AUSTRALIA'S ANNUAL OVERDOSE REPORT

2021

For more information, contact:

Penington Institute

95 Drummond Street

Carlton Vic 3053

T: 61 3 9650 0699

F: 61 3 9650 1600

www.penington.org.au

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1. Foreword

John Ryan
CEO
Penington Institute

Australia's Annual Overdose Report 2021 reveals that there have been 34,728 overdose deaths in Australia since the turn of the century.

That figure includes 2,227 overdose deaths in 2019, 1,644 of which were unintentional.

The numbers should speak for themselves. Unfortunately, they're not being heard.

Deaths from overdoses have outnumbered the road toll since 2014. Yet while governments commit themselves to the important work of reducing the road toll, overdoses continue to claim the lives of thousands of our loved ones in virtual silence.

Overdose hides in plain sight. If there are 30 non-fatal overdoses for every fatal one, as research suggests, then there have been approximately one million overdoses this century. Drug and alcohol poisoning, a category which is overwhelmingly made up by drug overdoses, is the second-leading cause of death for Australians in their thirties while for those in their twenties and forties, it's the third-leading cause of death.

It's present in every corner of our communities. It affects Australians of all ages, in the country and the city. Although you'd be forgiven for thinking that illicit drugs are the main substances implicated in overdose, pharmaceutical drugs – opioids, benzodiazepines (sedative drugs), anti-depressants and anti-convulsants – are detected in most overdose deaths.

Despite its broad prevalence, the burden of overdose deaths is not evenly shared.

Aboriginal Australians are almost four times as likely to die of an overdose as non-Aboriginal Australians. Overdose deaths are more common in rural and regional areas, Australians in middle age and men.

Combining the Commonwealth's own estimate of the value of a year of life lost with the average of 33 years of life lost for each overdose death means that overdose deaths alone cost our economy more than $15.5 billion every year. The cost to the families who lose a loved one is impossible to calculate.

This year's Annual Overdose Report contains many findings that should prompt a shift in our approach, to drug policies based on lived experience and research.

The best place to begin is with a National Overdose Prevention Strategy, developed in close collaboration with people with lived experience, frontline workers and other experts. It must fearlessly address the drivers of drug use, the diversity of drugs that are causing overdose and how overdose risks are evolving. This strategy must be developed carefully but – crucially – it must also be developed urgently.

Australia's Annual Overdose Report 2021 is a bitter dose of reality. It is time to finally treat this crisis with the seriousness it deserves.

Figure 1. Number and characteristics of drug-induced deaths in 2019

2,227 **Drug-induced deaths** in Australia in 2019 of which **1,644** were unintentional.

882 Opioids

154 Anti-convulsants

582 Benzo-diazepines

1,644

197 Anti-psychotics

470 Stimulants

256 Cannabinoids

340 Anti-depressants

Figure 1. continued

Aboriginality

20
per 100,000

Aboriginal and Torres Strait Islander

5.9
per 100,000

Non-Aboriginal

Aboriginal and Torres Strait Islander people were almost four times as likely to die from an unintentional drug-induced death in 2019, with a rate of deaths of 20.0 per 100,000 population, compared with 5.9 deaths per 100,000 population for **non-Aboriginal people.**

Regional vs city

7.0   **6.1**

Unintentional drug-induced deaths per 100,000 people

In every state and territory across Australia, the rate of unintentional drug-induced deaths was higher outside the capital city in **2019**.

Age

11.1%   **21.7%**   **26.2%**   **41.1%**

Aged under 30   Aged 30–39   Aged 40–49   Aged over 50

2. Executive summary

The number of Australians who die from unintentional drug overdose each year continues its long-term rise. Over the past 20 years, there have been 34,728 drug-induced deaths. This report examines drug-induced deaths, where the death is directly attributable to the drug use, with a focus on unintentional-drug induced deaths.[1] This report presents key statistics about unintentional drug-induced deaths in Australia from 2001 to 2019, with a snapshot of 2019 data provided in Figure 1.

There were 2,227 drug-induced deaths in Australia in 2019, with 1,644 of them being unintentional. The number of unintentional drug-induced deaths surpassed the road toll in 2014.

Drug overdose is a leading cause of death for Australians of all ages. For both males and females aged 20-29, drug-induced deaths were the third-leading cause of death behind suicide and land transport accidents. For those aged 30-39, drug-induced deaths were the second-leading cause of death behind suicide for both males and females. Drug-induced deaths were again the third-leading cause of death in the 40-49 age group for both males and females.

Drug-induced suicides also exact a substantial toll on the Australian community, with 456 such suicides in 2019. Since 2012, the rate of drug-induced suicides in rural and regional Australia has increased substantially, overtaking the rate in capital cities. The largest increases in drug-induced suicides over time are seen among older Australians, with people aged over 60 accounting for one-third of all such deaths in 2019.

Unintentional drug-induced deaths are not evenly distributed through our communities. They are proportionally more common in rural and regional parts of the country and among men. While unintentional drug-induced deaths were most common among those aged 40-49, one in five such deaths were seen among people aged 60 and above. The rate of unintentional drug-induced death among Aboriginal Australians continues to be far higher than for non-Aboriginal Australians: in 2019, their rate of unintentional drug-induced deaths was 20.0 per 100,000 population, compared with 5.9 for non-Aboriginal people.

Deaths associated with multiple drug types are far more common than those associated with a single type of drug. Over the five years to 2019, more than half of all unintentional drug-induced deaths involved three or more drug types, with less than one-third involving one drug type only. Almost one in ten unintentional drug-induced deaths involved six or more different drug types. Pharmaceutical opioids were involved in half of all poly-substance deaths during the five-year period. Unintentional poly-substance deaths were most commonly seen in middle age, although they were responsible for almost two-thirds of unintentional drug-induced deaths among women aged 60 and above.

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[1] Unintentional drug-induced deaths includes drug overdoses, wrong drugs given or taken in error, and accidental poisoning due to drugs. Drug-induced deaths deemed homicidal, suicidal or of undetermined intent are not included in unintentional drug-induced deaths.

2.1. Key findings for each drug type

Opioids (Section 7.1)

- Opioids continue to be the primary drug group associated with unintentional drug-induced deaths: there were 882 unintentional drug-induced deaths involving opioids in 2019, equating to 53.6% of all unintentional drug-induced deaths.

- The number of unintentional drug-induced deaths involving opioids has nearly trebled in the last 14 years. While deaths involving pharmaceutical opioids have constituted the majority of unintentional deaths due to opioids since 2004, there has been a dramatic rise in deaths involving heroin since 2012, increasing from 67 in 2012 to 442 in 2019.

- Almost one in three (30.0%) unintentional drug-induced deaths involving pharmaceutical opioids were observed in people aged 50 and above.

- Females had a higher proportion of unintentional drug-induced deaths involving pharmaceutical opioids than males (55.7% among females, compared with 44.2% among males), while males had a higher proportion of unintentional drug-induced deaths involving heroin (38.5% among males, compared with 23.2% among females).

- Unintentional drug-induced deaths involving opioids predominantly occur in a poly-drug context. Deaths due to the most common combination of drugs – opioids plus benzodiazepines – have trebled, from 160 deaths in 2007 to 477 in 2019.

Benzodiazepines (Section 7.2)

- Benzodiazepines remain the second most common group of drugs identified in unintentional drug-induced deaths. There were 582 such deaths involving benzodiazepines in 2019, accounting for 35.4% of all unintentional drug-induced deaths – more than double the 16.8% in 2001.

- Benzodiazepines are predominantly identified in poly-substance overdose deaths: less than 1% of unintentional drug-induced deaths involve benzodiazepines on their own.

- More than one-quarter (27.6%) of unintentional drug-induced deaths involving benzodiazepines during this period involved people aged 50 and above.

- Males had more than double the number of unintentional drug-induced deaths involving benzodiazepines than females during the five years to 2019, with 2,120 deaths among males accounting for two-thirds of the deaths involving benzodiazepines (66.9%), compared with 1,050 deaths among females.

Stimulants (Section 7.3)

- There has been a sharp rise in deaths involving stimulants (including methamphetamine) since 2012 in both regional and urban areas. There were 470 unintentional drug-induced deaths involving stimulants in 2019, equating to 28.6% of all unintentional drug-induced deaths, compared with 5.4% of all unintentional drug-induced deaths in 2001.

- While people aged under 30 accounted for 16.3% of unintentional drug-induced deaths involving stimulants between 2015 and 2019, those aged 50 and older represented 18.0% of such deaths.

- Males accounted for 75.4% of the unintentional drug-induced deaths involving stimulants during the 2015-2019 period.

Anti-depressants (Section 7.4)

- There were 340 unintentional drug-induced deaths involving anti-depressants in 2019, accounting for 20.7% of all unintentional drug-induced deaths – almost double the 10.5% in 2001.

- Rates of unintentional drug-induced deaths involving anti-depressants have been higher outside of capital cities since 2010.

- There is a slightly older age profile for unintentional drug-induced deaths involving anti-depressants: more than one in ten (11.0%) unintentional deaths involving anti-depressants were observed among people aged 60 and over.

- There is a more even sex distribution for unintentional drug-induced deaths involving anti-depressants than for other drug types, with males accounting for 58.2% of all such deaths.

Cannabinoids (Section 7.5)

- There were 256 unintentional drug-induced deaths involving cannabinoids in 2019, accounting for 15.6% of all unintentional drug-induced deaths.

- In drug-induced deaths involving only cannabinoids, every death since 2014 has been due to synthetic cannabinoids – no deaths have involved natural cannabis on its own.

- One in five (21.0%) unintentional deaths involving cannabinoids were recorded among people aged 50 and over. Deaths among people aged under 30 accounted for 15.1% of these deaths over the five-year period

- Deaths among males accounted for 74.7% of unintentional drug-induced deaths involving cannabinoids during the five years to 2019.

Anti-psychotics (Section 7.6)

- Deaths involving anti-psychotics have increased markedly in the last few years, although they accounted for only a small proportion of all unintentional drug-induced deaths in 2019 (12.0%, or 197 deaths).

- More than one-quarter (26.8%) of the unintentional deaths involving anti-psychotics were recorded among people aged 50 and over.

- Males accounted for 64.4% of unintentional deaths involving anti-psychotics during the five years to 2019.

- The rate of unintentional drug-induced deaths involving anti-psychotics remains lower than it is for other classes of drugs.

Anti-convulsants and neuropathic pain modulators (Section 7.7)

- Deaths involving anti-convulsants and neuropathic pain modulators have also increased markedly in the last few years, although they accounted for less than one in ten of the unintentional drug-induced deaths in 2019 (9.4%, or 154 deaths).

- More than one-quarter (26.9%) of the unintentional deaths involving anti-convulsants and neuropathic pain modulators were recorded among people aged 50 and over.

- Males accounted for 61.8% of unintentional deaths involving anti-convulsants and neuropathic pain modulators during the five years to 2019.

- The rate of unintentional drug-induced deaths involving anti-convulsants and neuropathic pain modulators remains far lower than it is for other drug types.

3. Data source and status

This report is about drug-induced deaths in Australia, with a focus on unintentional drug-induced deaths – drug overdoses and accidental poisoning due to drugs.[2] Drug-induced deaths are where the death was directly attributable to the drug use, as opposed to deaths where a drug was found to be a contributory factor (such as a car crash where the deceased was found to be affected by drug or alcohol intoxication at the time of death).

The drug types identified in this report are associated with a drug-induced death, but may not be the sole cause of death. In some cases the drug identified may have little or no causative role: the presence of natural disease may contribute to fatal toxicity.

Data in this report were sourced from the Australian Bureau of Statistics (ABS) in a customised report provided in March 2021[3]. More information on the data underpinning this report, including definitions and methods used in preparing the report, is presented in Appendix 1.

3.1 Preliminary data

In Australia, all suspected drug-induced deaths must be reported to a coroner. These investigations can, in some instances, take several years. Therefore, the first available data are preliminary; they are then revised the following year, and then finalised the year after that.[4]

Current numbers for 2018 and 2019 should be considered preliminary. Based on past reporting, the number of deaths for 2018 and 2019 is expected to rise. Comparing 2017 data between the 2019, 2020 and 2021 reports, numbers have increased on average by approximately 12% as they move from preliminary to finalised, with the increase from preliminary to revised typically larger than the subsequent increase from revised to finalised. These later inclusions, while adding a small number of deaths to the totals each year, do not have any substantive effect on the trends or the main findings of these reports. For example, current data for unintentional drug-induced deaths show 1,720 such deaths in 2018 and 1,644 in 2019. Applying projections based on the average increase as the numbers move from preliminary to revised to finalised, next year's report will likely show approximately 1,816 unintentional drug-induced deaths in 2018 and 1,756 in 2019.

As 2018 and 2019 data are not yet finalised, in graphs depicting a time-series, data for 2018 and 2019 are represented as being to the right of a dashed vertical line on the graph.

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[2] Drug-induced deaths that were deemed homicidal, suicidal or of undetermined intent are not included in unintentional drug-induced deaths.

[3] Full explanatory notes for the most recent cause of death data are available via ABS (2020). *Causes of death, Australia.* Australian Bureau of Statistics: https://www.abs.gov.au/statistics/health/causes-death/causes-death-australia/2019.

[4] Further information on the status of the data is available in Appendix 1 – technical specifications.

4. All drug-induced deaths 2001-2019

This chapter examines trends and patterns in all drug-induced deaths. While the overall focus of the report is on unintentional drug-induced deaths, this chapter sets the context by examining all drug-induced deaths, and compares trends in drug-induced deaths to road traffic crashes (the "road toll") and car crashes.

In 2019, there were 2,227 drug-induced deaths in Australia. This equates to 69,566 years of life lost to drug-induced deaths, with an average of 33 years of life lost per drug-induced death. As a point of reference, the 2019 rate of all drug-induced deaths in Australia was 8.7 per 100,000 people, compared with 7.7 deaths per 100,000 people in England and Wales in 2019[5] and 21.6 per 100,000 people in the United States in 2019.[6] The current rate of deaths in Australia is equivalent to the rate of deaths in the United States in 2003.[7]

As shown in Figure 2, the number of all drug-induced deaths surpassed the road toll in 2008 and has continued to rise in the years since. In comparison, the road toll has continued to fall. In 2014, the number of unintentional drug-induced deaths also surpassed the road toll and has continued to increase, to 1,644 in 2019. Based on the current trends from 2001-2019, both drug-induced deaths and unintentional drug-induced deaths have been increasing on average by more than 3% per year. This would equate to an additional 380 drug-induced deaths by 2024; 271 will likely be unintentional. In contrast, the road toll has decreased on average by 1.8% per year, equating to 111 fewer deaths by 2024.

Figure 2. Number of drug-induced deaths in Australia, compared with road-related deaths, 2001-2019
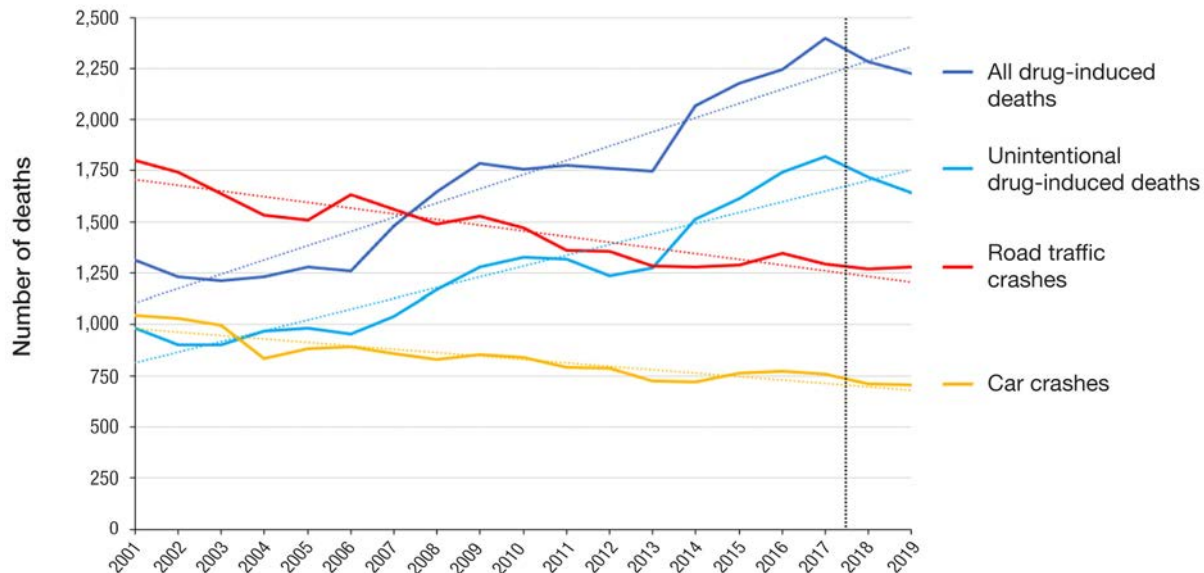
Note: Data to the right of the dotted line (2018 and 2019 data) are preliminary, and likely to rise.

'Road traffic crashes' includes all deaths due to road-related accidents; 'car crashes' includes only those deaths involving an occupant of a car.

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[5] Office for National Statistics (2020). *Deaths related to drug poisoning in England and Wales*. https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/datasets/deathsrelatedtodrugpoisoninginenglandandwalesreferencetable.

[6] Centers for Disease Control and Prevention (2021). *Drug overdose deaths*. https://www.cdc.gov/drugoverdose/data/statedeaths.html.

[7] Hedegaard, H., Minino, A. and Warner, M. (2020). NCHS data brief no. 356: *Drug overdose deaths in the United States, 1999-2018.* Centers for Disease Control and Prevention: https://www.cdc.gov/nchs/data/databriefs/db356-h.pdf.

To place the impact of drug-induced deaths in a broader context, it is useful to identify the relative rank of the number of these deaths compared with deaths from all causes. Table 1 presents the ranking of drug-induced deaths in 2019 for males and females aged over 20.

