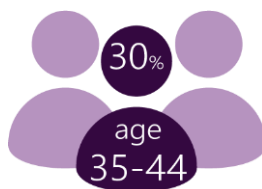


In 2021, males accounted for 58% (29 deaths) of drug-induced deaths.

The rate of drug-induced deaths was also higher among males than females (13 versus 9.0 deaths per 100,000 people, respectively). Analyses did not indicate a statistically significant change between 2020 and 2021 in the preliminary rates for males or females (Table A18).

Age

In 2021, drug-induced deaths were most common among the 35-44 age group (30%, 15 deaths). The rate was also highest in this age group (22 deaths per 100,000 people).



Analyses did not indicate a statistically significant change in the preliminary estimated rates between 2020 and 2021 for any of the age groups (Table A19).

Remoteness Area of Usual Residence

Over 99.8% of the population in the Australian Capital Territory resided in major city areas and the remaining resided in inner regional areas in 2021. For this reason, data on deaths by remoteness area are not presented.

Intent of Drug Overdose Deaths

In 2021, 96% (48 deaths) of drug-induced deaths were due to [overdose](#). Over three-fifths (62.5%, 30 deaths) of overdose deaths in 2021 were deemed unintentional; 37.5% (18 deaths) were deemed intentional. This profile has been broadly consistent over time.

Place of Occurrence



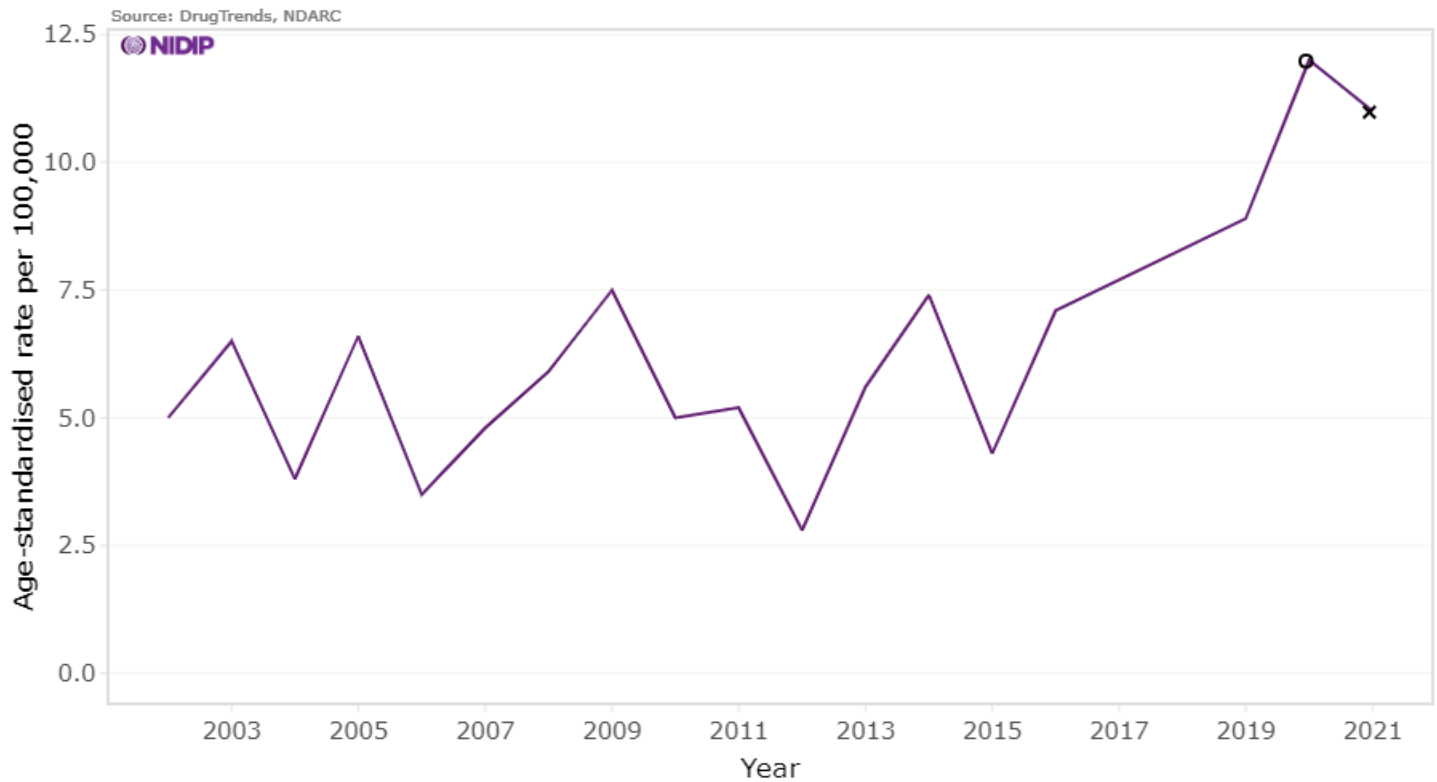
In 2021, the location of the incident underlying death was coded as home for the majority (84%, 42 deaths) of drug-induced deaths.

Drug Involvement

In the Australian Capital Territory, the three most common drug types involved in drug overdose deaths in 2021 were:

- **opioids** (6.1 deaths per 100,000 people, 28 deaths),
- **antiepileptic, sedative-hypnotic and anti-parkinsonism drugs** (5.9 deaths per 100,000 people, 27 deaths), and
- **antidepressants** (3.9 deaths per 100,000 people, 18 deaths).

Comparison of preliminary estimates for drug overdose deaths in the Australian Capital Territory did not identify a significant change in drug involvement from 2020 to 2021 (Table A21).

Figure 21. Age-standardised rate per 100,000 people of drug-induced deaths, Australian Capital Territory, 2002-2021

Note: Deaths where conditions related to alcohol or tobacco comprised the underlying cause of death are not captured here. Causes of death data for 2020 and 2021 are not final and thus are subject to further revision. The symbol 'o' indicates revised estimates and 'x' preliminary estimates.

New South Wales



DRUG INVOLVEMENT

(deaths per 100,000 population)

3.2	Opioids
2.9	Antiepileptic, sedative-hypnotic and anti-parkinsonism drugs
1.6	Amphetamine-type stimulants
1.6	Antidepressants
1.0	Antipsychotics & neuroleptics
0.61	Non-opioid analgesics
0.51	Cocaine
0.17	Cannabinoids



There were 507 registered overdose and other drug-induced deaths (excluding alcohol and tobacco) in [New South Wales](#) in 2021, which is equivalent to 0.90% of all registered deaths in this jurisdiction.

The rate increased from 4.9 in 2002 to 7.3 in 2019, peaking at 7.8 deaths per 100,000 people in 2017. The preliminary age-standardised rate of drug-induced deaths was 6.2 deaths per 100,000 people in 2021 ([Figure 22](#)). This rate was not statistically different from that in 2020 (6.8 deaths per 100,000 people), noting that estimates for 2020 to 2021 are subject to revision and may increase (Table A22).

Sex



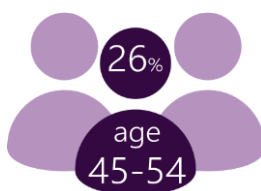
In 2021, males accounted for 65% (329 deaths) of drug-induced deaths. The rate of drug-induced deaths was also higher among males than females (7.8 versus 4.0 deaths per 100,000 people, respectively).

Analyses did not indicate a statistically significant change between 2020 and 2021 in the preliminary rates for males or females (Table A22).

Age

In 2021, drug-induced deaths were most common among in the 45-54 age group (26%, 132 deaths).

The rate was also highest in the 45-54 age group (13 deaths per 100,000 people), followed closely by the 85 and over age group and 35-44 (11 deaths per 100,000 people, each).



Analyses did not indicate a statistically significant difference in the estimated rates between 2020 and 2021 for any of the age groups (Table A23).

Remoteness Area of Usual Residence

The greatest proportion of drug-induced deaths and the highest rate in 2021 was recorded among people residing in major city areas (76%, 384 deaths, 6.2 deaths per 100,000 people).

The rate of drug-induced deaths in New South Wales has been consistently higher or similar for people residing in regional and remote areas as compared to major city areas or similar. Analyses did not indicate a statistically significant difference in the estimated rates between 2020 and 2021 (Table A24).

Intent of Drug Overdose Deaths

In 2021, 96% (486 deaths) of drug-induced deaths were due to [overdose](#). Unintentional drug overdose accounted for 76% (368 deaths) and intentional drug overdose for 23% (111 deaths) of these deaths in 2021. This profile was broadly consistent over time. Comparison of preliminary rates did not suggest a significant change between 2020 and 2021 (Table A25).

Place of Occurrence



In 2021, the location of the incident underlying death was coded as home for the majority (67%, 341 deaths) of drug overdose deaths in New South Wales.

Drug Involvement

In New South Wales, the three most common drug types involved in drug overdose deaths in 2021 were:

- **opioids** (3.2 deaths per 100,000 people, 261 deaths),
- **antiepileptic, sedative-hypnotic and anti-parkinsonism drugs** (2.9 deaths per 100,000 people, 239 deaths), and

- **antidepressants** (1.6 deaths per 100,000 people, 134 deaths) ([Figure 23](#)).

Comparison of preliminary estimates of drug overdose deaths in New South Wales indicated significantly lower 2020 rates as compared to 2020 for overdose deaths involving opioids (by 23%) and amphetamine-type stimulants (by 31%), noting that estimates for 2020 to 2021 are subject to revision and may increase (Table A26).

Figure 22. Age-standardised rate per 100,000 people of drug-induced deaths, by sex, New South Wales, 2002-2021.

