

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 Australian. 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 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 analysis 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.

For full report and details of the methods underpinning this report, go to: <https://ndarc.med.unsw.edu.au/resource-analytics/trends-drug-induced-deaths-australia-2002-2021>

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>