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

Table 1. Top three causes of death by age group and sex, 2019

Age	Rank	Males	Females
20 – 29	1st	Suicide	Suicide
	2nd	Land transport accidents	Land transport accidents
	3rd	Accidental poisoning: drug/alcohol	Accidental poisoning: drug/alcohol
30 –39	1st	Suicide	Suicide
	2nd	Accidental poisoning: drug/alcohol	Accidental poisoning: drug/alcohol
	3rd	Land transport accidents	Breast cancer
40 – 49	1st	Suicide	Breast cancer
	2nd	Ischaemic heart disease	Suicide
	3rd	Accidental poisoning: drug/alcohol	Accidental poisoning: drug/alcohol
50 – 59	1st	Ischaemic heart disease	Breast cancer
	2nd	Lung cancer	Lung cancer
	3rd	Suicide	Ischaemic heart disease
		Accidental poisoning: drug/alcohol (9th)	Accidental poisoning: drug/alcohol (13th)
60+	1st	Ischaemic heart disease	Dementia and Alzheimer disease
	2nd	Dementia and Alzheimer disease	Ischaemic heart disease
	3rd	Lung cancer	Cerebrovascular diseases

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

As shown in Figure 3, opioids continued to be the largest overall drug group identified in drug-induced deaths, followed by benzodiazepines, anti-depressants and stimulants (this includes methamphetamine, amphetamine and ecstasy). Drug-induced deaths involving opioids, benzodiazepines and anti-depressants have been increasing steadily over the past decade, following a fairly stable period to 2006. From 2009 onwards, the number of drug-induced deaths involving alcohol appears to have increased more slowly. In contrast, deaths involving stimulants, anti-psychotics and anti-convulsants have increased rapidly since 2013. Deaths involving stimulants have more than trebled in recent years, from 175 in 2013 to 551 in 2019, while deaths involving anti-psychotics increased from 31 in 2013 to 301 in 2019.[8] Deaths involving anti-convulsants, assumed to be related in part to rising pregabalin prescribing, were rare in the decade prior to 2014. This is possibly due to limited prescribing of pregabalin in Australia prior to 2013.[9] These deaths increased from 24 in 2015 to 204 in 2019.

Figure 3. Number of drug-induced deaths in Australia, by drug type, 2001-2019
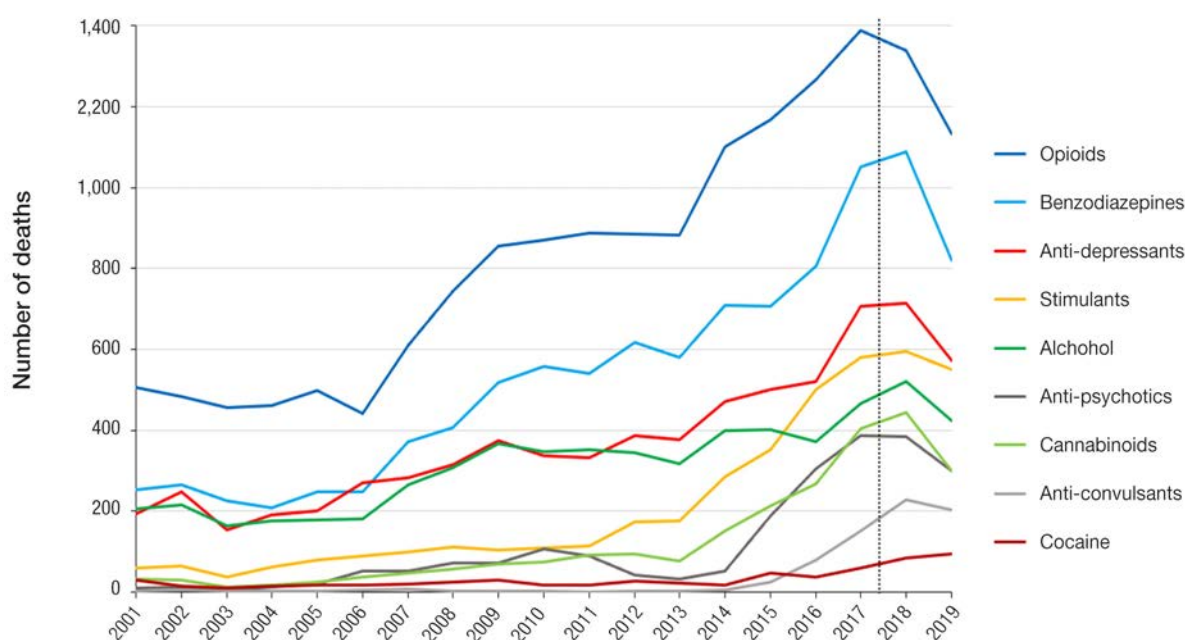
Note: Data to the right of the dotted line (2018 and 2019 data) are preliminary, and likely to rise. Smaller drug groups including other sedatives (including ketamine), and succinimides and oxazolidinediones (including GHB) are not shown on the figure above, due to low numbers.

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[8] Laboratories have been increasingly able to detect some anti-psychotics as instrumentation has evolved to allow lower detection limits, particularly for the more potent analogues.

[9] Pharmaceutical Benefits Advisory Committee, Drug Utilisation Sub-committee (2014). *Pregabalin: 12 month predicted versus actual analysis*. Canberra: Department of Health. Available at: http://www.pbs.gov.au/info/industry/listing/participants/public-release-docs/2014-10/pregabalin-10-2014.

In 2019, preliminary data show that opioids, benzodiazepines, anti-depressants and stimulants (including methamphetamine, amphetamine and ecstasy) were the most commonly identified substances in drug-induced deaths (Figure 4). However, the proportion of drug-induced deaths that were unintentional differed by substance type, with percentages ranging from 56.3% to 90.4% unintentional. The drugs with the highest proportion of unintentional drug-induced deaths (compared with total drug-induced deaths) were cocaine (90.4%), succinimides and oxazolidinediones including GHB (89.5%), heroin (88.8%) and methadone (88.5%). The drugs with the lowest proportions of drug-induced deaths that were unintentional were 'other sedatives' (56.3%), anti-depressants (59.3%) and 'specified anti-convulsants and sedatives' (60.2%).

Figure 4. Number of drug-induced deaths in 2019 by drug type: all deaths and unintentional deaths
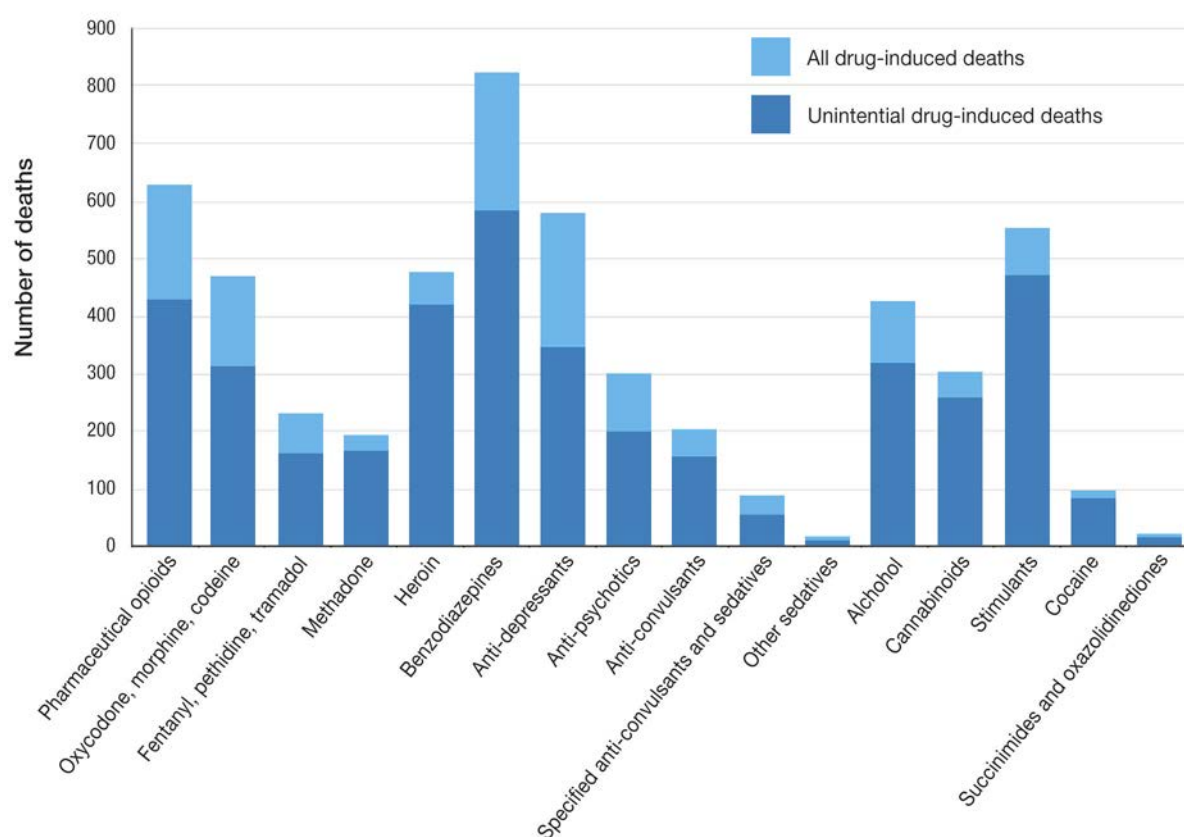
Note: Pharmaceutical opioids includes the groups oxycodone / morphine / codeine and fentanyl / pethidine / tramadol. Opium is not shown on the graph as a single bar as there were zero deaths involving opium.

Unintentional drug-induced deaths comprise approximately three-quarters of all drug-induced deaths (Figure 5), and this proportion has remained relatively constant between 2001 and 2019 (ranging from 70% to 79%, with an average of 74%). Both are continuing to trend upwards and are increasing more rapidly than the population is growing. From 2001 to 2019, the population of Australia increased by 31.6% (from 19,386,461 persons in December 2001 to 25,522,169 persons in December 2019).[10] In comparison, over the same period the number of all drug-induced deaths has increased by 69.6% (from 1,313 to 2,227), and unintentional drug-induced deaths have increased by 67.6% (from 981 to 1,644).

Applying projections based on the observed increase in the number of deaths as the status of the data progresses from preliminary to revised to finalised,[11] the number of all drug-induced deaths is projected to be 2,405 in 2018 and 2,343 in 2019, while the number of unintentional drug-induced deaths is projected to be 1,816 in 2018 and 1,756 in 2019.

The number of drug-induced suicides – presented in more detail in the following chapter – has increased by 57.8%, from 289 in 2001 to 456 in 2019.[12]

Figure 5. Number of unintentional drug-induced deaths and drug-induced suicides compared with all (total) drug-induced deaths, 2001-2019
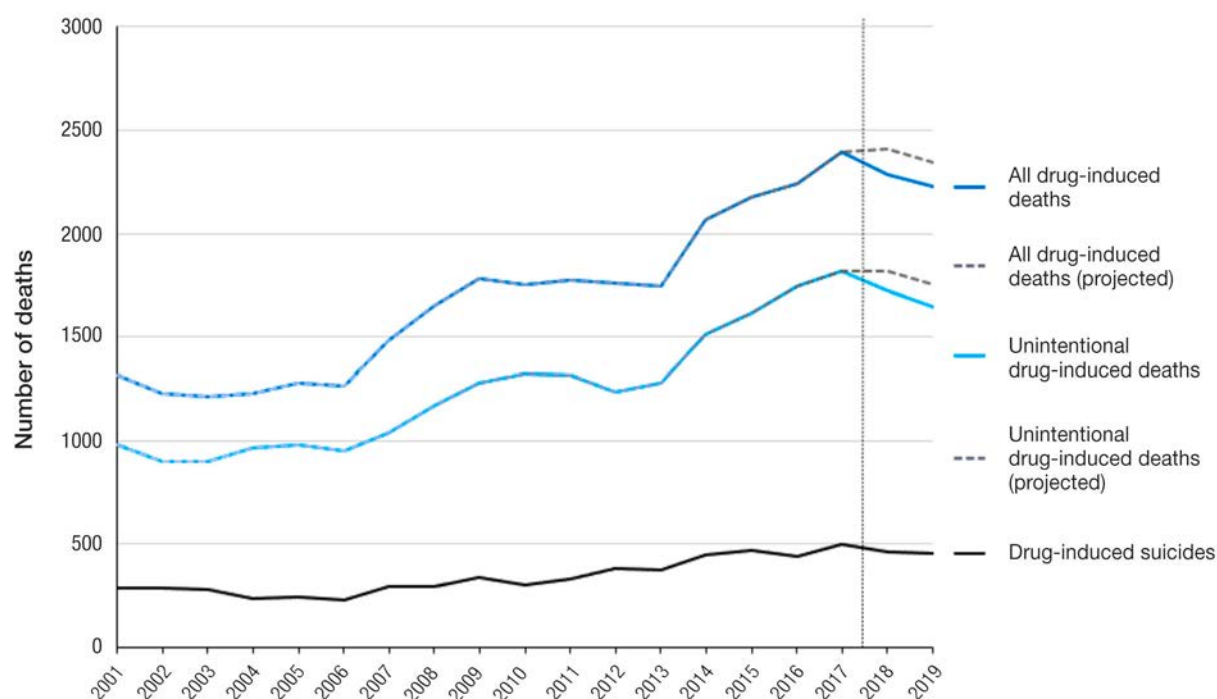
Note: Data to the right of the dotted line (2018 and 2019 data) are preliminary, and likely to rise. Data for projecting drug-induced suicides were not available.

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[10] Australian estimated resident population data are available from ABS (2020). *National, state and territory population, December 2019*. Australian Bureau of Statistics: https://www.abs.gov.au/statistics/people/population/national-state-and-territory-population/dec-2019

[11] Further information on the status of the data is available in Appendix 1 – technical specifications.

[12] Prior to 2006, when the ABS moved to the online National Coronial Information System, suicide deaths may have been understated.

5. Drug-induced suicides 2001-2019

This chapter presents data on trends in drug-induced suicides, analysed by factors of interest such as sex, age group, regionality and drug type. "Drug-induced suicide" deaths include intentional self-inflicted poisoning by exposure to a range of drug types including legal drugs, illicit drugs and/or alcohol.[13]

As seen in Table 2, the highest numbers of drug-induced suicides in 2019 were reported in NSW (113 deaths)[14] and Queensland (109 deaths), followed by Victoria (97 deaths). However, the highest rates of drug-induced suicide in 2019 were seen in Tasmania, with 3.8 such deaths per 100,000 population, followed by Queensland and South Australia, both reporting 2.1 deaths per 100,000 population, as well as Western Australia (2.0 per 100,000 population).

Table 2. Number of drug-induced suicides by state or territory, 2001-2019

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
NSW	86	88	81	81	63	53	89	92	88	86	100	140	107	107	125	124	137	131	113
VIC	66	75	67	67	58	52	57	59	90	63	78	63	76	76	101	97	112	111	97
QLD	63	72	65	65	61	64	76	69	75	63	75	87	104	104	132	97	120	116	109
SA	29	19	34	34	27	30	25	32	24	24	27	25	33	33	42	37	44	32	41
WA	33	18	23	23	21	15	37	30	47	51	38	55	38	38	50	57	59	54	56
TAS	3	9	5	5	12	7	8	7	11	10	8	11	12	12	13	21	12	9	23
NT	4	2	0	0	2	1	4	3	0	2	3	0	3	3	2	3	4	4	0
ACT	3	4	6	6	5	5	4	1	7	3	5	5	1	1	7	1	15	8	17

Note: 2018 and 2019 data are preliminary, and likely to rise.

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[13] There is no systematic definition to differentiate intended from unintended death, and coroners may not make a finding on intent for various reasons. Care should therefore be taken in interpreting figures relating to intentional self-harm. For more information on the coding of suicide, see ABS (2020). *Deaths due to intentional self-harm (suicide)*, at: https://www.abs.gov.au/methodologies/causes-death-australia-methodology/2019#deaths-due-to-intentional-self-harm-suicide-.

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

As shown in Figure 6, from 2006 to 2011 the rate of drug-induced suicides was proportionally higher in capital city areas than in regional Australia; the regions overtook capital city areas, however, in 2012. Since then, the rate of drug-induced suicides has increased by 38.5% in the regions, while the rate in capital cities has increased by 13.3%. In 2019, there were 1.8 drug-induced suicides per 100,000 people in rural and regional areas, compared with 1.7 per 100,000 in the capital cities.

Figure 6. Drug-induced suicides by regionality, 2001-2019, rate per 100,000 population
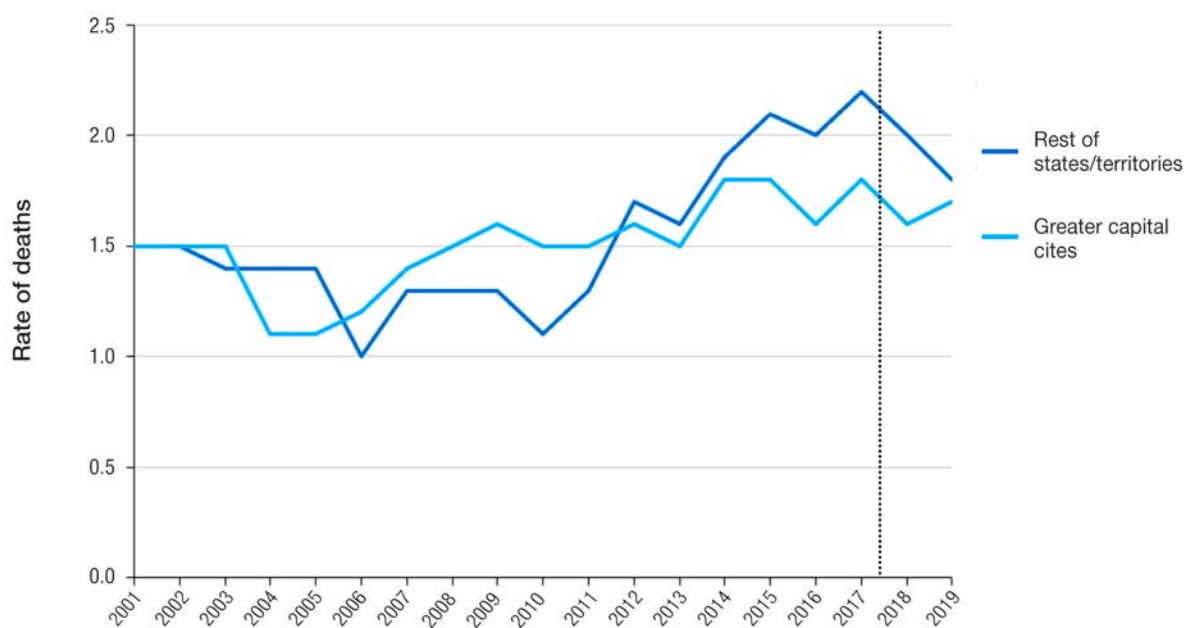
Note: Data to the right of the dotted line (2018 and 2019 data) are preliminary, and likely to rise.