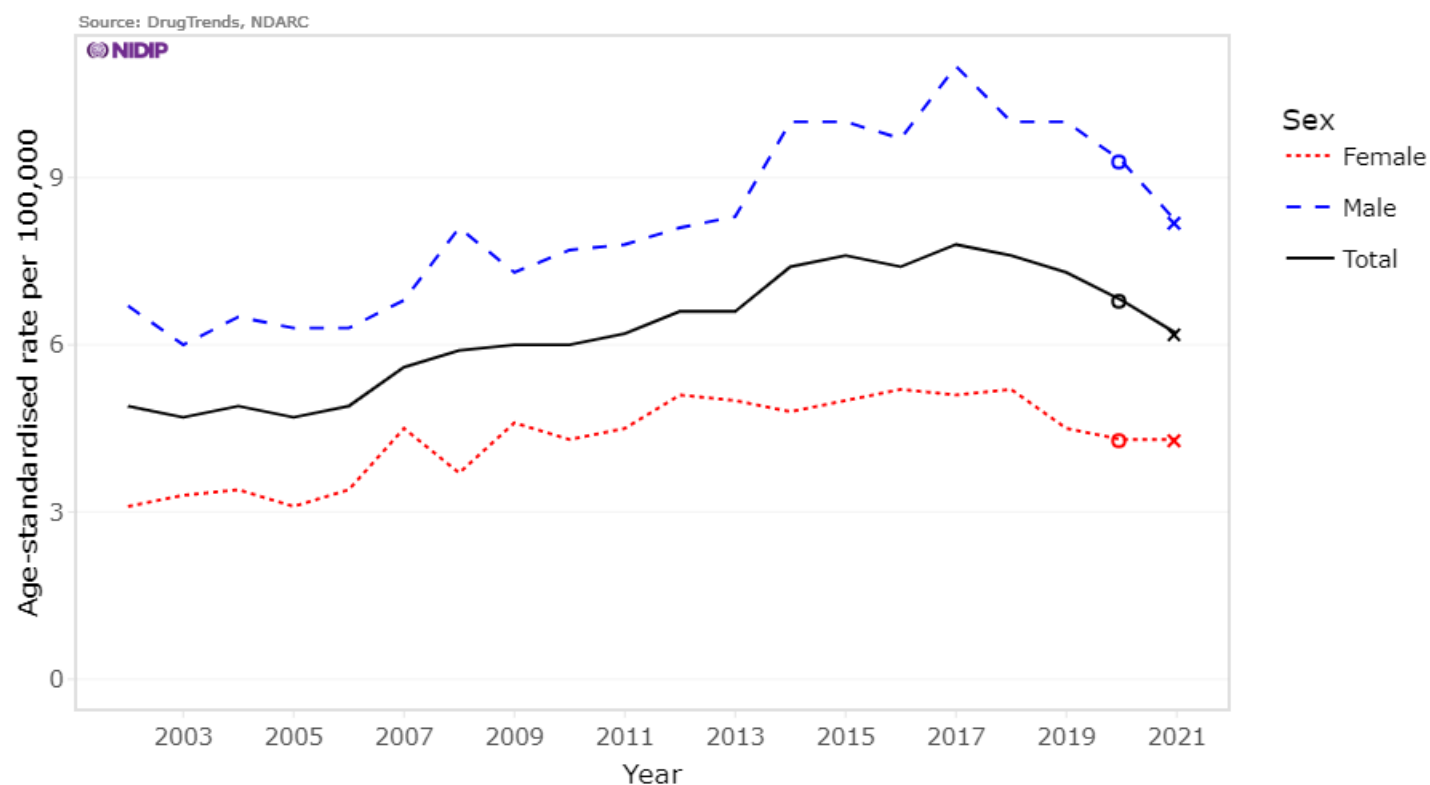
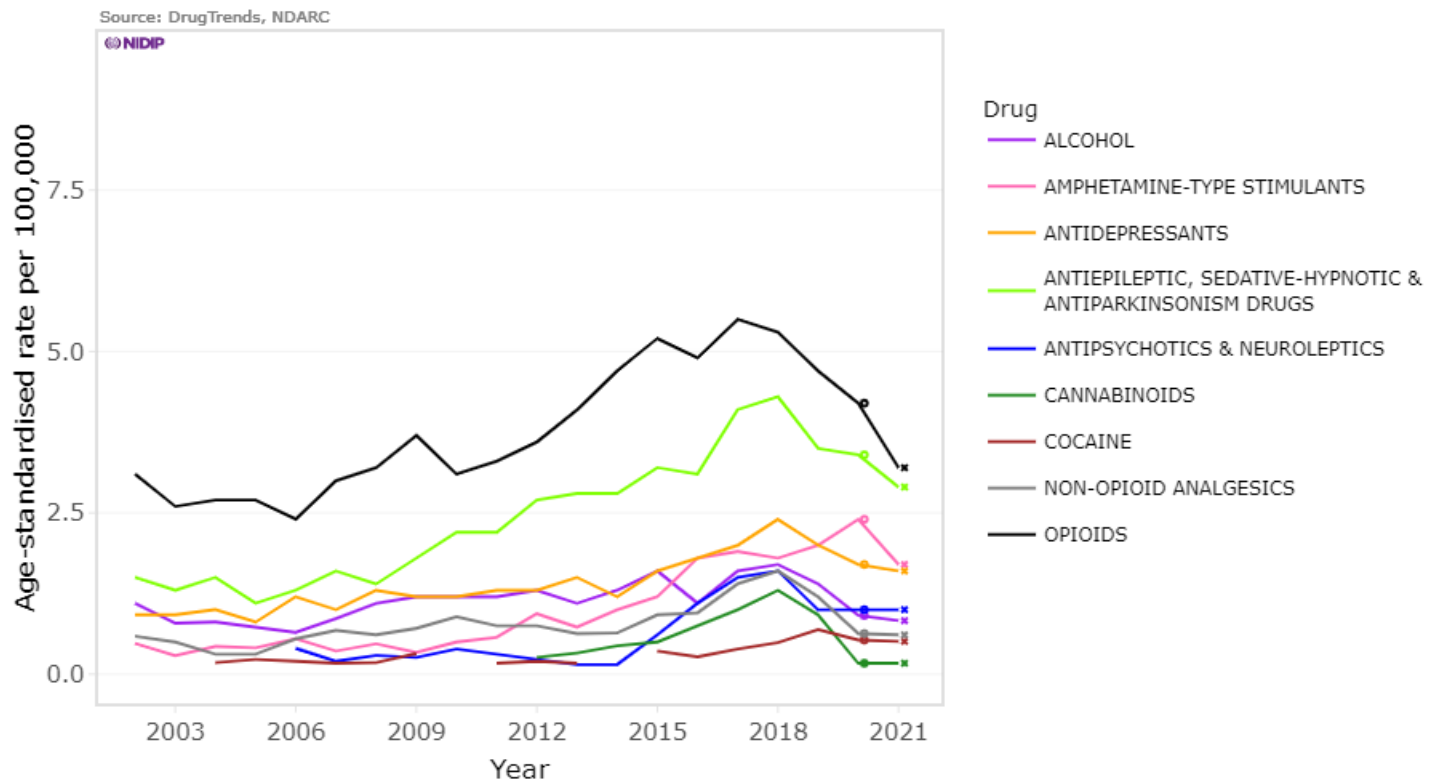


Figure 23. Age-standardised rate per 100,000 people of drug overdose deaths, by drug class, New South Wales, 2002-2021.



Note: Deaths where conditions related to alcohol or tobacco comprised the underlying cause of death are not captured here.

Causes of death data for 2020 and 2021 are not final and thus are subject to further revision. The symbol 'o' indicates revised estimates and 'x' preliminary estimates. Age-standardised rates were not calculated if the number of deaths was less than or equal to 10 (please refer to our [methods document](#) for details). Suppressed data are visible as gaps in the data series.

Northern Territory



16
Drug-induced deaths
in the
Northern Territory

7.4
deaths
per 100,000
population



2021 Drug-induced
DEATHS

63%
Unintentional
drug overdose

There were 16 registered overdose and other drug-induced deaths (excluding alcohol and tobacco) in the [Northern Territory](#) in 2021, which is equivalent to 1.3% of all registered deaths in this jurisdiction.

The preliminary age-standardised rate of drug-induced deaths was 7.4 deaths per 100,000 people in 2021 ([Figure 24](#)). This rate was not statistically different from that in 2020 (5.7 deaths per 100,000 people), noting that estimates for 2020 and 2021 are subject to revision and may increase (Table A28).

Sex



In 2021, males accounted for 56% (23 deaths) of drug-induced deaths.

Age

Due to the small number of drug-induced deaths in the Northern Territory, data on age could not be reported.

Remoteness Area of Usual Residence

There are no major city or inner regional areas in the Northern Territory. This factor, coupled with the small number of deaths, precluded disaggregation because of issues of confidentiality.

Intent of Drug Overdose Deaths

In 2021, 88% (14 deaths) of drug-induced deaths in the Northern Territory were due to overdose, of which 11 deaths were deemed unintentional.

Place of Occurrence

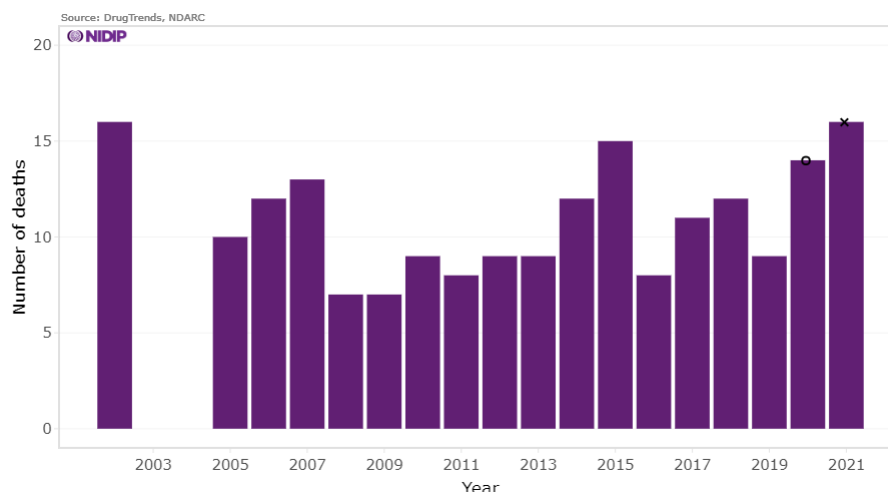


In 2021, the location of the incident underlying death was coded as home for half (50%, 8 deaths) of drug-induced deaths.

Drug Involvement

In the Northern Territory, the small number of drug-induced death did not allow for further disaggregation by drug involvement.

Figure 24. Number of drug-induced deaths, Northern Territory, 2002-2021



Note: Deaths where conditions related to alcohol or tobacco comprised the underlying cause of death are not captured here.

Causes of death data for 2020 and 2021 are not final and thus are subject to further revision. The symbol 'o' indicates revised estimates and 'x' preliminary estimates. Numbers less or equal to 5 (i.e., data in the years 2003 and 2004) are not shown.

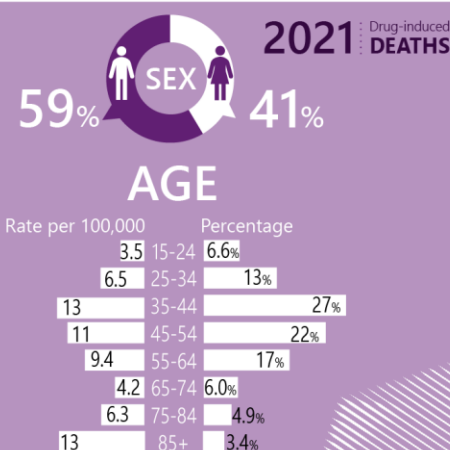
Queensland



DRUG INVOLVEMENT

(deaths per 100,000 population)

3.8	Opioids
3.7	Antiepileptic, sedative-hypnotic and anti-parkinsonism drugs
2.5	Antidepressants
1.4	Amphetamine-type stimulants
1.4	Antipsychotics & neuroleptics
0.81	Non-opioid analgesics
0.27	Cannabinoids
0.25	Cocaine



There were 350 registered overdose and other drug-induced deaths (excluding alcohol and tobacco) in [Queensland](#) in 2021, which is equivalent to 1.0% of all registered deaths in this jurisdiction.

The population rate increased from 4.4 in 2002 to 7.4 in 2019 but peaked at 8.5 deaths per 100,000 people in 2015. The preliminary age-standardised rate of drug-induced deaths was 6.7 deaths per 100,000 people in 2021 ([Figure 25](#)). This rate was not statistically different from the estimated rate in 2020 (7.1 deaths per 100,000 people), noting that estimates for 2020 and 2021 are subject to revision and may increase (Table A28).

Sex

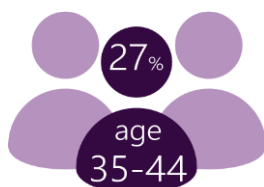


In 2021, males accounted for 59% (205 deaths) of drug-induced deaths. The rate of drug-induced deaths was also higher among males than females (8.2 versus 5.2 deaths per 100,000 people, respectively). Analyses did not indicate a statistically significant difference between 2020 and 2021 in the estimated rates for males or females (Table A28).

Age

In 2021, drug-induced deaths were most common among the 35-44 age group (27%, 93 deaths).

The rate was also highest in the 35-44 age group (13 deaths per 100,000 people), and in



the 85 and over age group (13 deaths per 100,000 people).

Analyses did not indicate a statistically significant difference in the estimated rates between 2020 and 2021 for any of the age groups (Table A29).

Remoteness Area of Usual Residence

The greatest proportion of drug-induced deaths in 2021 occurred among people residing in major city areas (67%, 235 deaths), and the highest rate was also observed among people in major city areas (7.0 deaths per 100,000 people), followed by inner regional areas (6.5 deaths per 100,000 people).

There was no clear historical trend observed in the rate of drug-induced deaths for major city versus regional and remote areas of Queensland. The 2021 rates were comparable to the rates observed in 2020 (Table A30).

Intent of Drug Overdose Deaths

In 2021, 97% (339 deaths) of drug-induced deaths were due to [overdose](#). Unintentional drug overdose accounted for 60% (203 deaths) and intentional drug overdose for 35% (120 deaths) of these deaths in 2021. This profile was broadly consistent over time. Comparison of preliminary rates did not suggest a significant change between 2020 and 2021 (Table A31).

Place of Occurrence



In 2021, the location of the incident underlying death was coded as home for the majority (77%, 270 deaths) of drug-induced deaths.

Drug Involvement

In Queensland, the three most common drug types involved in drug overdose deaths in 2021 were:

- **opioids** (3.8 deaths per 100,000 people, 193 deaths),
- **antiepileptic, sedative-hypnotic and anti-parkinsonism drugs** (3.7 deaths per 100,000 people, 191 deaths),

- **antidepressants** (2.5 deaths per 100,000 people, 131 deaths) (Figure 26).

Comparison of estimated rates of drug overdose deaths in Queensland did not identify a significant change in rates of drug involvement between 2020 and 2021, noting that these are subject to revision and may increase (Table A32).

Figure 25. Age-standardised rate per 100,000 people of drug-induced deaths, by sex, Queensland, 2002-2021.

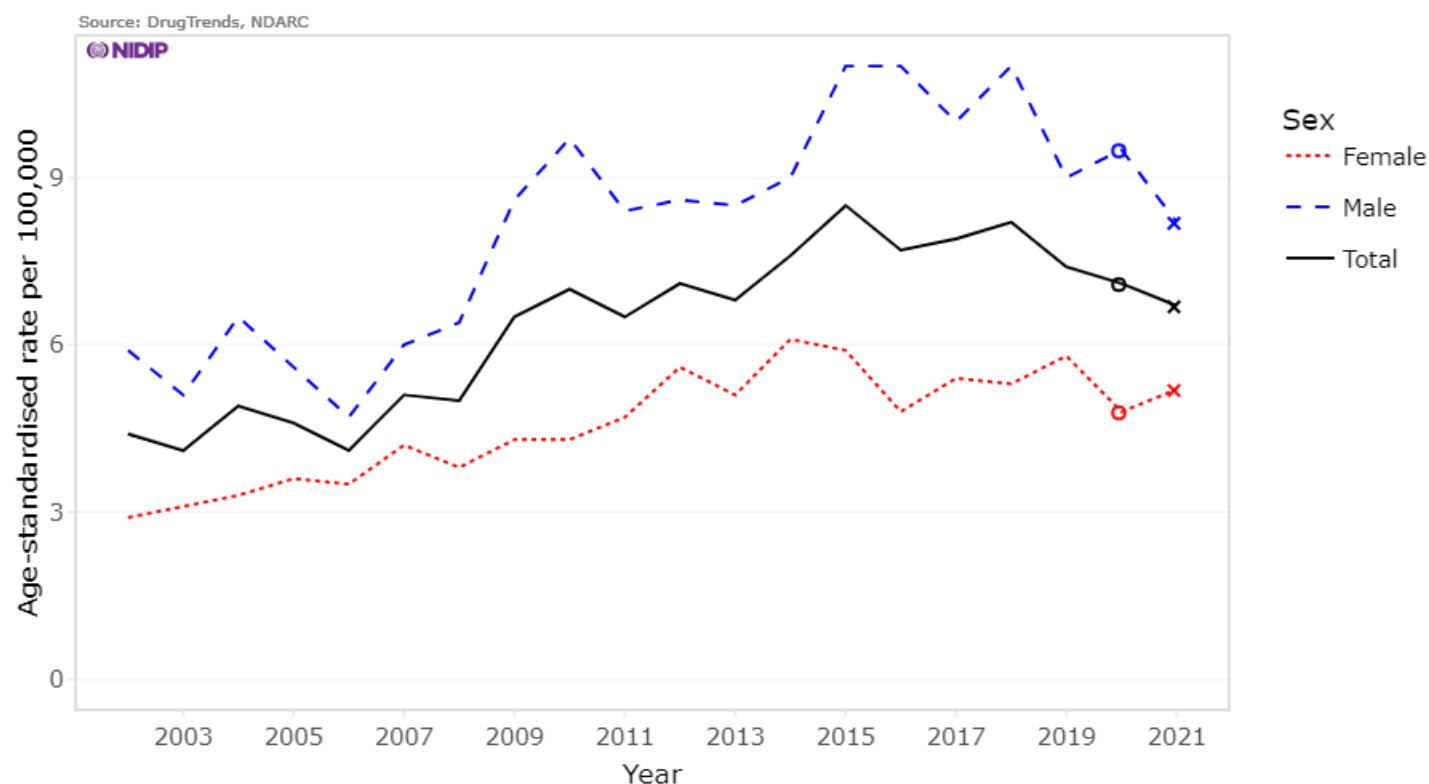
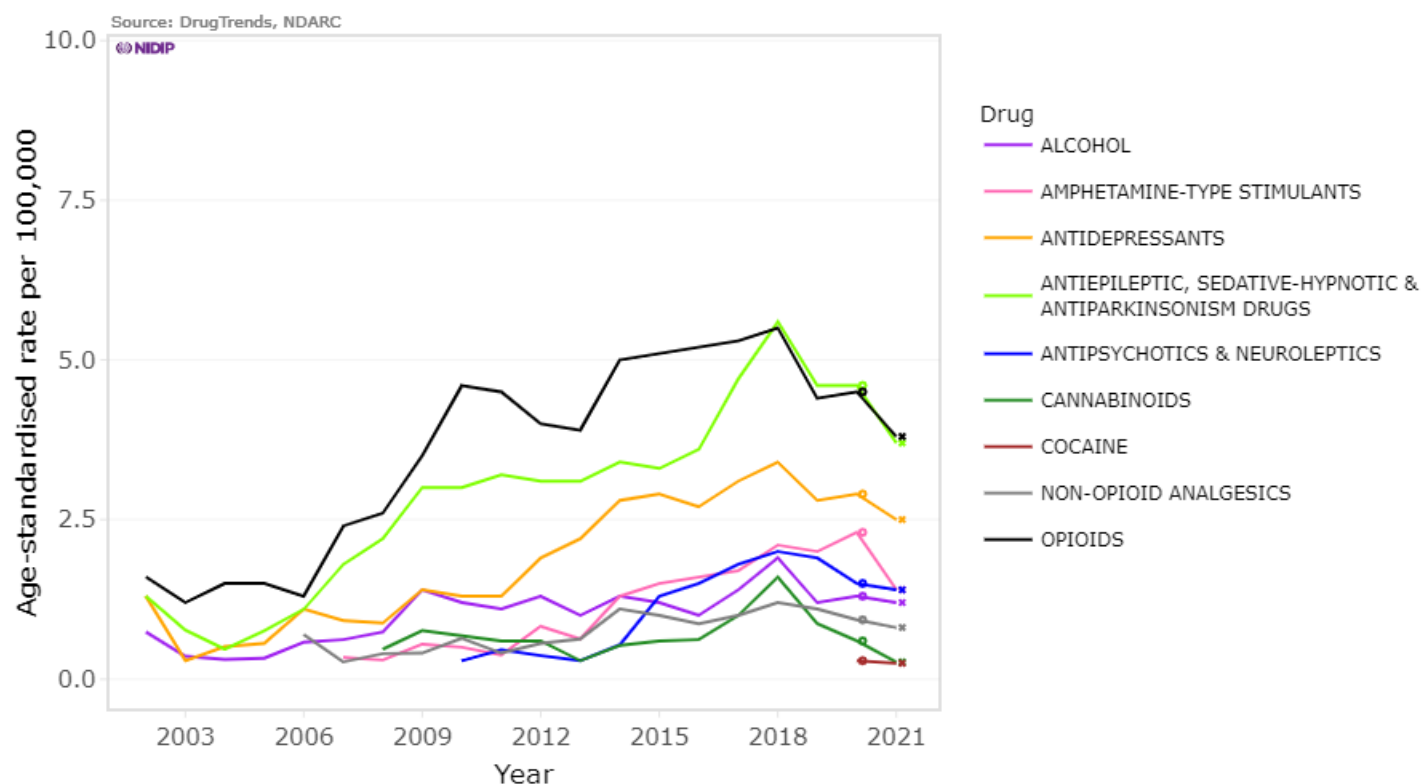