The trends in the number of drug-induced suicides (Figure 7) are similar to those seen for all drug-induced deaths. However, there is a clear demarcation in these data that was less apparent in the data for all drug-induced deaths. For drug-induced suicides, benzodiazepines, opioids and anti-depressants were far more commonly involved than other drug types. Alcohol and anti-psychotics were the next most frequently reported drugs involved in drug-induced suicides, with a particularly sharp rise in anti-psychotics since 2014. The remaining drug types were less likely to be involved in drug-induced suicides.

Figure 7. Number of drug-induced suicides by drug type, 2001-2019
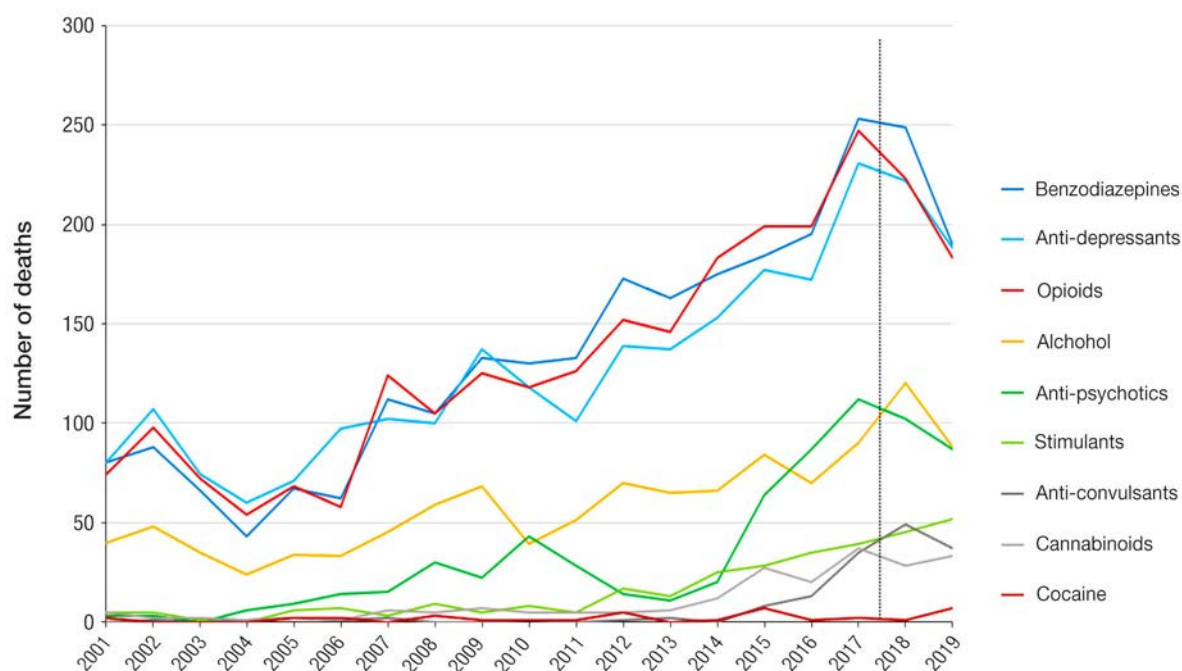
Note: Data to the right of the dotted line (2018 and 2019 data) are preliminary, and likely to rise.

5.1. Demographic patterns in drug-induced suicides

There are distinct age-related patterns of harms in drug-induced suicides, as shown in Figure 8. Since 2005, deaths in the 50-59 age group have almost trebled, from 37 in 2005 to 96 in 2019 – the highest number of drug-induced suicides in 2019, accounting for 21.1% of these deaths. Increases in drug-induced suicides are also seen among people aged 40-49 (from 58 in 2006 to 87 in 2019). The largest increases are seen among the two older age groups: among people aged 60-69, the number of drug-induced suicides increased from a low of 15 in 2004 to 62 in 2019, while among those aged 70 and above, the number increased from 28 in 2004 to 91 in 2019. Together, these two groups accounted for one-third (33.6%) of all drug-induced suicides in 2019.

The number of drug-induced suicides remained fairly stable for people under 30 years of age, accounting for one in ten (10.3%) of these deaths recorded in 2019.

Figure 8. Number of drug-induced suicides by age group, 2001-2019
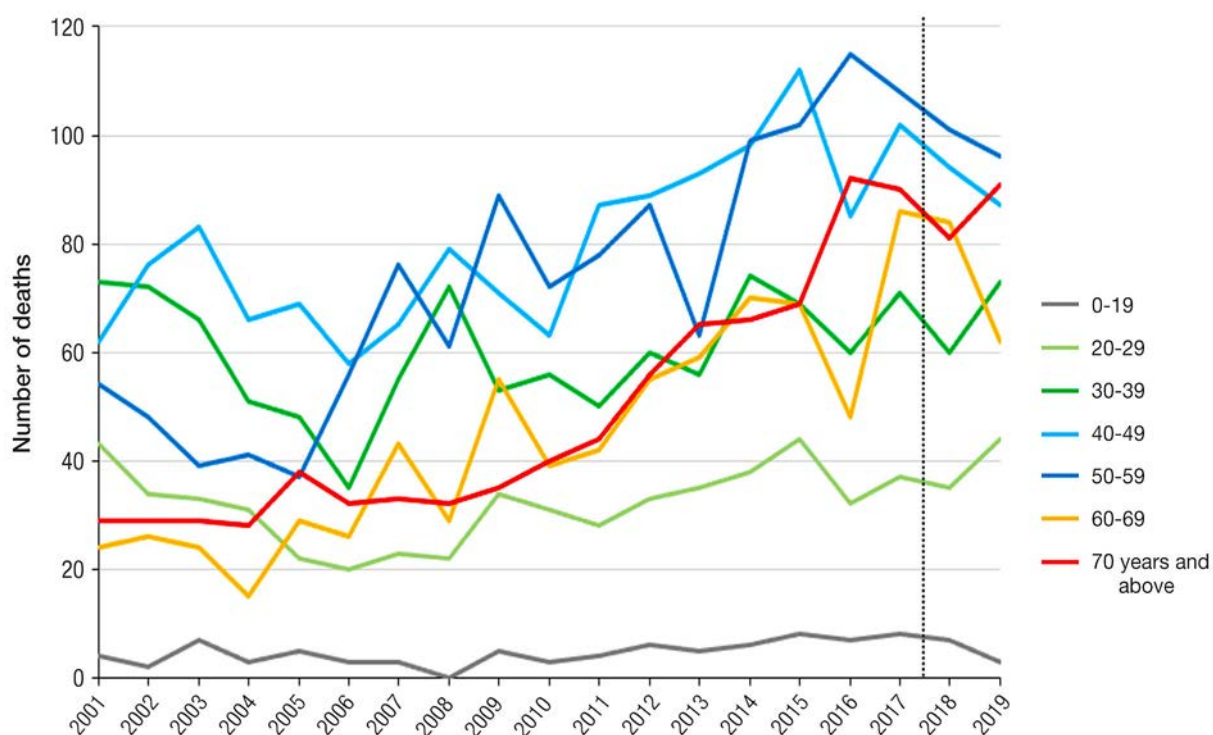
Note: Data to the right of the dotted line (2018 and 2019 data) are preliminary, and likely to rise.

Unlike unintentional drug-induced deaths, which are seen among males far more commonly than females, trends in drug-induced suicides are very similar for males and females. Figure 9 shows that the number of such deaths has increased at about the same pace for both groups. Among males, the number of drug-induced suicides has more than doubled, from a low of 101 in 2006 to 227 in 2019. Similarly, the number of such deaths among females has increased from 103 in 2004 to 229 in 2019.

Figure 9. Number of drug-induced suicides by sex, 2001-2019

Note: Data to the right of the dotted line (2018 and 2019 data) are preliminary, and likely to rise.

As shown in Table 3, during the period 2015-2019 the rate of drug-induced suicide was higher among people born in Australia than those born in any of the other regions. People born in Asia reported the lowest rate of drug-induced suicide in each of the five-year periods.

Table 3. Drug-induced suicides by region of birth, 2000-2004 to 2015-2019, rate per 100,000 population

	2000–2004	2005-2009	2010-2014	2015-2019
Australia	1.5	1.4	1.8	2.1
Oceania and Antarctica (excl. Australia)	1.5	1.3	1.3	1.7
Europe	1.6	1.5	1.4	1.7
Africa and the Middle East	np	0.8	0.9	1
Asia	0.4	0.5	0.7	0.5
Americas	np	np	1.4	1.2

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

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

6. Unintentional drug-induced deaths 2001-2019

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

As shown in Figure 10, the most notable changes in the rates of unintentional drug-induced deaths are the increases seen in New South Wales, Victoria, Queensland, and Western Australia. While Western Australia has reported the highest rate of unintentional drug-induced deaths since 2011, the greatest increase in recent years has been observed in Victoria, where rates of unintentional drug-induced deaths increased from 3.8 per 100,000 in 2012 to 6.8 per 100,000 in 2019. These data are also provided as numbers of unintentional drug-induced deaths, rather than rates, in Table 4.

Figure 10. Unintentional drug-induced deaths by state, 2001-2019, rate per 100,000 population
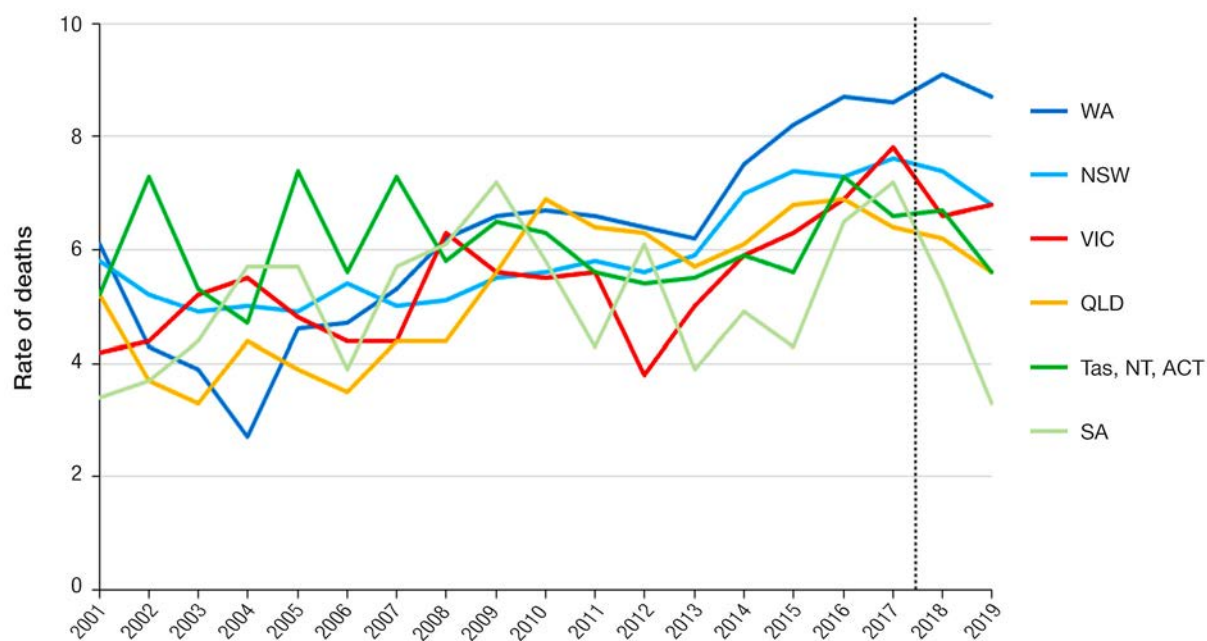
Note: Data to the right of the dotted line (2018 and 2019 data) are preliminary, and likely to rise. Numbers of deaths cannot be reliably converted to rates per 100,000 in Tasmania, Northern Territory, and Australian Capital Territory due to low numbers and are therefore presented as an aggregate.

Table 4. Number of unintentional drug-induced deaths by state or territory, 2001-2019

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
NSW	379	343	328	337	332	370	349	357	397	404	404	412	448	533	568	573	603	583	555
VIC	203	216	255	276	243	226	231	335	306	303	303	217	288	349	377	421	487	425	449
QLD	182	134	123	166	153	140	179	184	243	302	302	287	261	286	318	329	306	305	280
WA	116	82	75	53	91	96	111	135	150	153	153	155	152	190	207	222	220	234	230
SA	50	55	68	88	88	63	94	98	115	95	95	104	65	84	77	112	124	95	61
Tas	21	35	20	21	36	30	32	28	40	28	28	30	27	38	31	47	36	34	29
ACT	17	17	22	15	24	11	22	22	18	20	20	12	23	21	16	28	27	27	21
NT	13	20	10	12	16	16	23	12	12	20	20	20	12	11	18	12	16	17	19

Note: 2018 and 2019 data are preliminary, and likely to rise.

When considering unintentional drug-induced deaths in 2019 by state/territory and residential location, the rate of deaths ranged from 3.4 deaths per 100,000 people in Greater Adelaide to 9.6 deaths per 100,000 in regional and rural Western Australia (Table 5 next page). In most jurisdictions other than Queensland, the rate of unintentional drug-induced deaths was higher outside the capital city. For Australia overall, there were 7.0 unintentional drug-induced deaths per 100,000 people outside of capital city areas and 6.1 per 100,000 within capital cities.

Table 5. Unintentional drug-induced deaths by usual residence in 2019

Region of usual residence	Number	Rate (per 100,000)
New South Wales		
Greater Sydney	327	6.1
Rest of New South Wales	220	8.0
Victoria		
Greater Melbourne	310	6.1
Rest of Victoria	126	8.7
Queensland		
Greater Brisbane	145	5.9
Rest of Queensland	134	5.3
South Australia		
Greater Adelaide	49	3.4
Rest of South Australia	9	np
Western Australia		
Greater Perth	176	8.3
Rest of Western Australia	51	9.6
Tasmania, Northern Territory, Australian Capital Territory (combined)		
Greater Hobart, Darwin, Australian Capital Territory	48	5.8
Rest of Tasmania and Northern Territory	19	np
Australia		
Greater capital cities total	1,055	6.1
Remainder of states total	559	7.0

Note: np (not available for publication) means that a value could not be calculated due to the low number of deaths.

As shown in Figure 11, from 2001 to 2010, the rates of unintentional drug-induced deaths were very similar between the greater capital cities and the remainder of the states and territories. However, since 2011, when the rates began to diverge, the rate of unintentional drug-induced deaths in rural and regional Australia has increased by 11.1%, while the rate in capital cities has increased by 8.9%. In 2019, there were 7.0 unintentional drug-induced deaths per 100,000 people in rural and regional areas, compared with 6.1 per 100,000 in the capital cities. Greater detail on these geographic trends is provided in Chapter 8.

Figure 11. Unintentional drug-induced deaths by regionality, 2001-2019, rate per 100,000 population
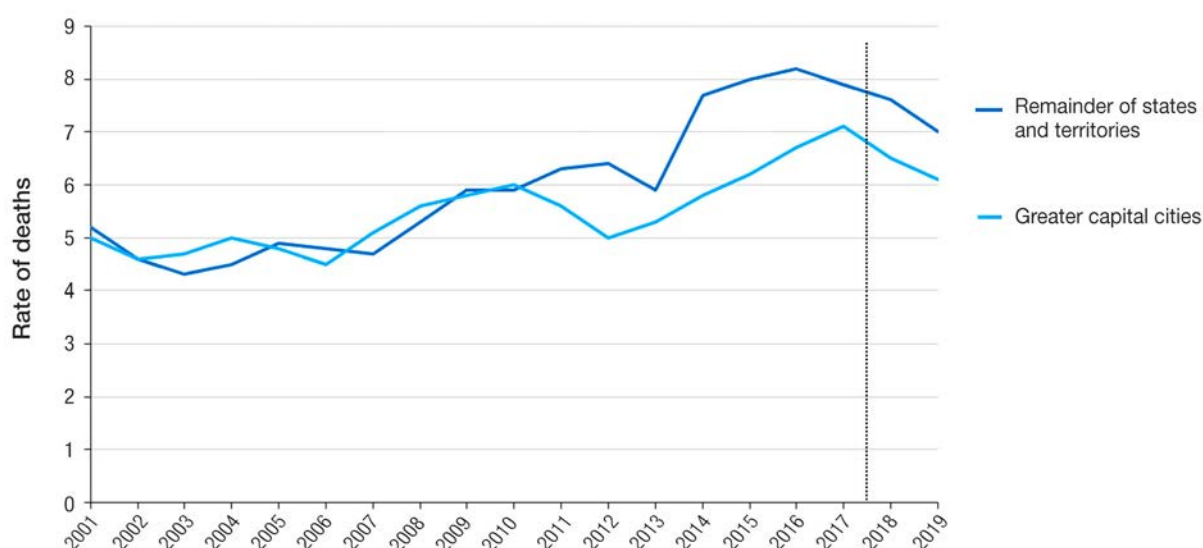
Note: Data to the right of the dotted line (2018 and 2019 data) are preliminary, and likely to rise.

Providing a deeper level of detail for the non-capital city areas, Table 6 shows the number and rate of unintentional drug-induced deaths for inner regional areas, outer regional areas and remote or very remote areas in Australia. Inner regional areas reported the highest rate of unintentional drug-induced deaths over the five-year period 2015-2019 (7.7 deaths per 100,000 people), while the lowest rate was seen in remote or very remote areas (6.3 per 100,000 people).

Table 6. Unintentional drug-induced deaths by remoteness area, 2011-2019, number and rate per 100,000 population

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2015-2019 (Number)	2015-2019 (rate per 100,000)
Major cites	908	847	887	1,021	1,097	1,182	1,288	1,184	1,153	5,904	6.7
Inner regional	242	230	224	319	306	337	340	349	292	1,624	7.7
Outer regional	123	114	116	118	115	180	149	117	142	739	7.1
Remote or very remote	32	28	28	34	44	27	21	34	27	153	6.3

Note: 2018 and 2019 data are preliminary, and likely to rise.

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

There was a large and sudden increase in the rate of unintentional drug-induced deaths among people born in Australia, from 6.9 in 2010-2014 to 8.7 in 2015-2019.

Table 7. Unintentional drug-induced deaths by region of birth, 2000-2004 to 2015-2019, rate per 100,000 population

	2000-2004	2005-2009	2010-2014	2015-2019
Australia	5.8	5.7	6.9	8.7
Oceania and Antarctica (excl. Australia)	4	4.8	5	5.2
Europe	5.1	4.9	4.8	5.5
Africa and the Middle East	3.1	2.9	2.8	3.3
Asia	2.6	1.5	1.4	1.4
Americas	4.8	4.9	4.6	4.8

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

Table 8 shows the rate of unintentional drug-induced deaths associated with different drug types for people born in different world regions. There are some notable differences in the drug types with the highest rates of unintentional death for the various cohorts. For example, while opioids as a broad drug class have the highest death rate for all cohorts, pharmaceutical opioids are the opioid type with the highest rate of death for all groups except those born in Asia, for whom heroin is the opioid type with the highest death rate. In contrast to all other cohorts, people born in the Oceania region have a higher rate of death associated with stimulants than with benzodiazepines.

Table 8. Unintentional drug-induced deaths by drug type and region of birth, 2015-2019, rate per 100,000 population

	Australia	Oceania and Antarctica	Europe	Africa and the Middle East	Asia	Americas
Opioids:	5.5	2.6	3.0	1.6	0.6	2.3
– Heroin	2.1	1.0	1.3	0.7	0.4	1.1
– Oxycodone, morphine, codeine	2.2	1.1	1.4	0.6	0.1	1.1
– Methadone	1.2	0.5	0.4	np	np	np
– Fentanyl, pethidine, tramadol	1.2	0.6	0.5	np	np	np
– Pharmaceutical opioids	3.0	1.4	1.7	0.9	0.2	1.4
Cannabinoids	1.6	0.8	0.7	np	np	np
Benzodiazepines	3.5	1.3	1.9	1.0	0.4	1.6
Anti-depressants	2.1	0.9	1.1	0.4	0.1	1.0
Anti-psychotics	1.2	0.4	0.5	0.4	0.1	np
Stimulants	2.5	1.5	1.4	0.8	0.3	1.2
Alcohol	1.7	0.8	1.3	0.8	0.3	np

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

The trends in the number of unintentional drug-induced deaths (Figure 12) mirror those among all drug-induced deaths. Opioids, benzodiazepines, and stimulants have the highest overall involvement in unintentional drug-induced deaths, and all have increased substantially over the past 15 years. There has also been a substantial increase in the number of unintentional drug-induced deaths due to anti-depressants, although the rise has been steadier. More detailed analysis for these drug groups is provided in Chapter 7. While the overall trend for alcohol is upwards, since 2009 this appears to be stabilising.

Figure 12. Number of unintentional drug-induced deaths by drug type, 2001-2019
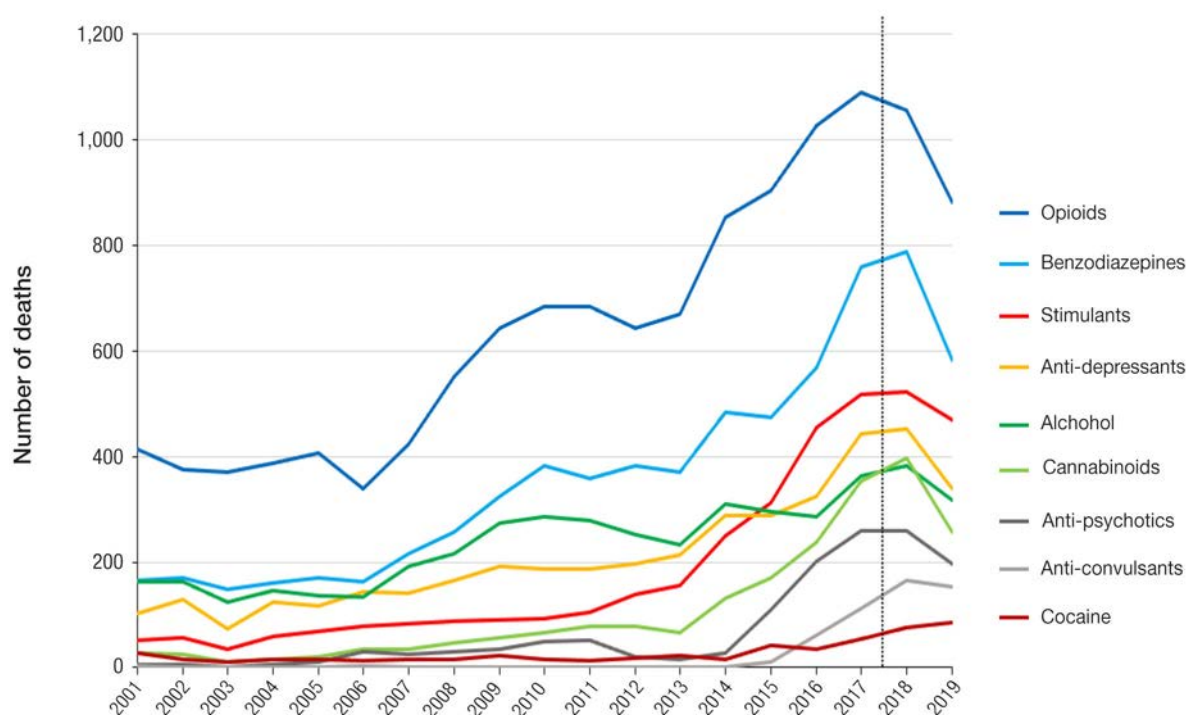
Note: Data to the right of the dotted line (2018 and 2019 data) are preliminary, and likely to rise.

Figure 13 represents the number of unintentional drug-induced deaths involving each drug type as a proportion of the total number of unintentional drug-induced deaths each year.

While opioids accounted for the highest proportion of unintentional drug-induced deaths in 2019 (53.6%), their relative contribution to these deaths has not increased substantially since 2001, when they accounted for 42.1% of unintentional drug-induced deaths. Benzodiazepines, on the other hand, were involved in one-third (35.4%) of unintentional drug-induced deaths in 2019 – more than double the 16.8% in 2001. The contribution of anti-depressants to the total number of unintentional drug-induced deaths also doubled over time, from 10.5% in 2001 to 20.7% in 2019.

The two largest increases over time in the proportion of unintentional drug-induced deaths were seen for cannabinoids and stimulants. In 2019, cannabinoids were involved in 15.6% of such deaths; in 2001, this was only 2.8%. While the proportion of unintentional drug-induced deaths that involved cannabinoids remains low, the increase over time is substantial. Similarly, stimulants increased from 5.4% of unintentional drug-induced deaths in 2001 to 28.6%, accounting for almost three in ten of these deaths.

Figure 13. Unintentional drug-induced deaths by drug type, 2001-2019, proportion of unintentional deaths (%)
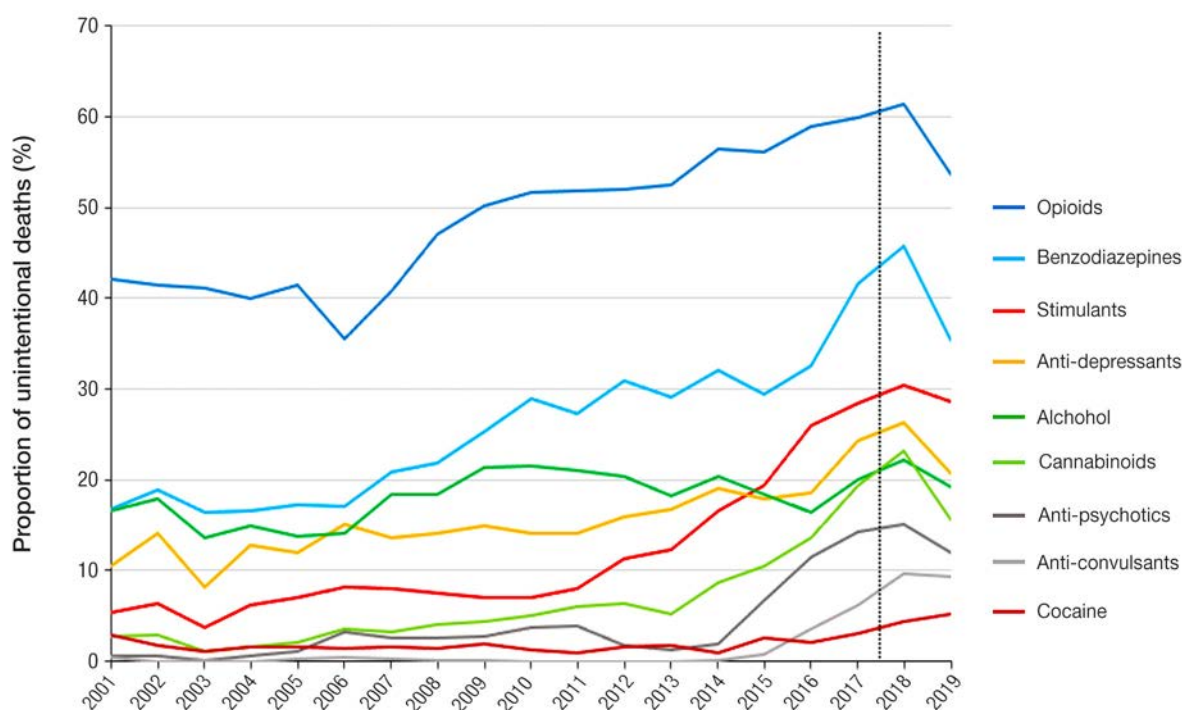
Note: Data to the right of the dotted line (2018 and 2019 data) are preliminary, and likely to rise. The percentages do not sum to 100% as more than one drug type may have been detected.

6.1. Demographic patterns in unintentional drug-induced deaths

There are distinct age-related patterns of harms in unintentional drug-induced deaths, as shown in Figure 14. Since 2001, deaths in the 20-29 age group have decreased, from 212 in 2001 to 160 in 2019, a decrease of 24.5%. In contrast, deaths in the 30-39, 40-49, and 50-59 age groups have all increased substantially, with the greatest increase observed in those aged 50-59 (from 106 in 2001 to 335 in 2019, an increase of 216.0%). Deaths among those aged 60-69 have more than doubled, from 91 in 2001 to 188 in 2019 – an increase of 106.6%.

The highest number of deaths is seen in the 40-49 age group, with 430 unintentional drug-induced deaths in 2019, accounting for 26.2% of all unintentional drug-induced deaths in 2019 (an increase of 124.0% since 2001). Only one in ten (11.1%) unintentional deaths recorded was among those aged under 30, while one in five (20.7%) was among those aged 60 and above.

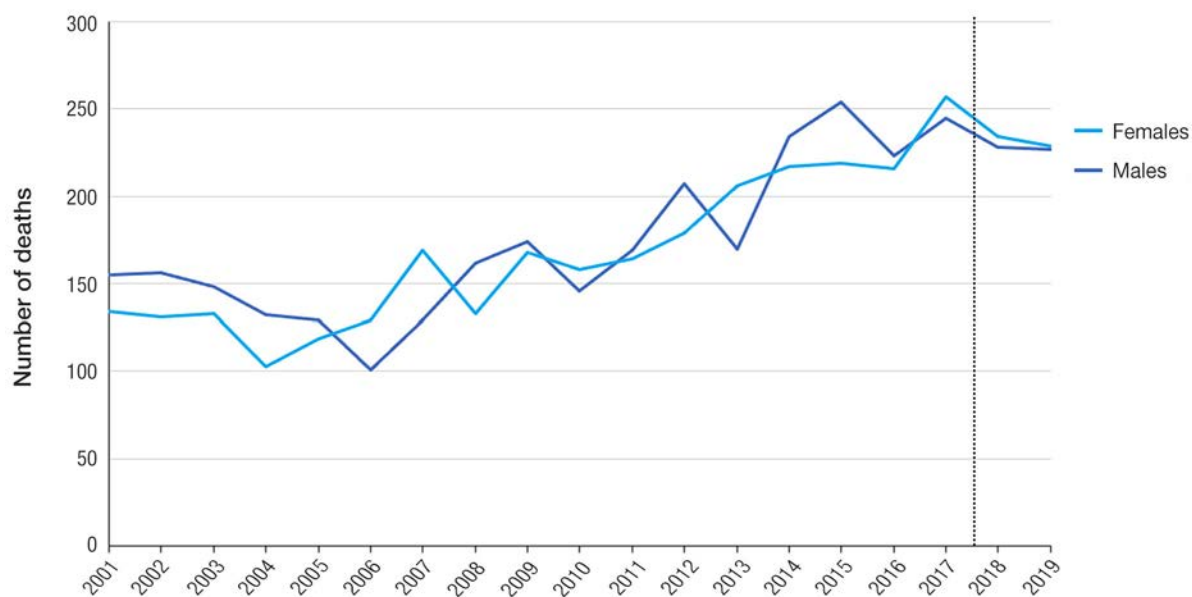**Figure 14. Number of unintentional drug-induced deaths by age group, 2001-2019**
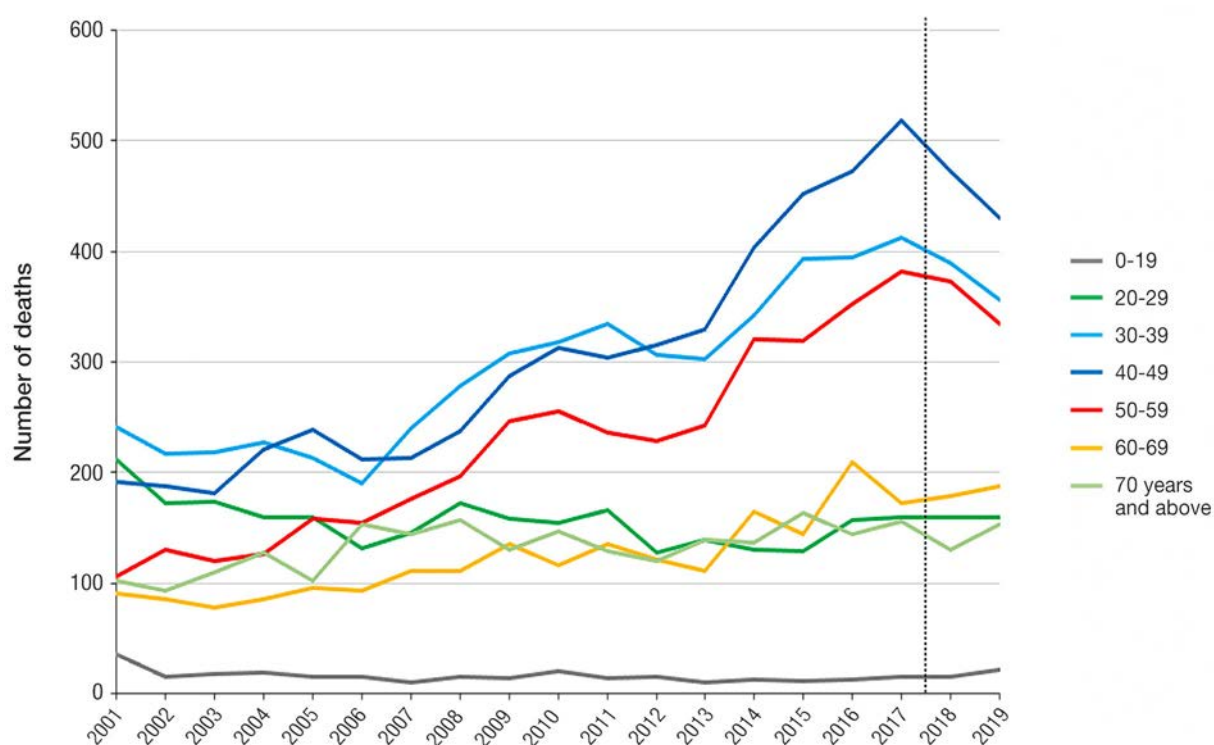
Note: Data to the right of the dotted line (2018 and 2019 data) are preliminary, and likely to rise.

Figure 15 shows the median age of unintentional drug-induced deaths for different types of drug over four periods since 2000. For each drug type except cocaine, there is a clear pattern of increasing median age at death over the two decades. The largest increases in median age have occurred for drug-induced deaths involving cannabinoids (with the median age increasing from 28.7 years in 2000-2004 to 41.9 years in 2015-2019) and heroin (increasing from a median age of 30.7 years to 41.8 years).

The highest median ages at death in 2015-2019 were seen for alcohol (45.6 years of age) and anti-depressants (45.1 years), while the lowest was recorded for cocaine (34.7 years).