Figure 26. Age-standardised rate per 100,000 people of drug overdose deaths, by drug class, Queensland, 2002-2021.

Note: Deaths where conditions related to alcohol or tobacco comprised the underlying cause of death are not captured here.

Causes of death data for 2020 and 2021 are not final and thus are subject to further revision. The symbol 'o' indicates revised estimates and 'x' preliminary estimates.

Age-standardised rates were not calculated if the number of deaths was less than or equal to 10 (please refer to our [methods document](#) for details). Suppressed data are visible as gaps in the data series.

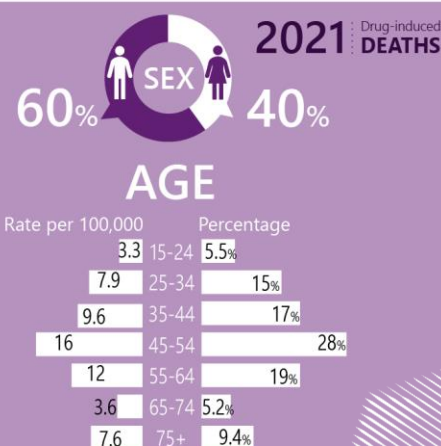
South Australia



DRUG INVOLVEMENT

(deaths per 100,000 population)

3.6	Opioids
2.1	Antiepileptic, sedative-hypnotic and anti-parkinsonism drugs
1.3	Amphetamine-type stimulants
0.79	Antidepressants
(n≤10)	Antipsychotics & neuroleptics
(n≤10)	Non-opioid analgesics
(n≤10)	Cocaine
(n≤5)	Cannabinoids



There were 128 registered overdose and other drug-induced deaths (excluding alcohol and tobacco) in [South Australia](#) in 2021, which is equivalent to 0.88% of all registered deaths in this jurisdiction.

The rate fluctuated between 2002 and 2019 without any particular trend. The highest rate was observed in 2017 reaching 8.3 deaths per 100,000 people. The preliminary age-standardised rate of drug-induced deaths in 2021 was 7.0 deaths per 100,000 people ([Figure 27](#)). This rate was not statistically different from the estimated rate in 2020 (7.0 deaths per 100,000 people), noting that estimates for 2019 to 2021 are subject to revision and may increase (Table A33).

Sex

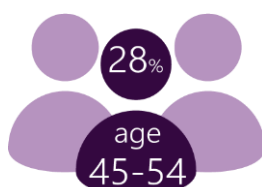


In 2021, males accounted for 60% (77 deaths) of drug-induced deaths. The rate of drug-induced deaths was also higher among males than females (8.5 versus 5.5 deaths per 100,000 people, respectively). Analyses did not indicate a statistically significant difference between 2020 and 2021 in the estimated rates for males or females (Table A33).

Age

In 2021, drug-induced deaths were most common among the 45-54 age group (28%, 36 deaths).

The age specific population rate was also highest in the 45-54 age group (16 deaths per 100,000 people).



Analyses did not indicate a statistically significant difference in the estimated rates between 2020 and 2021 for any of the age groups (Table A34).

Remoteness Area of Usual Residence

The greatest proportion of drug-induced deaths in 2021 occurred among people residing in major city areas (73%, 93 deaths), but the highest rate was observed among people in inner regional areas (8.4 deaths per 100,000 people).

South Australia has shown a pattern since 2009 of consistently higher rates of drug-induced deaths in regional and remote versus major city areas. However, for the first time in 2021, the rate in regional and remote areas was higher than in major city areas (7.1 and 6.8 deaths per 100,000 people, respectively) (Table A35).

Intent of Drug Overdose Deaths

In 2021, 95% (122 deaths) of drug-induced deaths were due to [overdose](#). Unintentional drug overdose accounted for 56% (68 deaths) and intentional drug overdose for 30% (36 deaths) of these deaths in 2021. This has fluctuated over time. Comparison of estimated rates did not suggest a significant change between 2020 and 2021 (Table A36).

Place of Occurrence



In 2021, the location of the incident underlying death was coded as home for the majority (71%, 91 deaths) of drug overdose deaths.

Drug Involvement

In South Australia, the three most common drug types involved in drug overdose deaths in 2021 were:

- **opioids** (3.5 deaths per 100,000 people, 65 deaths,
- **antiepileptic, sedative-hypnotic and anti-parkinsonism drugs** (2.1 deaths per 100,000 people, 38 deaths),

- **amphetamine-type stimulants** (1.3 deaths per 100,000 people, 22 deaths) ([Figure 28](#)).

Comparison of estimated rates of drug overdose deaths in South Australia identified a significantly lower rate for deaths involving antidepressants in 2021 as compared to 2020 (0.79 versus 1.8 deaths per 100,000 people), noting that estimates for 2020 to 2021 are subject to revision and may increase (Table A37).

Figure 27. Age-standardised rate per 100,000 people of drug-induced deaths, by sex, South Australia, 2002-2021.