Figure 15. Unintentional drug-induced deaths, by drug type and median age
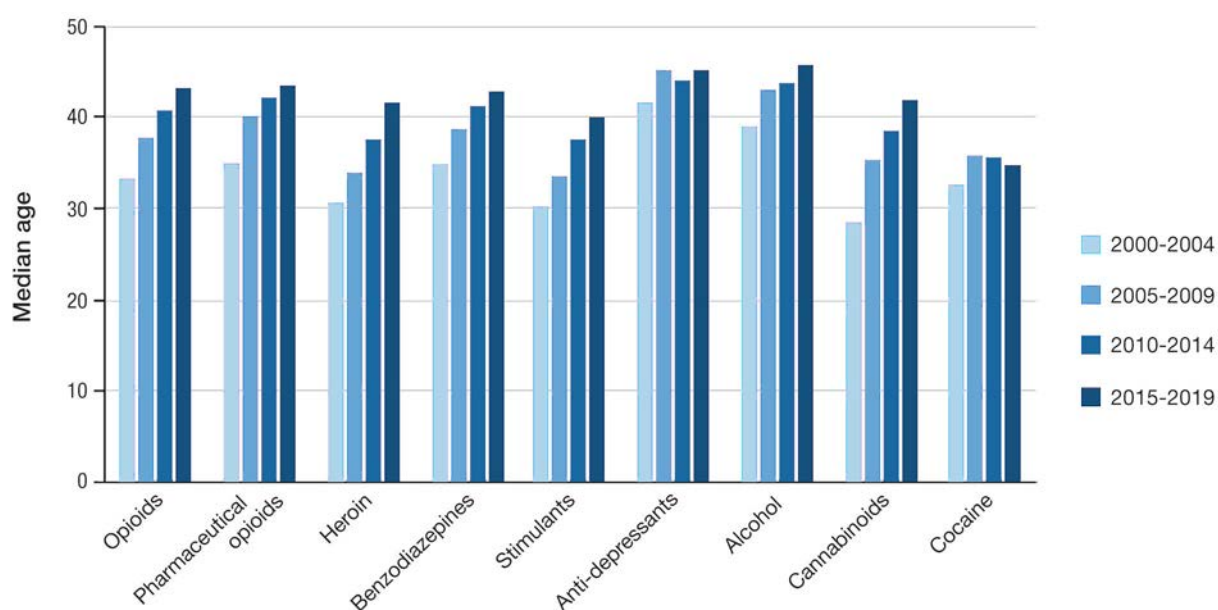
Note: Data are aggregated over the five-year periods.

Unintentional drug-induced deaths remain more common for males than females, though long-term trends are increasing for both sexes (Figure 16). Males typically account for around two-thirds of unintentional drug-induced deaths but the number of deaths for men has increased more rapidly than it has for women over the past five years. Since 2012, the number of unintentional deaths among males increased by 43.4%, from 813 in 2012 to 1,166 in 2019. During the same period, the number of deaths among females increased by 12.7%, from 424 to 478.

In 2019, males accounted for 70.9% of unintentional drug-induced deaths.

Figure 16. Number of unintentional drug-induced deaths by sex, 2001-2019
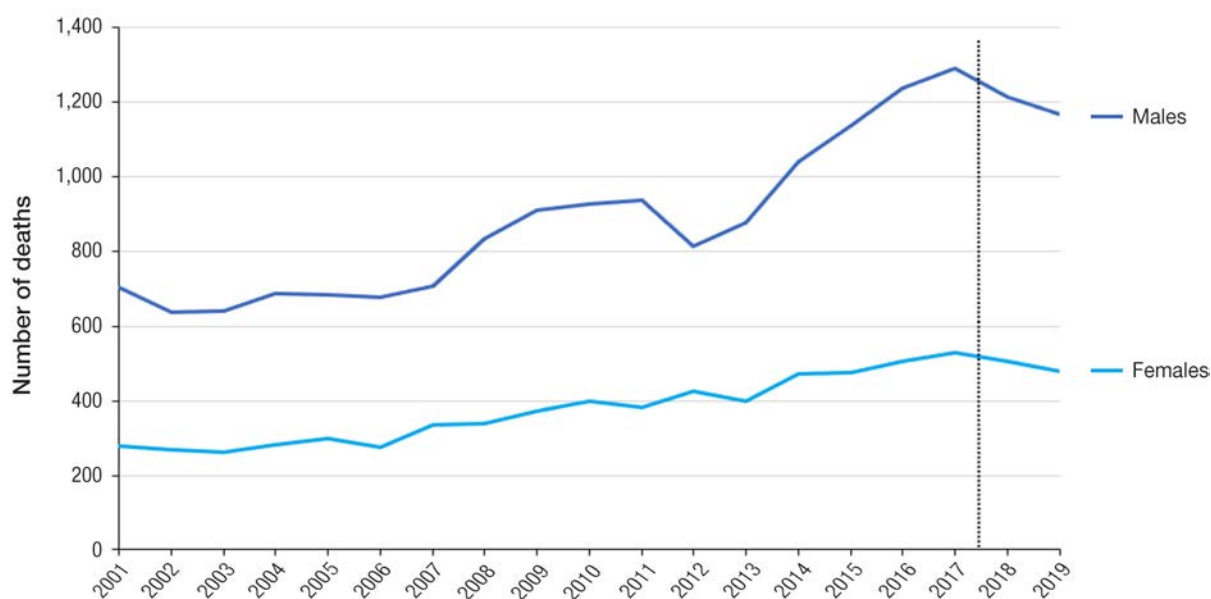
Note: Data to the right of the dotted line (2018 and 2019 data) are preliminary, and likely to rise.

The rate of unintentional drug-induced death has been higher for Aboriginal Australians than non-Aboriginal Australians over the entire period for which data are presented in this report (Figure 17).[15] Rates of deaths for non-Aboriginal Australians have gradually increased from 2001 to 2019 (from 4.9 to 5.9 deaths per 100,000 population). For Aboriginal Australians, the rate of deaths showed a downward trend until 2009, but increased between 2009 and 2019, from 9.5 to 20.0 deaths per 100,000 population – the equal highest rate during this period. These rate calculations may, however, be more variable due to smaller overall numbers of deaths among Aboriginal Australians.

Figure 17. Unintentional drug-induced deaths by Indigenous status, 2001-2019, rate per 100,000 population (NSW, Qld, SA, WA, NT)
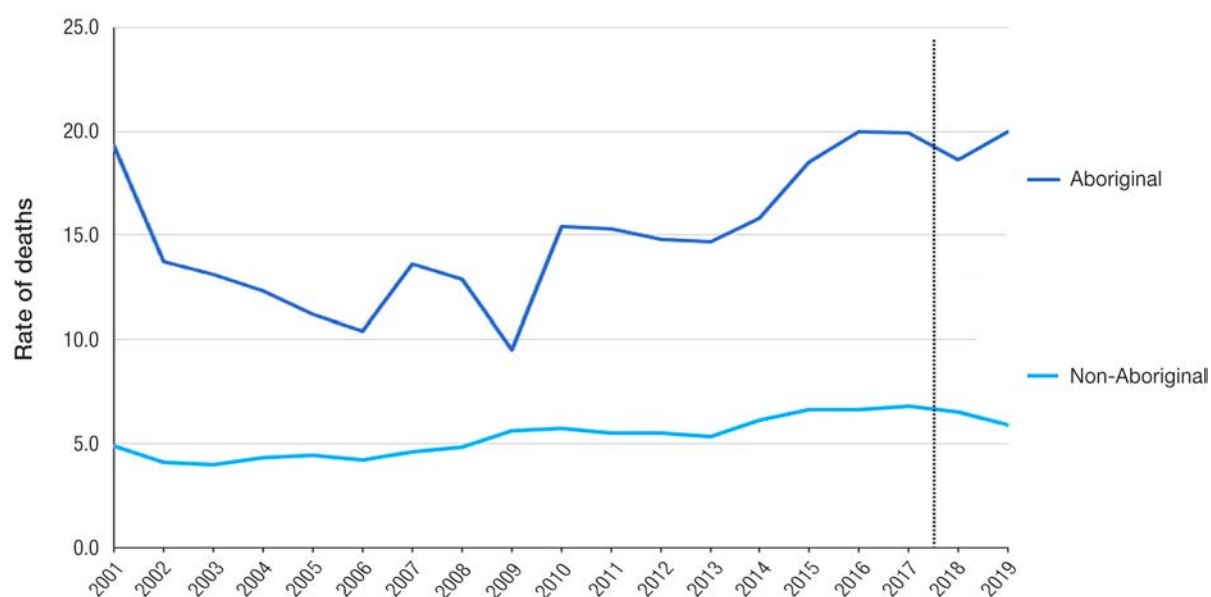
Note: Data to the right of the dotted line (2018 and 2019 data) are preliminary, and likely to rise.

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

In the five-year period to 2019, the rate of unintentional drug-induced deaths was higher for Aboriginal people in the five jurisdictions in every drug type category (Figure 18). The difference was most pronounced for stimulants, with a rate of 6.5 per 100,000 Aboriginal people compared with 1.7 per 100,000 non-Aboriginal people. The difference between cohorts was also large for cannabinoids, with a rate of 3.6 per 100,000 Aboriginal people compared with 1.0 per 100,000 non-Aboriginal people.

These data are presented aggregated across the five-year period, as many numbers were too small when differentiated into single years to enable reliable calculations.

Figure 18. Unintentional drug-induced deaths by drug type and Indigenous status, 2015-2019, rate per 100,000 population (NSW, Qld, SA, WA, NT)
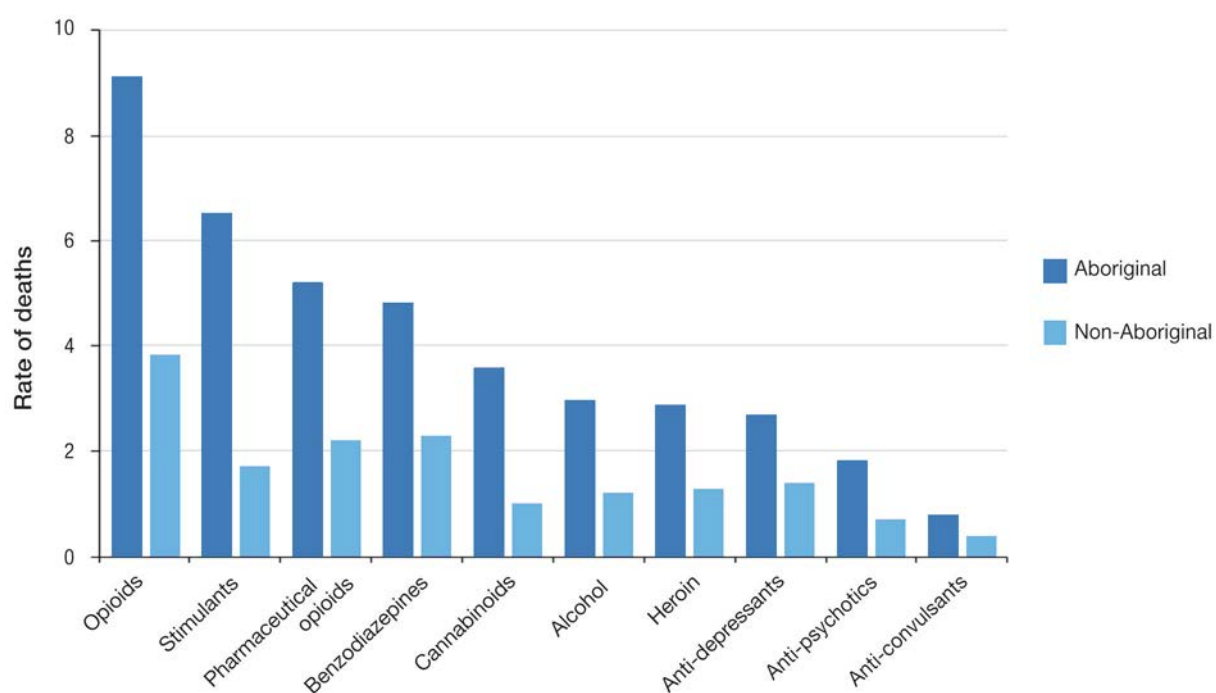
Note: Data are aggregated over the five-year period.

During the five years from 2015 to 2019, there were 515 unintentional drug-induced deaths among Aboriginal people and 5,432 among non-Aboriginal people in those states for which data are available (Figure 19). Opioids are the largest group of drugs identified in unintentional drug-induced deaths for both groups, accounting for more than half of these deaths among Aboriginal (50.5%) and non-Aboriginal (56.5%) people during the five years. However, there are some notable differences between the two cohorts. For Aboriginal people, the next most common drug involved in unintentional drug-induced deaths is stimulants, accounting for 36.1% of deaths, followed by benzodiazepines (26.0%). The reverse is observed among non-Aboriginal people: benzodiazepines are the next most common drug involved in unintentional drug-induced deaths during this period, accounting for one-third (33.6%) of all deaths, followed by stimulants (24.4%).

Figure 19. Number of unintentional drug-induced deaths by drug type and Indigenous status, 2015-2019 (NSW, Qld, SA, WA, NT)
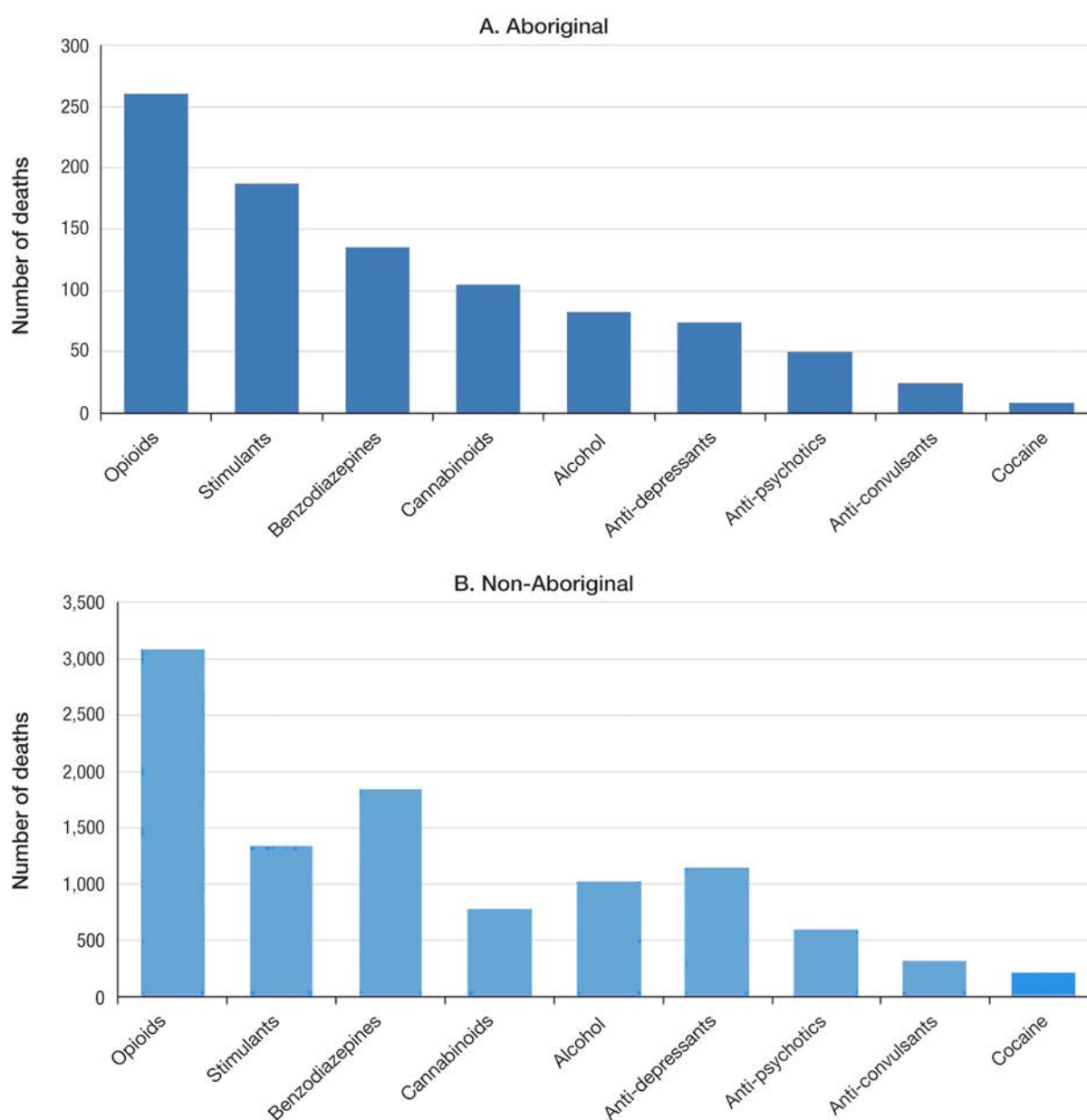
Note: Data are aggregated over the five-year period.

Aboriginal people were less likely to experience unintentional drug-induced deaths involving alcohol (15.7% compared with 18.5%) and anti-depressants (14.2% compared with 20.8%), while unintentional drug-induced deaths among Aboriginal people were more likely to involve cannabinoids (20.0% compared with 14.0%).

While the age distribution of unintentional drug-induced deaths shows a broadly similar pattern by Indigenous status, there is some notable variation (Figure 20). Among Aboriginal people, the proportion of deaths is skewed more strongly to the younger ages: 41% of deaths were seen among people aged 20 to 39, with 10% among people aged 60 and older. Among non-Aboriginal people, 30% of deaths were among those aged 20 to 39, with 21% among those aged 60 and older.

The different age distributions of unintentional drug-induced deaths for the two cohorts may reflect the younger age distribution of the Aboriginal Australian population as a whole.