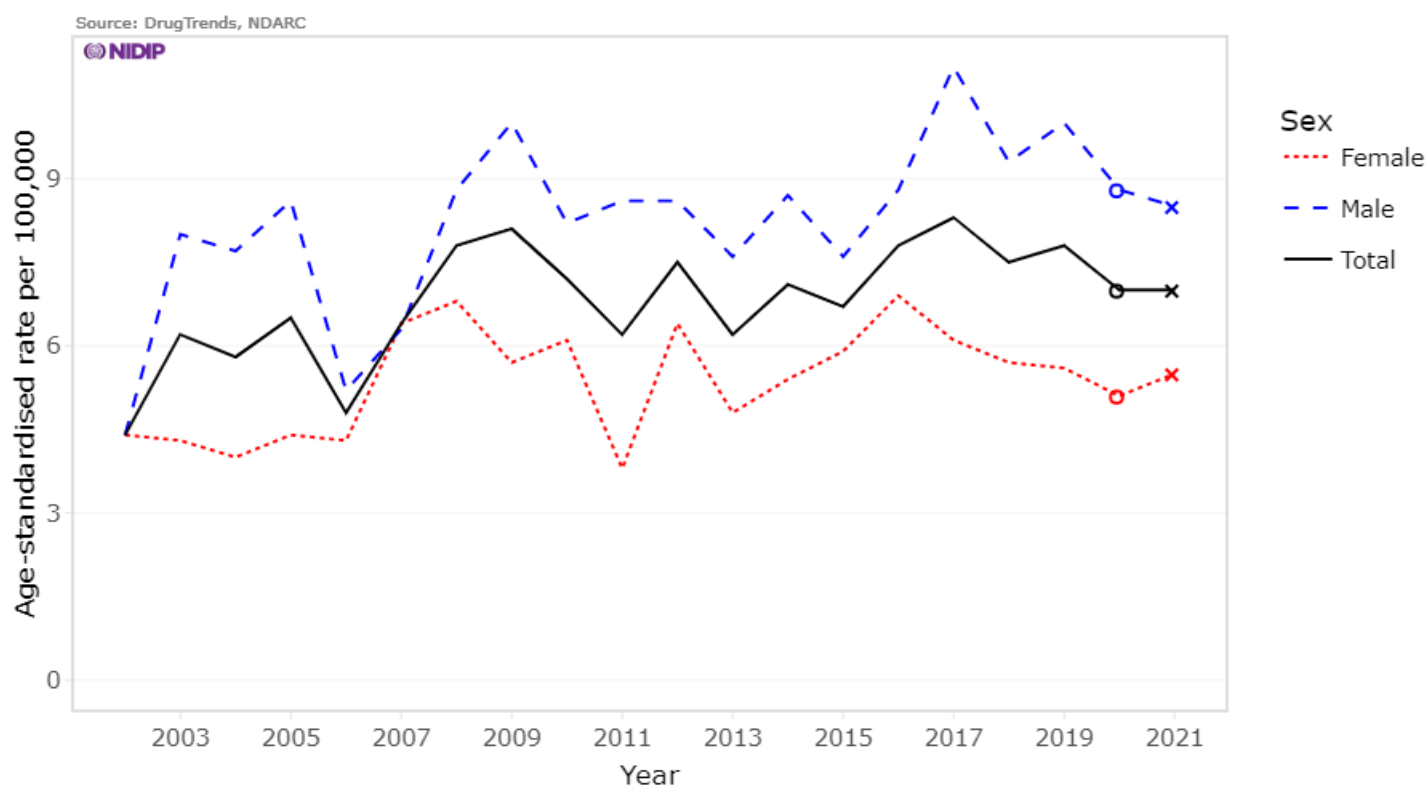
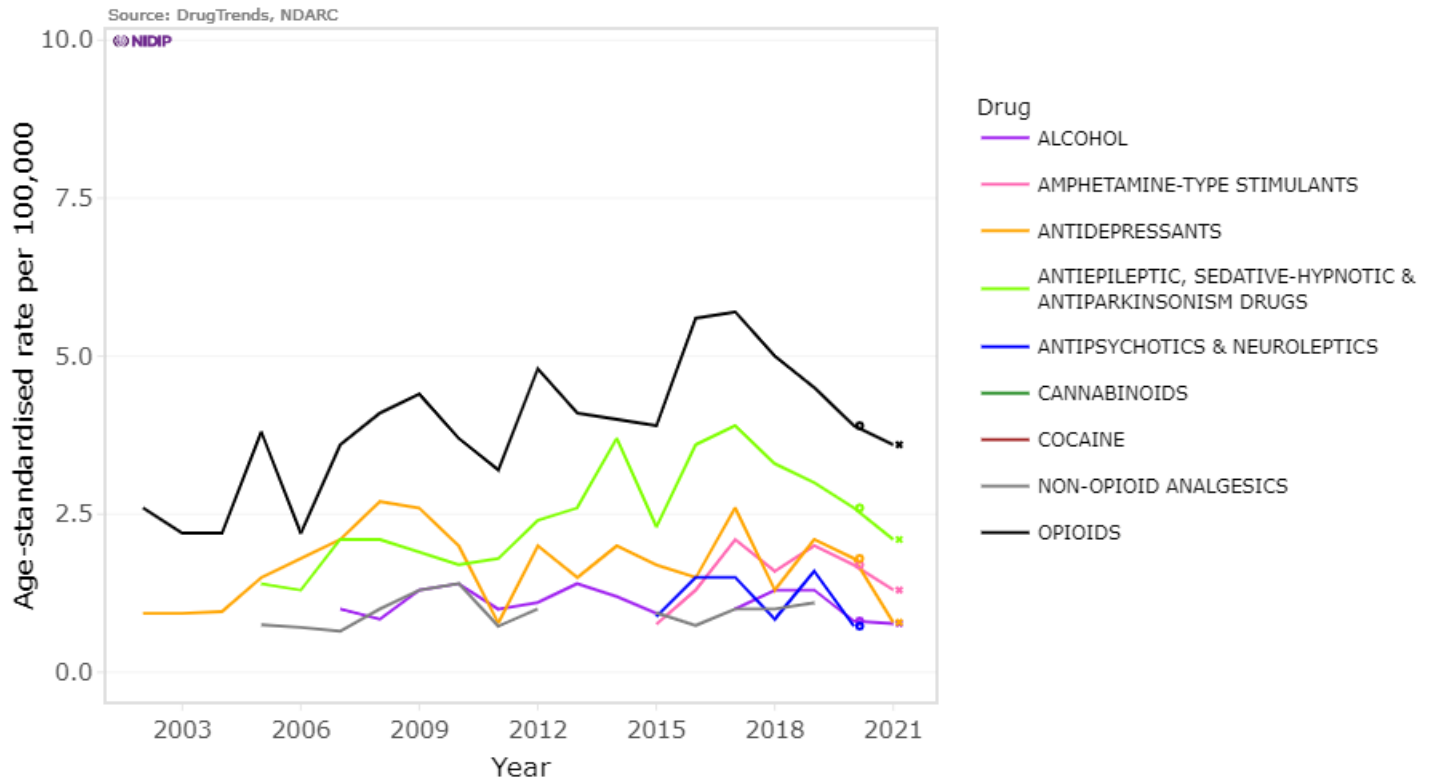


Figure 28. Age-standardised rate per 100,000 people of drug overdose deaths, by drug class, South Australia, 2002-2021.

Note: Deaths where conditions related to alcohol or tobacco comprised the underlying cause of death are not captured here.

Causes of death data for 2020 and 2021 are not final and thus are subject to further revision. The symbol 'o' indicates revised estimates and 'x' preliminary estimates.

Age-standardised rates were not calculated if the number of deaths was less than or equal to 10 (please refer to our [methods document](#) for details). Suppressed data are visible as gaps in the data series.

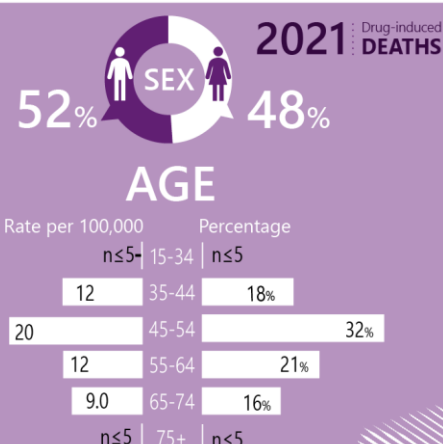
Tasmania



DRUG INVOLVEMENT

(deaths per 100,000 population)

4.5	Antidepressants
3.8	Opioids
3.7	Antiepileptic, sedative-hypnotic and anti-parkinsonism drugs
2.3	Antipsychotics & neuroleptics
(n≤10)	Amphetamine-type stimulants
(n≤5)	Non-opioid analgesics
(n≤5)	Cannabinoids
0	Cocaine



There were 44 registered overdose and other drug-induced deaths (excluding alcohol and tobacco) in [Tasmania](#) in 2021, which is equivalent to 0.92% of all registered deaths in this jurisdiction.

The rate fluctuated between 2002 and 2019 without any particular trend. The highest rate was observed in 2016, reaching 10 deaths per 100,000 people. The preliminary age-standardised rate of drug-induced deaths in 2021 was 7.5 deaths per 100,000 people ([Figure 29](#)). This rate was not statistically different from the preliminary estimated rate in 2020 (6.5 deaths per 100,000 people), noting that estimates for 2020 and 2021 are subject to revision and may increase (Table A38).

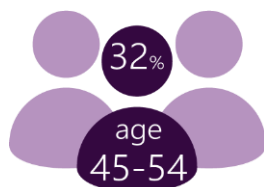
Sex



In 2021, males accounted for 52% (23 deaths) of drug-induced deaths. The rate of drug-induced deaths was also higher among males than females (8.4 versus 6.5 deaths per 100,000 people, respectively). Analyses did not indicate a statistically significant difference between 2020 and 2021 in the preliminary rates for males or females (Table A38).

Age

In 2021, drug-induced deaths were most common among people aged 45-54 (32%, 14 deaths). The rate was also highest in the 45-54 age group (20 deaths per 100,000 people).



Analyses did not indicate statistically significant differences in the estimated rates between 2020 and 2021 for any of the age groups (Table A39).

Remoteness Area of Usual Residence

The greatest proportion of drug-induced deaths in 2021 occurred among people residing in inner regional areas (55%, 24 deaths), but the highest rate was recorded among people in outer regional areas (11 deaths per 100,000 people), noting there are no major city areas in Tasmania.

Intent of Drug Overdose Deaths

In 2021, 98% (43 deaths) of drug-induced deaths were due to [overdose](#). Unintentional drug overdose accounted for 42% (18 deaths) and intentional drug overdose for 47% (20 deaths) of these deaths in 2021. Comparison of preliminary rates did not suggest a significant change between 2020 and 2021 (Table A40).