Figure 20. Age distribution (%) of unintentional drug-induced deaths by Indigenous status, 2015-2019 (NSW, Qld, SA, WA, NT)
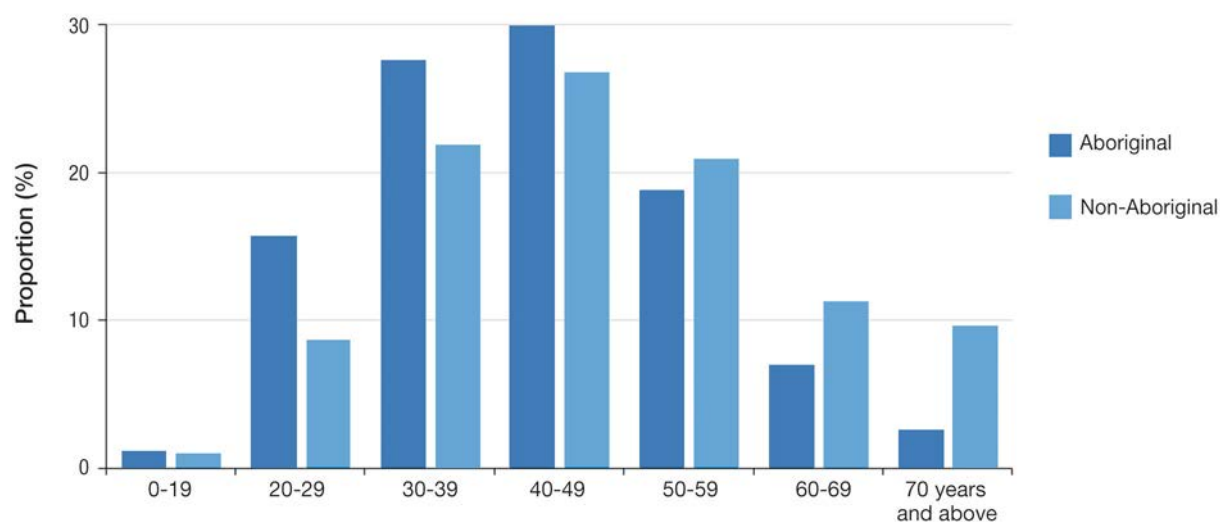
Note: Data are aggregated over the five-year period.

While unintentional drug-induced deaths occur in all socio-economic areas of usual residence, there is a clear socio-economic gradient visible in Figure 21. In the aggregated data from 2015 to 2019, 1,762 unintentional drug-induced deaths occurred in the lowest (most disadvantaged) area of usual residence, compared with 460 deaths in the highest (most advantaged) area. Decile 1 accounted for one in five such deaths (20.6%), while one in 20 deaths (5.4%) occurred in Decile 10.

Figure 21. Number of unintentional drug-induced deaths by socio-economic status of area of usual residence, 2015-2019
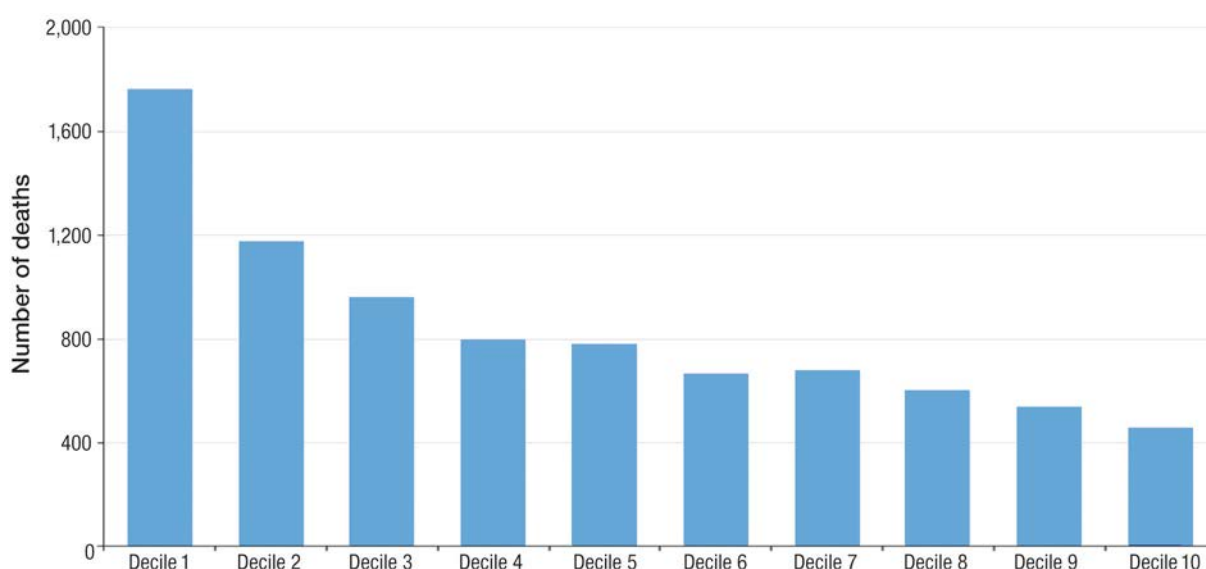
Note: Decile 1 is the most disadvantaged area and Decile 10 is the most advantaged. SEIFA IRSAD: Socio-Economic Indexes for Areas (SEIFA) using the Index of Relative Socio-Economic Advantage and Disadvantage (IRSAD). Data are aggregated over the five-year period.

There are substantial differences across drug types in the relationship between drug-induced deaths and socio-economic status of areas of usual residence, as shown in Figure 22. Data are presented in quintiles, dividing the total into five equal groups.[16] Quintile 1 is the most disadvantaged area in terms of socio-economic status, while Quintile 5 is the most advantaged.

There is a clear relationship between drug-induced deaths and socio-economic status of the area of usual residence. For all drug types except cocaine, the highest proportion of deaths occurs in the lowest – or most disadvantaged – area. The greatest disparity in deaths across areas is seen for methadone, which has the highest proportion of people in Quintile 1 areas (40.3%) and second lowest proportion in Quintile 5 areas (8.6%).

In contrast to the other drug types, for cocaine, as the socio-economic status of the area increases from disadvantaged to more advantaged, the proportion of drug-induced deaths in each quintile increases, with 17% of unintentional drug-induced deaths involving cocaine being observed in Quintile 1 areas, compared with one-third (32.0%) in Quintile 5 areas.

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

Figure 22. Unintentional drug-induced deaths by drug type and socio-economic status of area, percentage distribution across quintiles, 2015-2019
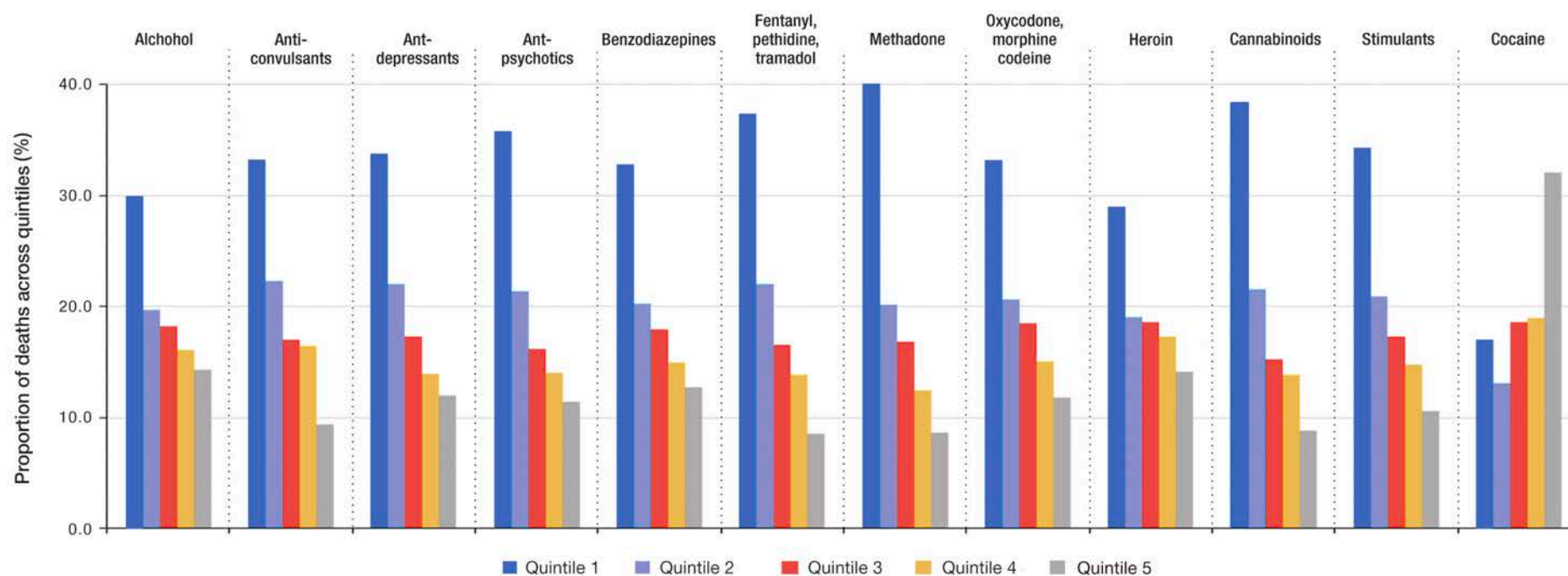
Note: Quintile 1 is the most disadvantaged and Quintile 5 is the most advantaged. SEIFA IRSAD: Socio-Economic Indexes for Areas (SEIFA) using the Index of Relative Socio-Economic Advantage and Disadvantage (IRSAD). Data are aggregated over the five-year period.

6.2. Poly-substance use in unintentional drug-induced deaths

From 2013 to 2018 there was a sharp increase in the number of unintentional drug-induced deaths that involve four or more types of substances. While the number of these deaths decreased from 698 in 2018 to 474 in 2019, there was nonetheless a trebling in the number of such deaths since 2013 (Figure 23). After two years of decreasing numbers of unintentional drug-induced deaths involving a single drug type, 2019 data show a large jump, from 302 deaths in 2018 to 431 in 2019.

Deaths involving three drug types have slowly increased from 95 in 2007 to 239 in 2019, while those involving the detection of two drug types continue to decrease slowly from a high of 277 in 2012. Unintentional drug-induced deaths involving alcohol on its own have remained stable.

In each year since 2017, there have been more unintentional deaths involving four or more substance types than single drug types, although the gap between the two is narrowing. This may be due in part to the number of drugs that can be reliably detected using toxicological testing, but may also reflect increasing trends of poly-pharmacy use.[17]

Figure 23. Number of unintentional drug-induced deaths, by number of drug types detected, 2007-2019
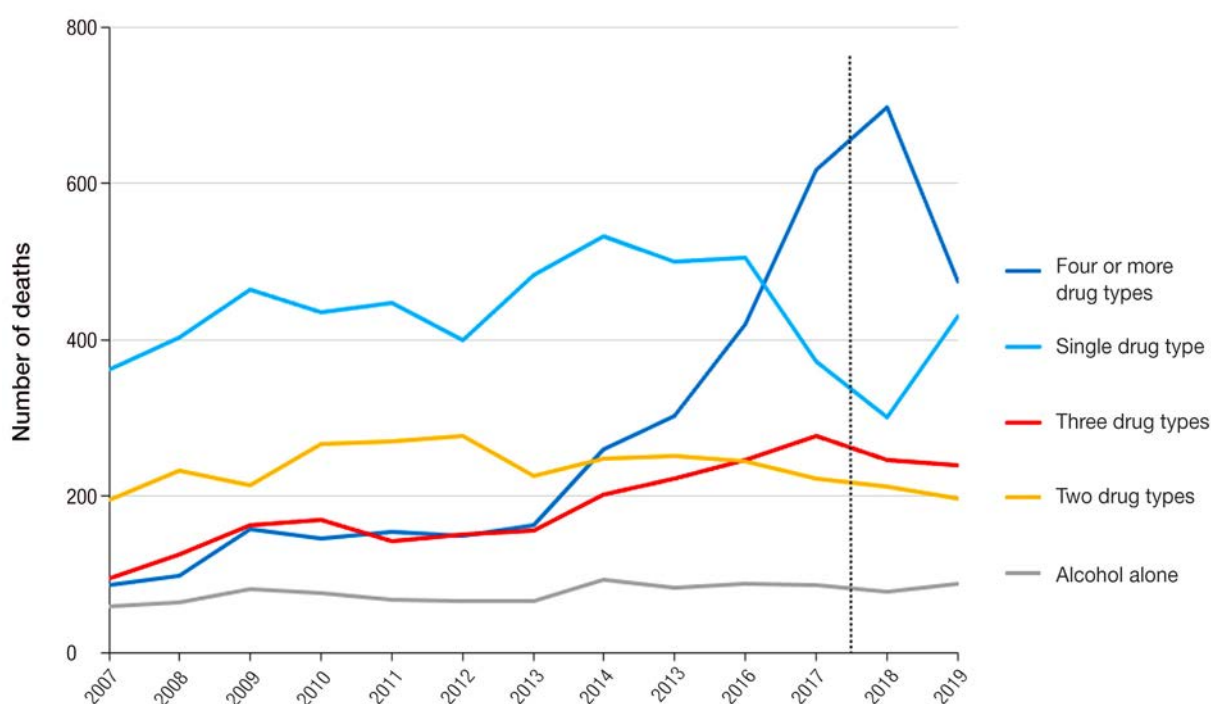
Note: Data to the right of the dotted line (2018 and 2019 data) are preliminary, and likely to rise. Data are only available from 2007.

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[17] Page, A. T., Falster, M. O., Litchfield, M., Pearson, S. A. and Etherton-Beer, C. (2019). Polypharmacy among older Australians, 2006–2017: A population-based study. *Medical Journal of Australia*, 211(2): 71-75.

Figure 24 shows that deaths associated with multiple drug types are far more common than those associated with a single type of drug. Over the five years to 2019, more than half of all unintentional drug-induced deaths (53.6%) involved three or more drug types, with less than one-third (30.2%) involving one drug type only.

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

Figure 24. Number of unintentional drug-induced deaths, single drug type and multiple drug types detected, 2015-2019
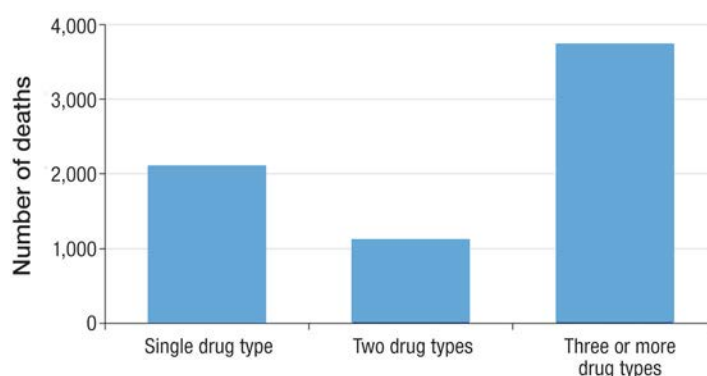
Note: Data are aggregated over the five-year period.

Figure 25 provides more detail about the number of drug types involved in poly-substance drug-induced deaths over the five years to 2019, showing the number of deaths involving four, five, six and seven or more different drug types. While more deaths were associated with a single drug type than any other specific number of drug types, there are nonetheless many deaths that involve a large number of types of substances. For example, 221 unintentional drug-induced deaths involved seven or more different types of drug and 437 involved six types of drugs – together, these accounted for almost one in ten unintentional drug-induced deaths (9.4%).

Over the five-year period, deaths involving four or more substance types accounted for more than one-third of unintentional drug-induced deaths (36.0%).

Figure 25. Number of unintentional drug-induced deaths, by specific number of drug types detected, 2015-2019
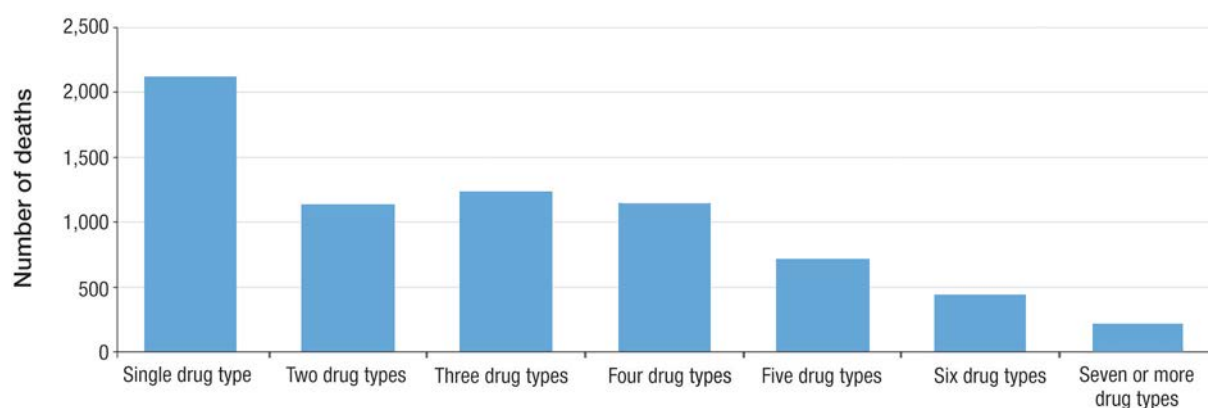
Note: Data are aggregated over the five-year period.

There are clear sex differences in the number of unintentional drug-induced deaths involving multiple drugs types, although the overall age distribution for the two cohorts is broadly similar. Figure 26 shows that male poly-substance deaths are more likely to be recorded among younger cohorts aged 20 to 39 (43.4% compared with 29.7% for females), while the older cohorts aged 50 and above account for a higher proportion of female poly-substance deaths (36.5% compared with 24.3% for males).

Unintentional poly-substance deaths are most commonly seen in middle age. For both males and females, the most common age group in poly-substance unintentional deaths is the 40-49 group, comprising 31.3% of deaths for males and 33.2% for females. While the next most common age group for males is 30-39 year olds (accounting for 30.9% of poly-substance deaths), for females the next most common cohort is those aged 50-59 years, who account for one-quarter (24.9%) of such deaths.

Figure 26. Number of unintentional drug-induced deaths with multiple drug types detected, by age and sex, 2015-2019
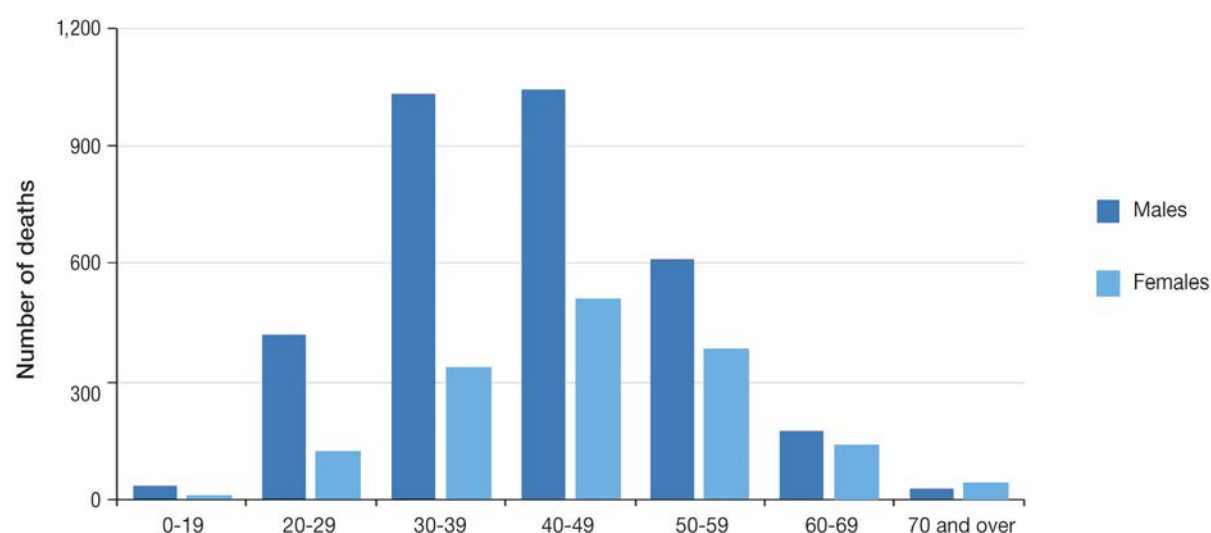
Note: Data are aggregated over the five-year period.

Figure 27 places the age and sex distribution of unintentional poly-substance deaths in the context of all unintentional drug-induced deaths, showing the proportion of unintentional deaths for each age and sex group that was accounted for by poly-substance deaths during the period 2015-2019.

Among males, the age group in which poly-substance deaths accounted for the highest proportion of unintentional deaths was the 20-29 cohort, where more than seven in ten unintentional deaths (71.2%) involved multiple drug types. The next highest proportions of unintentional drug-induced deaths that involved multiple drug types were seen among the 30-39 age group (69.9%) and the 40-49 cohort (63.6%).

Among females, the highest proportions of unintentional drug-induced deaths that involved multiple drug types were seen among the 40-49 age group (72.2%) and the 30-39 cohort (71.6%). Around two-thirds of unintentional drug-induced deaths among females over the five-year period involved multiple drug types among those aged 20-29 (67.0%) and 50-59 (65.6%).

Notable sex differences may be seen among the older age cohorts. For those aged 60-69, poly-substance deaths accounted for 29.5% of unintentional drug-induced deaths among males but 46.6% among females. Similarly, these deaths accounted for 5.2% of unintentional drug-induced deaths among males but 16.4% among females for those aged 70 and over.

Figure 27. Unintentional drug-induced deaths that involve multiple drug types, as a proportion of all unintentional drug-induced deaths, by age and sex, 2015-2019
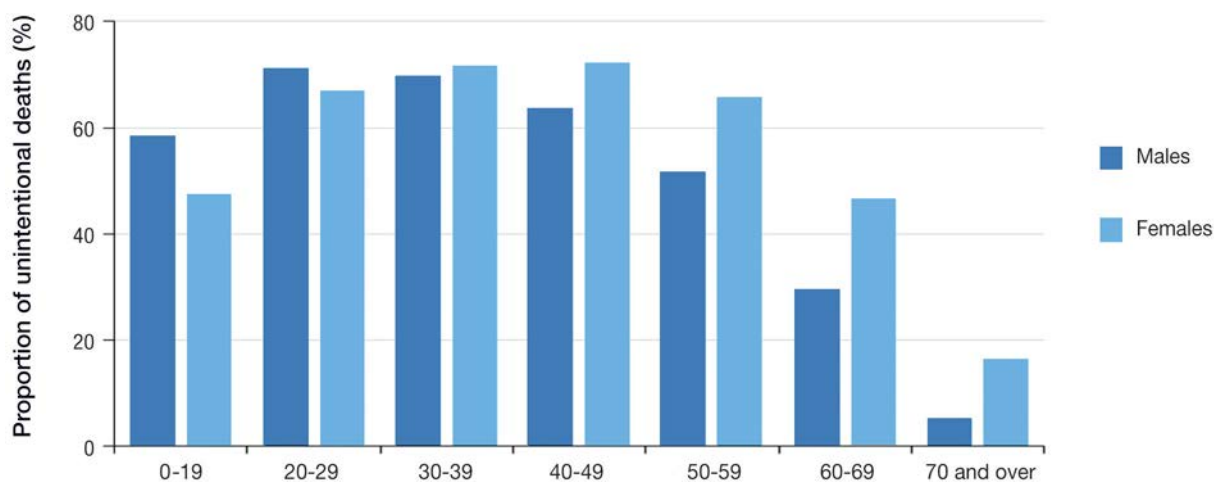
Note: Data are aggregated over the five-year period.

The most common drug type involved in unintentional poly-substance deaths over the five years to 2019 was opioids, which was involved in 83.2% of such deaths. Pharmaceutical opioids were involved in half (49.6%) of all poly-substance deaths, heroin was involved in almost one-third (30.7%) of these deaths and methadone in one in five (19.3%) of such deaths.

The only other drug type that was involved in more than half of poly-substance deaths was benzodiazepines, which were involved in almost two-thirds (64.3%) of these deaths.

Anti-depressants (36.5%) and stimulants (32.1%) were each involved in about one-third of poly-substance deaths, while alcohol was involved in 25.0% of poly-substance deaths. The remaining drug types accounted for one-fifth or fewer of these deaths (Figure 28).

That more than one-third of unintentional poly-substance deaths involved anti-depressants suggests the susceptibility of patients with co-occurring mental health issues to fatal overdose.

The average number of additional drug types detected in these deaths is high, ranging from 3.8 other drug types for poly-substance deaths involving alcohol to 4.9 other drug types for poly-substance deaths involving anti-convulsants.

Figure 28. Proportion of unintentional drug-induced deaths with multiple drug types detected, by drug type involved, 2015-2019
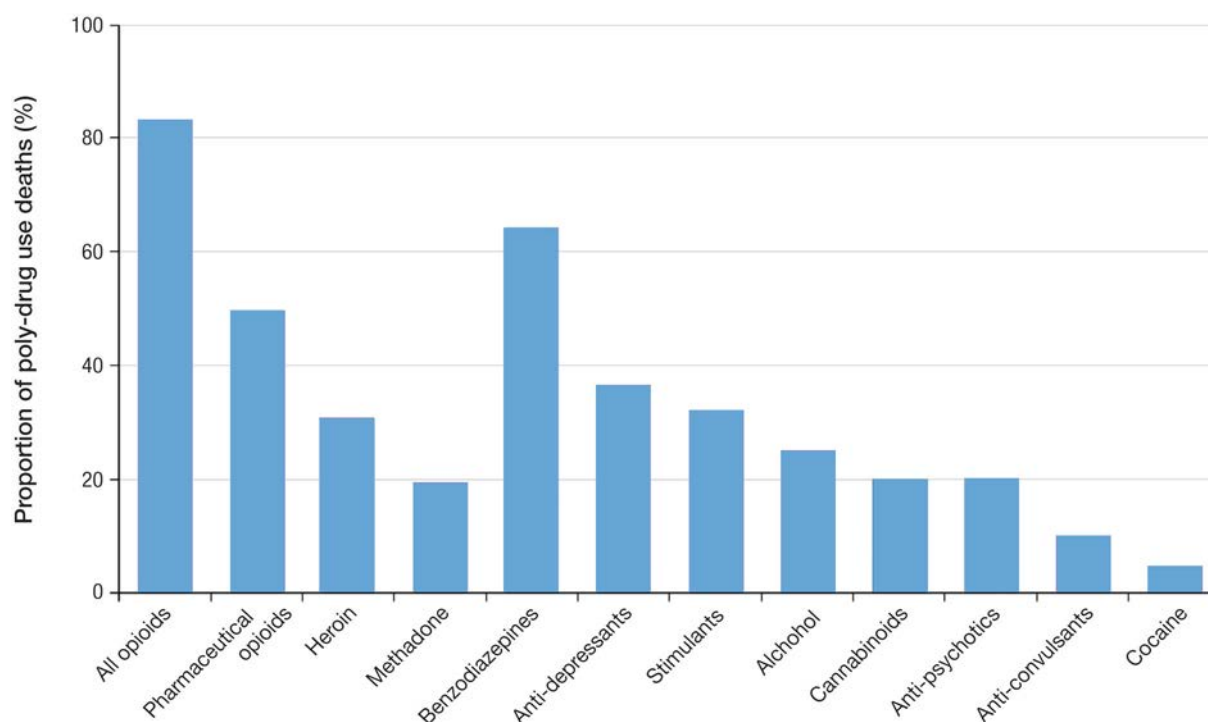
Note: Data are aggregated over the five-year period.

Table 9 shows the range of drug types involved in unintentional poly-substance deaths. In particular, it highlights the role of poly-substance use of pharmaceutical drugs in these deaths and the vulnerability of people taking medication for mental health issues when also taking benzodiazepines and opioids in particular.

A number of key findings on pharmaceutical drugs may be seen in Table 9:

- Among unintentional poly-substance deaths involving pharmaceutical opioids, two-thirds (67.8%) also involved benzodiazepines and 39.6% involved anti-depressants.

- Among unintentional poly-substance deaths involving methadone, almost three-quarters (73.2%) also involved benzodiazepines, 37.4% involved anti-depressants and one-third (33.7%) involved pharmaceutical opioids.

- Among unintentional poly-substance deaths involving benzodiazepines, 86.2% also involved pharmaceutical opioids and 40.2% involved anti-depressants.

- Among unintentional poly-substance deaths involving anti-depressants, 70.8% also involved benzodiazepines and more than half (53.7%) also involved pharmaceutical opioids.

- Among unintentional poly-substance deaths involving anti-psychotics, 79.0% also involved pharmaceutical opioids and 71.4% involved benzodiazepines.

- Among unintentional poly-substance deaths involving anti-convulsants and neuropathic pain modulators, almost all (90.2%) also involved pharmaceutical opioids and 73.3% involved benzodiazepines.

Table 9. Unintentional poly-substance deaths, proportion (%) of each drug type where additional drug types were detected, by additional drug type, 2015-2019

Involving	Drug type as a proportion (%) of all poly-drug use deaths:										
	Pharmaceutical opioids	Methadone	Heroin	Benzo-diazepines	Anti-depressants	Stimulants	Alcohol	Cannabinoids	Anti-psychotics	Anti-convulsants	Cocaine
Pharmaceutical opioids	–	33.7	25.8	86.2	53.7	79.2	69.0	84.1	79.0	90.2	70.4
Methadone	13.1	–	11.6	21.9	19.8	18.2	11.2	23.0	21.1	19.4	6.0
Heroin	16.0	18.5	–	30.5	21.3	35.8	27.5	35.3	24.5	25.3	9.4
Benzodiazepines	67.8	73.2	63.7	–	70.8	55.4	59.1	66.6	71.4	73.3	53.2
Anti-depressants	39.6	37.4	25.3	40.2	–	25.0	33.2	30.0	47.3	48.5	14.2
Stimulants	26.5	30.2	37.3	27.6	21.9	–	16.1	42.8	27.4	23.8	41.6
Alcohol	19.8	14.6	22.3	23.0	22.8	12.6	–	19.6	19.6	12.4	27.9
Cannabinoids	18.2	24.0	23.1	20.9	16.6	26.9	15.7	–	19.4	19.4	12.0
Anti-psychotics	19.5	22.0	16.0	22.3	26.1	17.2	15.7	19.3	–	28.3	8.6
Anti-convulsants and neuropathic pain modulators	12.8	13.5	6.5	11.7	13.7	7.6	5.1	9.9	14.5	–	2.6
Cocaine	3.6	1.5	6.1	4.0	1.9	6.2	5.3	2.9	2.0	1.2	–

7. Analysis of specific drug types

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

7.1. Opioids

This is a broad group that includes pharmaceutical opioids (that can be further differentiated into fentanyl / pethidine / tramadol, and oxycodone / morphine / codeine), heroin, methadone and opium. Given that the type of opioid may be related to the characteristics of the people who died, demographic factors are presented by opioid type where possible.

There were 882 unintentional drug-induced deaths involving opioids in 2019, equating to 53.6% of all unintentional drug-induced deaths. Opioids (collectively) are the group of drugs most commonly identified in unintentional drug-induced deaths, however, this is predominantly due to heroin and oxycodone / morphine / codeine (Figure 29).

In 2019, there were 422 unintentional drug-induced deaths involving heroin (representing 47.8% of unintentional drug-induced deaths involving opioids) and 313 involving oxycodone / morphine / codeine (35.5% of unintentional drug-induced deaths involving opioids). Further, in 2019 there were 170 deaths involving methadone (19.3% of unintentional drug-induced deaths involving opioids) and 167 unintentional drug-induced deaths involving fentanyl / pethidine / tramadol (18.9% of unintentional drug-induced deaths involving opioids).[18] As a group, pharmaceutical opioids accounted for 48.6% of unintentional drug-induced deaths involving opioids in 2019, with 429 deaths. Opium results are not further analysed as a separate group due to low numbers (0 in 2019).

The number of unintentional drug-induced deaths involving opioids has nearly trebled in the last 14 years, increasing from 338 in 2006 to 882 in 2019. Over the same period, deaths involving heroin increased by more than 500% (from 67 to 442 in 2019), deaths involving oxycodone / morphine / codeine increased by 84% (from 170 to 313 in 2019), deaths involving methadone doubled (from 85 to 170 in 2019) and deaths involving fentanyl / pethidine / tramadol increased by almost 1,300% (from 12 to 167 in 2019).

The number of unintentional drug-induced deaths involving oxycodone / morphine / codeine has continued to fall since 2017, from 434 to 313 in 2019. This may be due in part to the increased difficulty in accessing codeine following the rescheduling of over-the-counter codeine as a Schedule 4 medicine from 1 February 2018.

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[18] Page, A. T., Falster, M. O., Litchfield, M., Pearson, S. A. and Etherton-Beer, C. (2019). Polypharmacy among older Australians, 2006–2017: A population-based study. Medical Journal of Australia, 211(2): 71-75

Figure 29. Number of unintentional drug-induced deaths by opioid type, 2001-2019
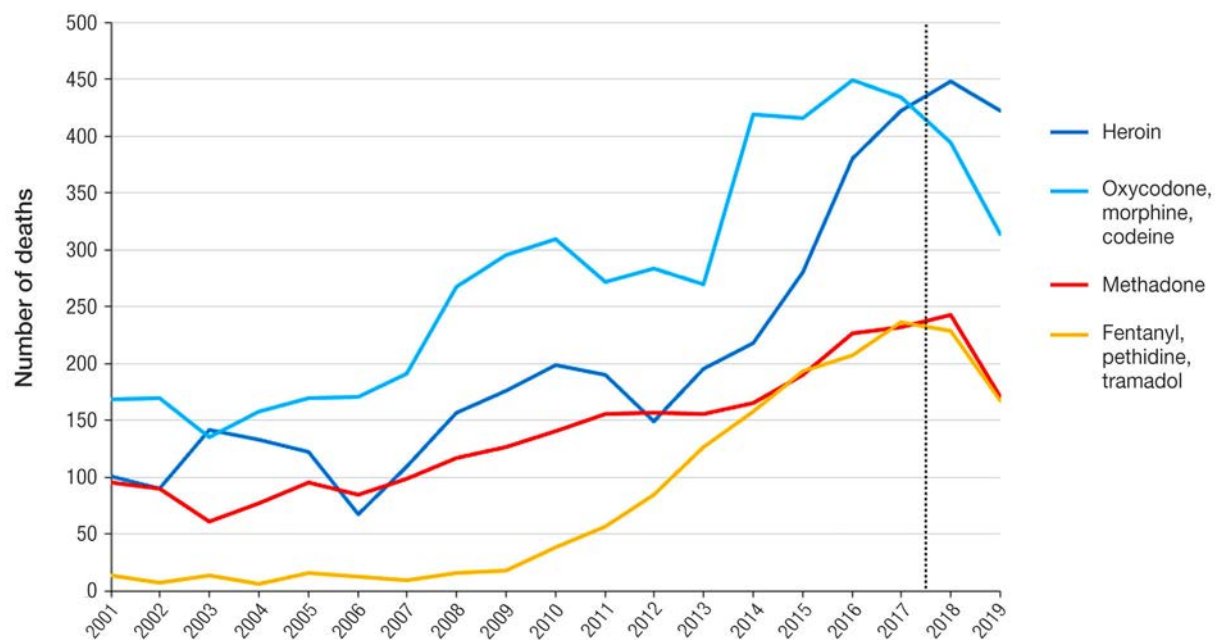
Note: Data to the right of the dotted line (2018 and 2019 data) are preliminary, and likely to rise.