Place of Occurrence



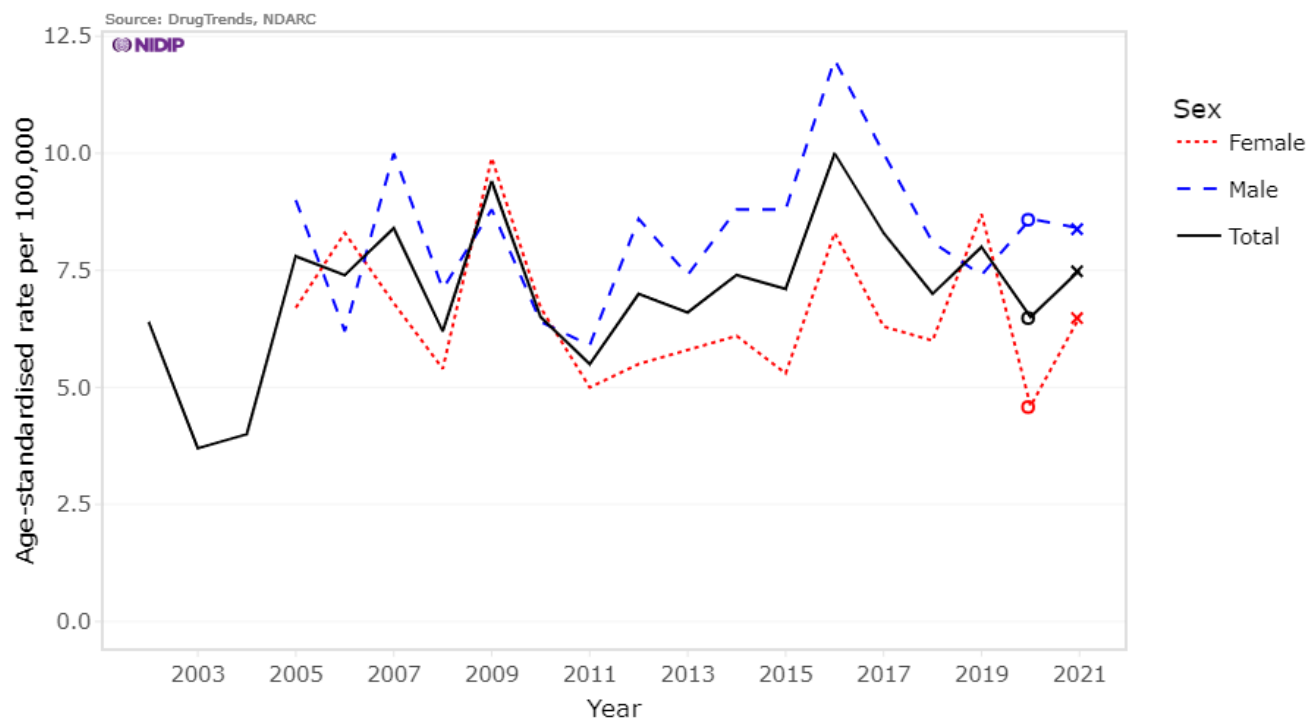
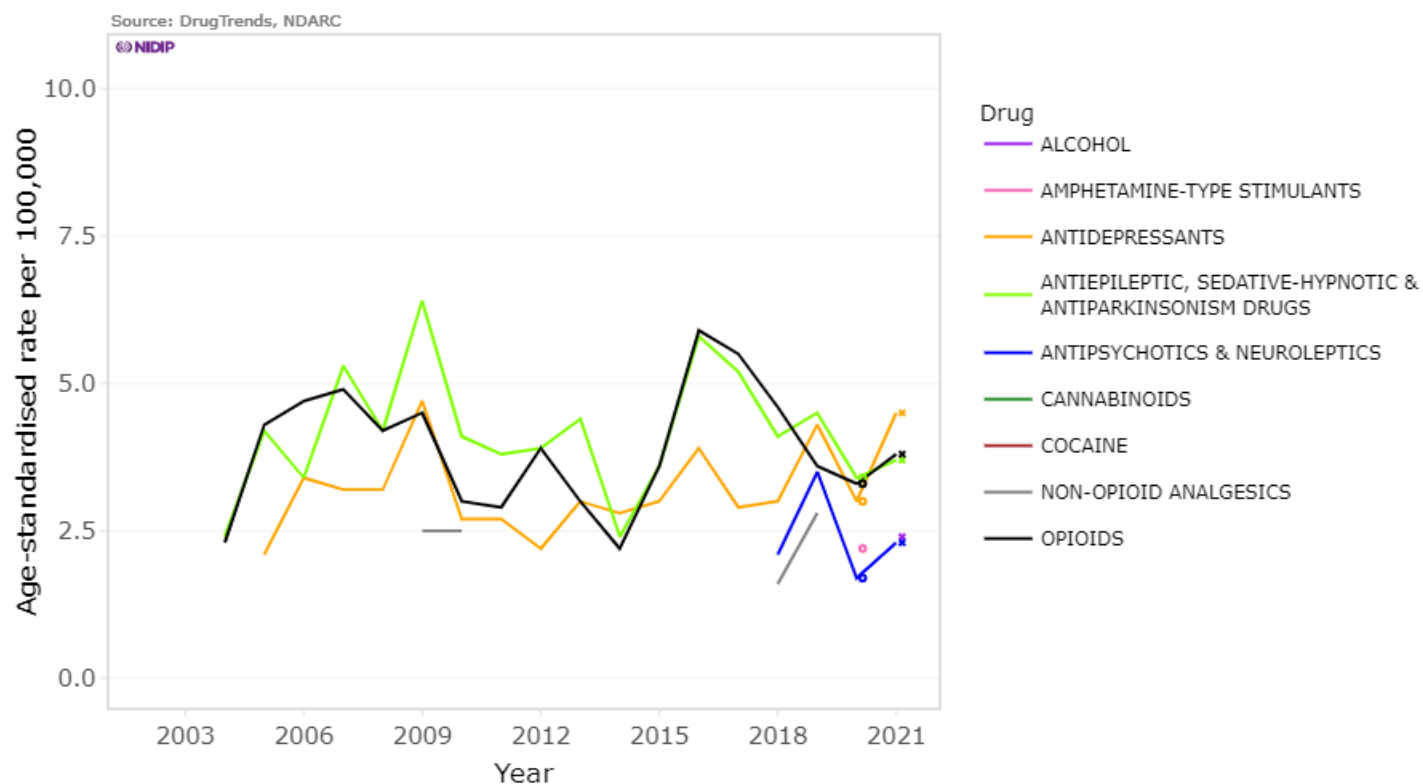
In 2021, the location of the incident underlying death was coded as home for the majority (82%, 36 deaths) of drug overdose deaths.

Drug Involvement

In Tasmania, the three most common drug types involved in drug overdose deaths in 2021 were:

- **antidepressants** (4.5 deaths per 100,000 people, 26 deaths),
- **opioids** (3.8 deaths per 100,000 people, 22 deaths), and
- **antiepileptic, sedative-hypnotic and anti-parkinsonism drugs** (3.7 deaths per 100,000 people, 22 deaths) ([Figure 30](#)).

Comparison of estimated rates of drug overdose deaths in Tasmania did not identify a significant change in rates of drug involvement between 2020 to 2021 (Table A41).

Figure 29. Age-standardised rate per 100,000 people of drug-induced deaths, by sex, Tasmania, 2002-2021.**Figure 30.** Age-standardised rate per 100,000 people of drug overdose deaths, by drug class, Tasmania, 2002-2021.

Note: Deaths where conditions related to alcohol or tobacco comprised the underlying cause of death are not captured here.

Causes of death data for 2020 and 2021 are not final and thus are subject to further revision. The symbol 'o' indicates revised estimates and 'x' preliminary estimates.

Age-standardised rates were not calculated if the number of deaths was less than or equal to 10 (please refer to our [methods document](#) for details). Suppressed data are visible as gaps in the data series.

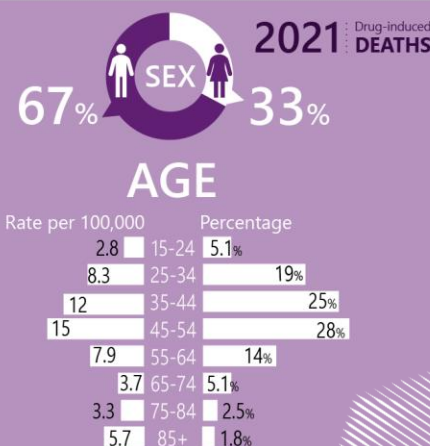
Victoria



DRUG INVOLVEMENT

(deaths per 100,000 population)

4.4	Opioids
4.3	Antiepileptic, sedative-hypnotic and anti-parkinsonism drugs
2.2	Amphetamine-type stimulants
1.8	Antidepressants
1.6	Antipsychotics & neuroleptics
0.66	Non-opioid analgesics
0.44	Cannabinoids
0.35	Cocaine



There were 435 registered overdose and other drug-induced deaths (excluding alcohol and tobacco) in [Victoria](#) in 2021, which is equivalent to 1.0% of all registered deaths in this jurisdiction.

The rate fluctuated between 2002 and 2019, with a peak of 8.5 deaths per 100,000 people in 2017. The preliminary age-standardised rate of drug-induced deaths was 6.6 deaths per 100,000 people in 2021 ([Figure 31](#)). This rate was lower by 17% than the estimated rate in 2020 (8.0 deaths per 100,000 people), noting that estimates for 2020 and 2021 are subject to revision and may increase (Table A42).

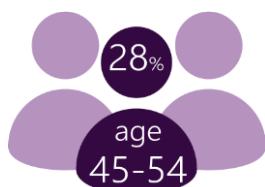
Sex



In 2021, males accounted for 67% (292 deaths) of drug-induced deaths. The rate of drug-induced deaths was also higher among males than females (9.2 versus 4.2 deaths per 100,000 people, respectively). The rate among females was lower by 26% compared to 2020 (5.7 deaths per 100,000 people) while the male rate was stable (Table A42).

Age

In 2021, drug-induced deaths were most common among the 45-54 age group (28%, 120 deaths).



The rate was also highest in the 45-54 age group (15 deaths per 100,000 people), since the 35-44 age groups recorded a significant 24% decrease in

the rate of drug-induced deaths from 2020 (16 versus 12 deaths per 100,000 people, respectively) (Table A43).

Remoteness Area of Usual Residence

The greatest proportion of drug-induced deaths in 2021 occurred among people residing in major city areas (79%, 343 deaths), and the highest rate was also observed among people in major city areas (6.7 deaths per 100,000 people).

Victoria has shown a pattern of consistently higher or similar rate in regional and remote versus major city areas since 2009, however 2021 was the first year that the rate of drug-induced deaths in regional and remote areas (6.0 deaths per 100,000 people) declined below the rate in major city areas. Both rates were lower compared to the rates in 2020 but the difference was not statistically significant (Table A44).

Intent of Drug Overdose Deaths

In 2021, 98% (427 deaths) of drug-induced deaths were due to [overdose](#). Unintentional drug overdose accounted for 74% (314 deaths) and intentional drug overdose for 24% (102 deaths) of these deaths in 2021. The estimated rate of unintentional overdose deaths was lower in 2021 compared to 2020 (4.9 versus 6.1 deaths per 100,000 people, respectively), while the rate of intentional overdose deaths remained stable (Table A45).

Place of Occurrence



In 2021, the location of the incident underlying death was coded as home for the majority (76%, 332 deaths) of drug-induced deaths.

Drug Involvement

In Victoria, the three most common drug types involved in drug overdose deaths in 2021 were:

- **opioids** (4.4 deaths per 100,000 people, 283 deaths),
- **antiepileptic, sedative-hypnotic and anti-parkinsonism drugs** (4.3 deaths per 100,000 people, 279 deaths),
- **amphetamine-type stimulants** (2.2 deaths per 100,000 people, 142 deaths) ([Figure 32](#)).

Comparison of estimated rates of drug overdose deaths for Victoria identified lower rates in 2020 as compared to 2021 in overdose deaths involving:

- antidepressants (1.8 versus 2.7 deaths per 100,000 people),
- opioids (4.4 versus 5.4 deaths per 100,000 people), and
- antiepileptic, sedative-hypnotic and anti-parkinsonism drugs (4.3 versus 5.1 deaths per 100,000 people), noting that estimates for 2020 to 2021 are subject to revision and may increase (Table A46).

Figure 31. Age-standardised rate per 100,000 people of drug-induced deaths, by sex, Victoria, 2002-2021.

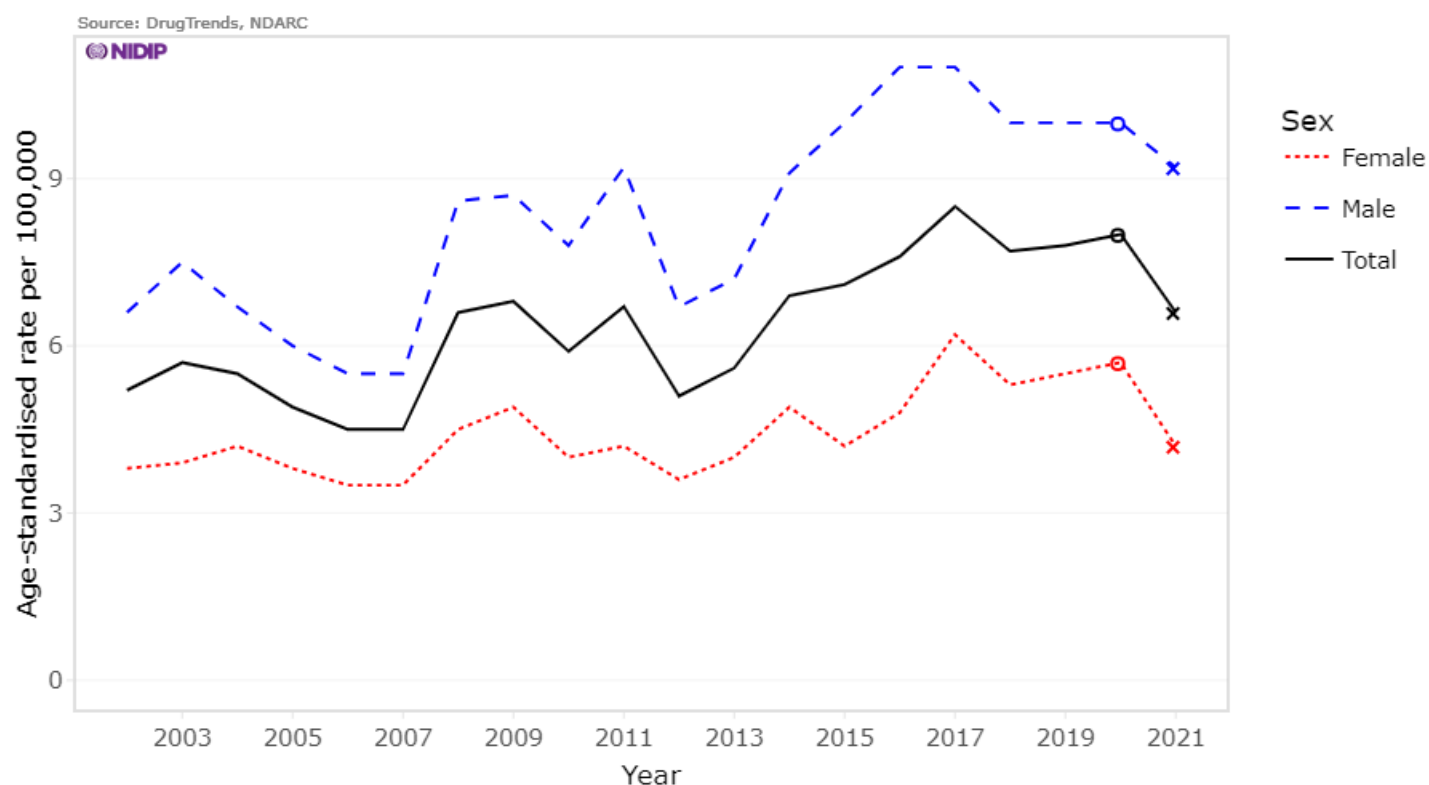
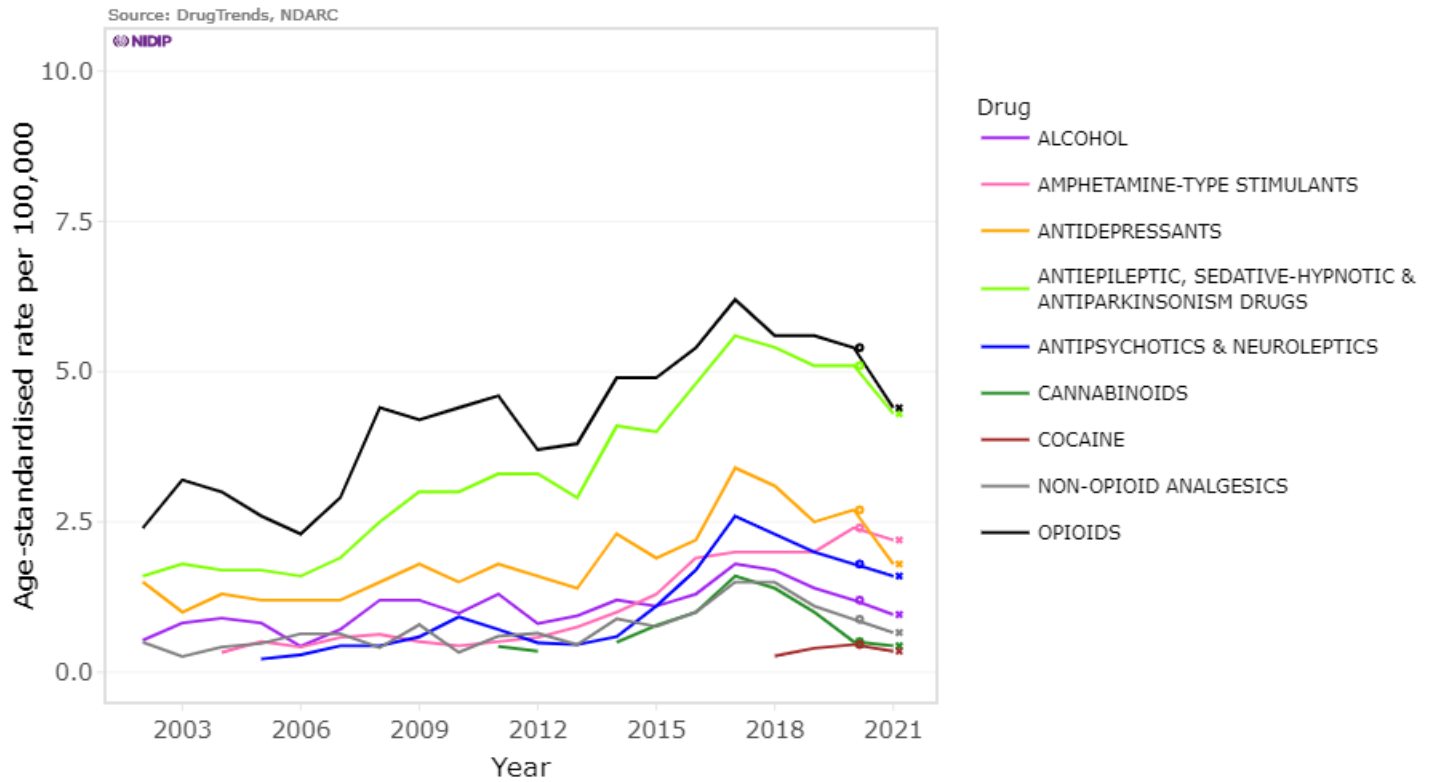


Figure 32. Age-standardised rate per 100,000 people of drug overdose deaths, by drug class, Victoria, 2002-2021.

Note: Deaths where conditions related to alcohol or tobacco comprised the underlying cause of death are not captured here.

Causes of death data for 2020 and 2021 are not final and thus are subject to further revision. The symbol 'o' indicates revised estimates and 'x' preliminary estimates. Age-standardised rates were not calculated if the number of deaths was less than or equal to 10 (please refer to our [methods document](#) for details). Suppressed data are visible as gaps in the data series.

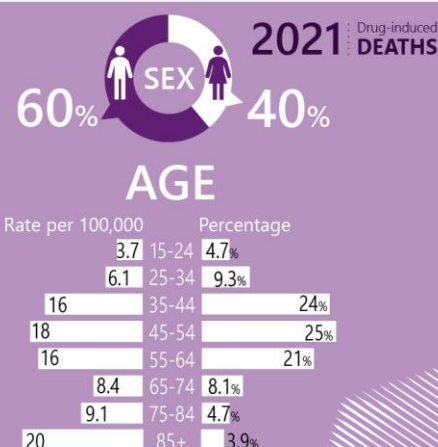
Western Australia



DRUG INVOLVEMENT

(deaths per 100,000 population)

5.4	Opioids
5.0	Antiepileptic, sedative-hypnotic and anti-parkinsonism drugs
3.5	Antidepressants
2.7	Amphetamine-type stimulants
2.5	Antipsychotics & neuroleptics
1.7	Non-opioid analgesics
0.64	Cannabinoids
(n≤5)	Cocaine



There were 258 registered overdose and other drug-induced deaths (excluding alcohol and tobacco) in [Western Australia](#) in 2021, which is equivalent to 1.6% of all registered deaths in this jurisdiction.

The rate of drug-induced deaths increased from 3.9 in 2002 to the all-time highest rate of 11 deaths per 100,000 people in 2019. The preliminary age-standardised rate of drug-induced deaths in 2021 was 9.1 deaths per 100,000 people ([Figure 33](#)). This rate was not statistically different to the estimated rate in 2020 (9.9 deaths per 100,000 people), noting that estimates for 2020 and 2021 are subject to revision and may increase (Table A47).

Sex



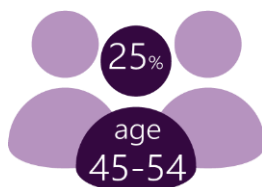
In 2021, males accounted for 60% (156 deaths) of drug-induced deaths. The rate of drug-induced deaths was also higher among males than females (11 versus 6.8 deaths per 100,000 people, respectively).

Analyses did not indicate a statistically significant difference between 2020 and 2021 in the estimated rates for males or females (Table A47).

Age

In 2021, drug-induced deaths were most common among the 45-54 age group (25%, 64 deaths).

The rate in 2021 was however highest in the 85 and over age group (20 deaths per



100,000 people), followed by the 45-54 age group (18 deaths per 100,000 people).

Analyses did not indicate a statistically significant difference in the preliminary estimated rates between 2020 and 2021 for any of the age groups. (Table A48).

Remoteness Area of Usual Residence

The greatest proportion of drug-induced deaths in 2021 occurred among people residing in major city areas (81%, 209 deaths), however the highest rate was observed among people in outer regional areas (9.7 deaths per 100,000 people).

In Western Australia, the rate of drug-induced deaths has been higher in major city versus regional and remote areas in most years of monitoring (9.4 and 7.2 death per 100,000 people in 2021). Analyses did not indicate a statistically significant difference in the preliminary estimated rates between 2020 and 2021 for any of the remoteness areas. (Table 49).

Intent of Drug Overdose Deaths

In 2021, 98% (253 deaths) of drug-induced deaths were due to [overdose](#). Unintentional drug overdose accounted for 67% (169 deaths) and intentional drug overdose for 23% (58 deaths) of these deaths in 2021. This profile was largely consistent over time. The estimated rate of unintentional drug overdose was lower in 2021 compared to 2020 (6.1 versus 7.8 deaths per 100,000 people) (Table A50).

Place of Occurrence



In 2021, the location of the incident underlying death was coded as home for the majority (79%, 204 deaths) of drug-induced deaths.

Drug Involvement

In Western Australia, the three most common drug types involved in drug overdose deaths in 2021 were:

- **opioids** (5.4 deaths per 100,000 people, 151 deaths),

- **antiepileptic, sedative-hypnotic and anti-parkinsonism drugs** (5.0 deaths per 100,000 people, 133 deaths),
- **antidepressants** (3.5 deaths per 100,000 people, 95 deaths) ([Figure 34](#)).

Comparison of preliminary estimates for drug overdose deaths occurring in the Western Australia did not identify a significant change in rates of drug involvement from 2020 to 2021, noting that estimates for 2020 to 2021 are subject to revision and may increase (Table A51).

Figure 33. Age-standardised rate per 100,000 people of drug-induced deaths, by sex, Western Australia, 2002-2021.

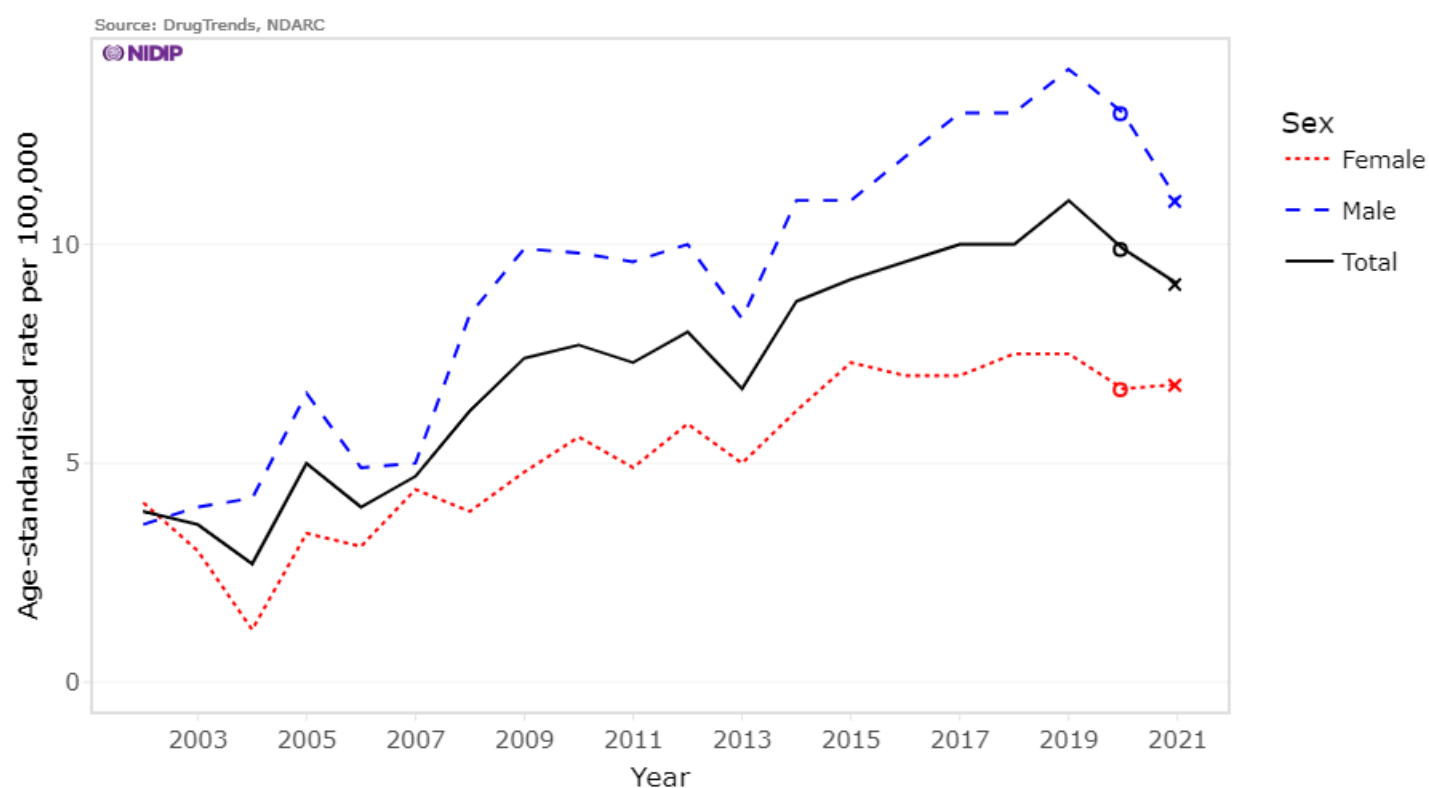
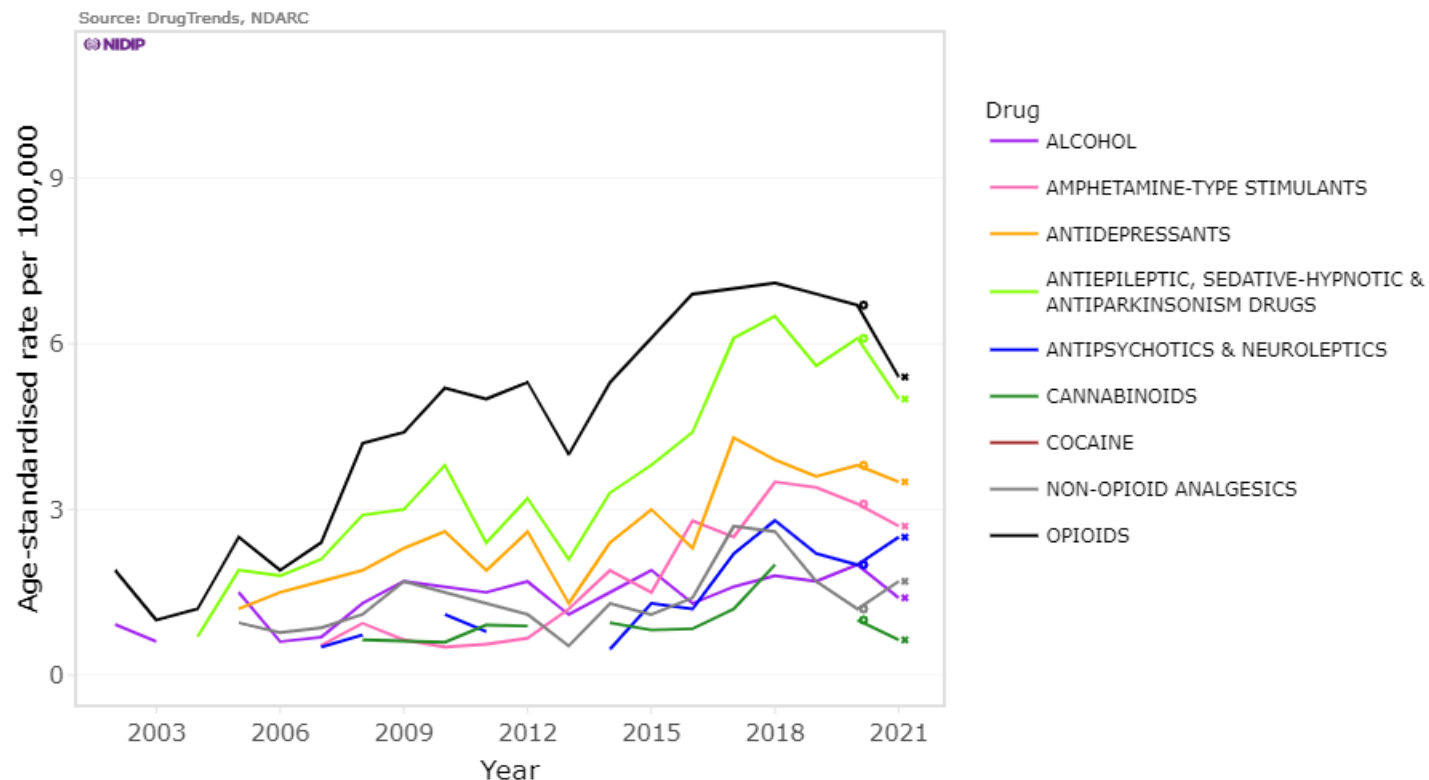


Figure 34. Age-standardised rate per 100,000 people of drug overdose deaths, by drug class, Western Australia, 2002-2021.



Note: Deaths where conditions related to alcohol or tobacco comprised the underlying cause of death are not captured here.

Causes of death data for 2019, 2020 and 2021 are not final and thus are subject to further revision. The symbol 'o' indicates revised estimates and 'x' preliminary estimates.

Age-standardised rates were not calculated if the number of deaths was less than or equal to 10 (please refer to our [methods document](#) for details). Suppressed data are visible as gaps in the data series.