The states show markedly different trends in rates per 100,000 population, by opioid type (Figure 30).[19] For heroin (Figure 30A), the highest rates of unintentional drug-induced deaths have predominantly occurred in Victoria, with a sharp increase from 2012 onwards, resulting in a rate of 2.5 deaths per 100,000 population in 2019. The rate in Western Australia has also been increasing substantially, such that the state had the highest rate in 2019, with 2.7 deaths per 100,000 population.[20]

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

Figure 30 (A & B). Unintentional drug-induced deaths by state for each opioid type, 2001-2019, rate per 100,000 population
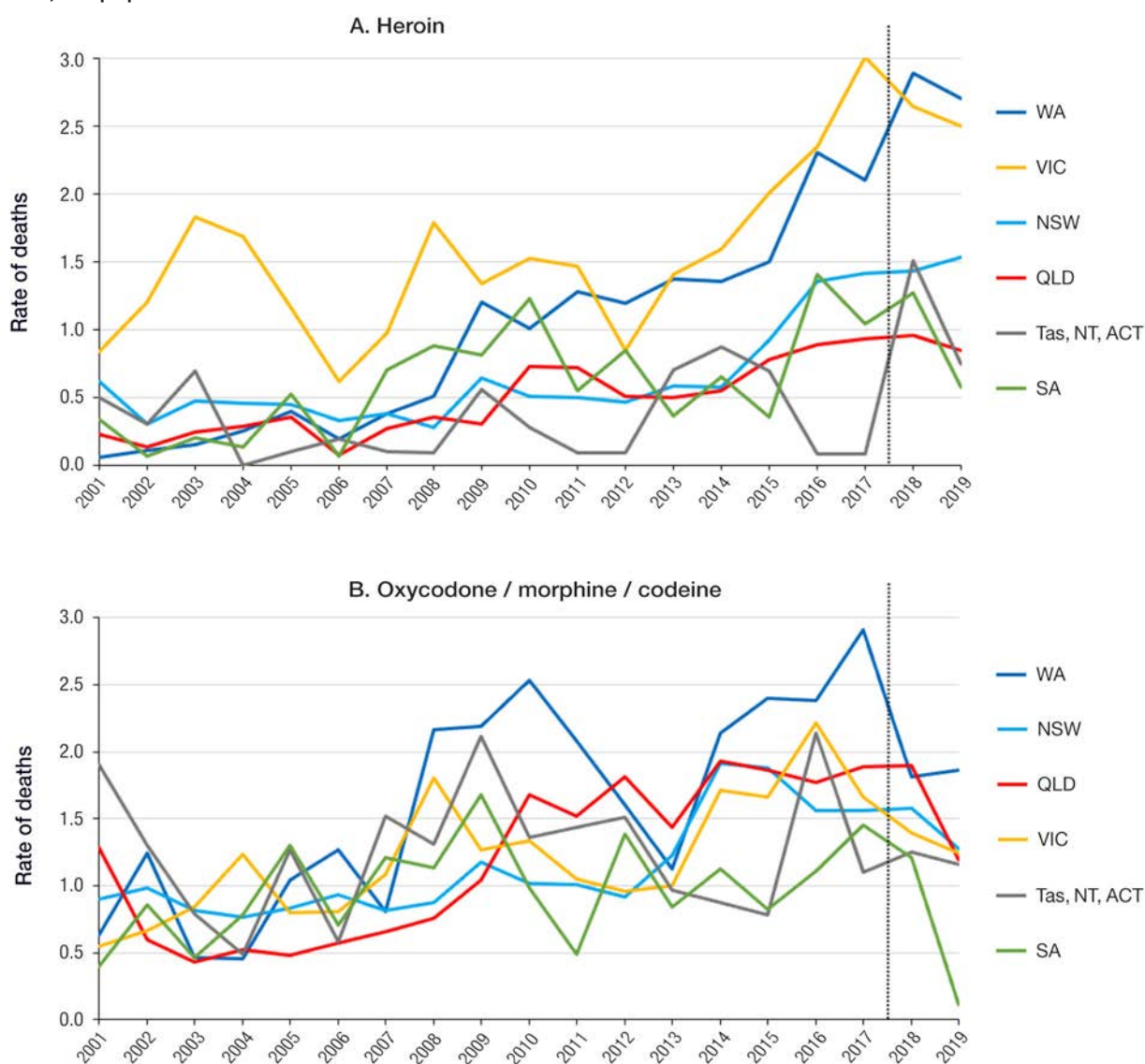
Note: Data to the right of the dotted line (2018 and 2019 data) are preliminary, and likely to rise.

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

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

For methadone (Figure 30C), the rates of unintentional drug-induced death are lower than for heroin or oxycodone / morphine / codeine. Despite substantial variability (and uncertainty) in the rates due to small numbers, the overall trend appears to be increasing in Victoria, which had the highest rate of unintentional drug-induced deaths involving methadone in 2019 (1.0 deaths per 100,000 population). While New South Wales had previously seen a spike in its rate of unintentional drug-induced deaths involving methadone, there was a drop from 1.4 per 100,000 population in 2018 to 0.8 in 2019.

For fentanyl / pethidine / tramadol (Figure 30D), higher rates of deaths in recent years have been observed in Queensland and Western Australia. In 2019, Western Australia had a rate of 1.4 per 100,000 population for unintentional drug-induced deaths involving fentanyl / pethidine / tramadol, while Queensland had a rate of 0.7 deaths per 100,000 population.

Figure 30 (C & D). Unintentional drug-induced deaths by state for each opioid type, 2001-2019, rate per 100,000 population
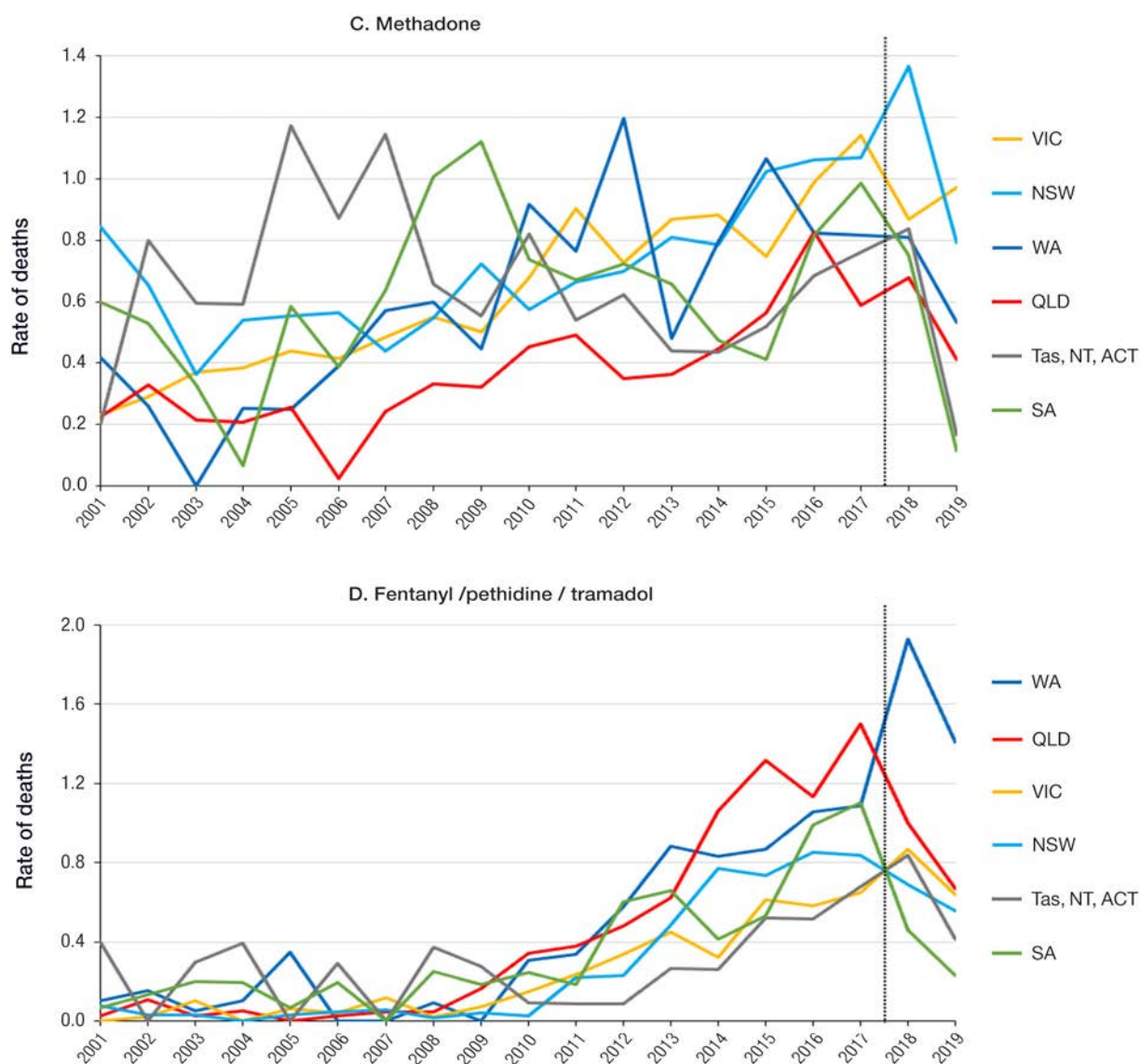
Note: Data to the right of the dotted line (2018 and 2019 data) are preliminary, and likely to rise.

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

In the capital cities (Figure 31A), the number of unintentional drug-induced deaths involving heroin has doubled since 2014 (from 156 to 317 deaths in 2019). Since 2016, the number of deaths involving heroin has exceeded those involving oxycodone / morphine / codeine (with 202 deaths in 2019).

In rural and regional areas (Figure 31B), unintentional drug-induced deaths involving opioids predominantly involve oxycodone / morphine / codeine (105 deaths in 2019). The number of deaths involving heroin in regional and rural areas has increased substantially since 2013 (from 24 to 94 deaths in 2019), while the number involving fentanyl / pethidine / tramadol has steadily increased from 2008 (from only 8 to 63 in 2019).

Figure 31. Number of unintentional drug-induced deaths by opioid type, 2001-2019, within (A) and outside of (B) capital cities
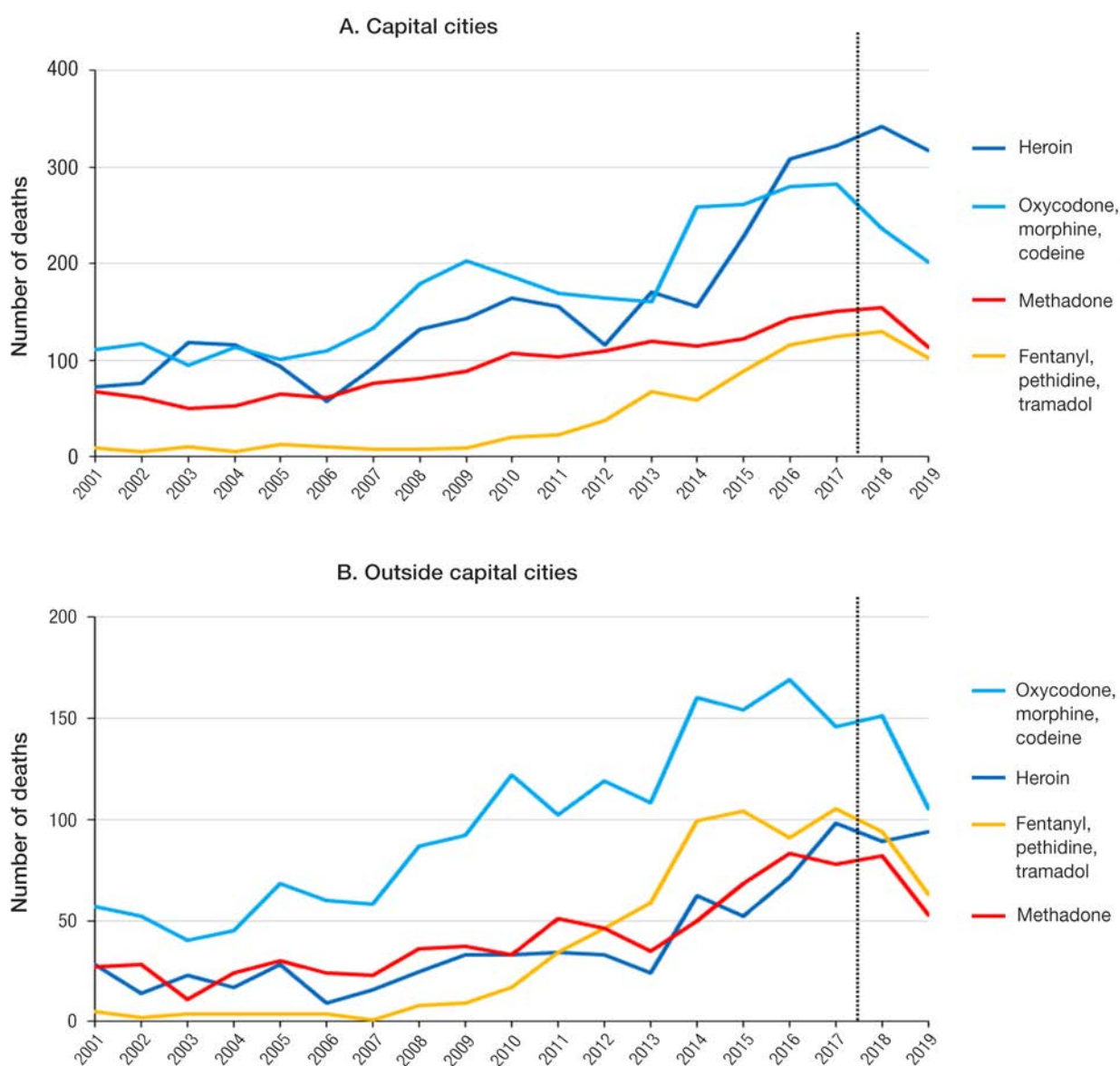
Note: Data to the right of the dotted line (2018 and 2019 data) are preliminary, and likely to rise.

Older age groups are more prevalent in unintentional drug-induced deaths involving pharmaceutical opioids than those involving heroin (Figure 32). In the period 2015 to 2019, the most common age group for unintentional deaths involving heroin was 40-49 (with 640 deaths, or 32.8% of unintentional drug-induced deaths involving heroin), although the number of these deaths in the 30-39 cohort was very similar (634 deaths). The 40-49 age group also reported the most unintentional drug-induced deaths involving pharmaceutical opioids (with 843 deaths, or 30.9% of unintentional deaths involving these drugs).

Almost one in three (30.0%) unintentional drug-induced deaths involving pharmaceutical opioids were observed in people aged 50 and above: 20.5% among the 50-59 age group (561 deaths) and 9.5% among people aged 60 and above (259 deaths).

Figure 32. Number of unintentional drug-induced deaths by opioid type and age group, 2015-2019
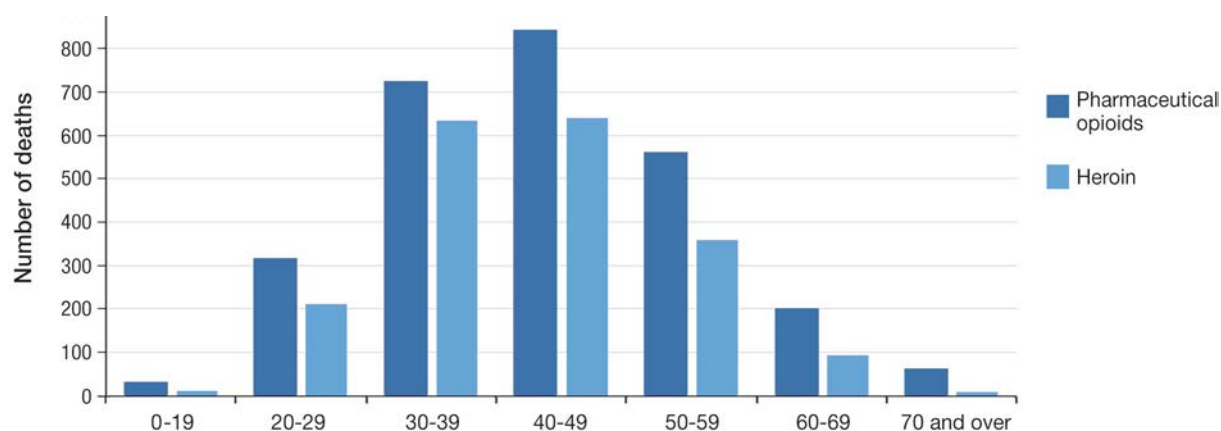
Note: Data are aggregated over the five-year period.

As shown in Figure 33 (with aggregated data from 2015 to 2019), among both males and females, the most common types of opioids associated with unintentional drug-induced deaths were pharmaceutical opioids. Females had a higher proportion of unintentional drug-induced deaths involving pharmaceutical opioids than males (55.7% among females, compared with 44.2% among males), while males had a higher proportion of unintentional drug-induced deaths involving heroin (38.5% among males, compared with 23.2% among females). For both groups, methadone was associated with about one in five unintentional drug-induced deaths involving opioids (17.4% for males and 21.1% for females).

Figure 33. Number of unintentional drug-induced deaths by opioid type and sex, 2015-2019
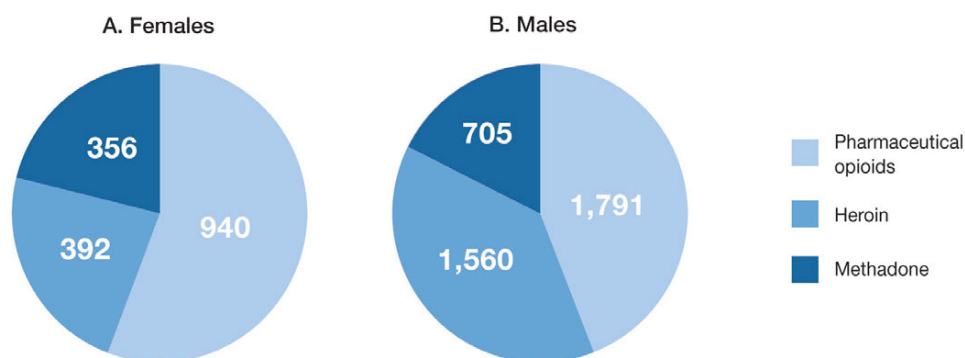
Note: Data are aggregated over the five-year period.

Unintentional drug-induced deaths involving opioids predominantly occur in a poly-drug context, as shown in Figure 34. The most common combination of drugs is opioids with benzodiazepines, and this category of poly-drug use has trebled, from 160 deaths in 2007 to 477 in 2019. The combination of opioids with a broad range of other pharmaceuticals accounts for the second-highest number of unintentional drug-induced deaths involving opioids (420 deaths in 2019). In contrast, the number of unintentional deaths has remained relatively stable for the sole use of heroin, the sole use of pharmaceutical opioids, or the combination of opioids with alcohol.

Figure 34. Number of unintentional drug-induced deaths involving opioids by sole-drug and poly-drug use categories, 2007-2019
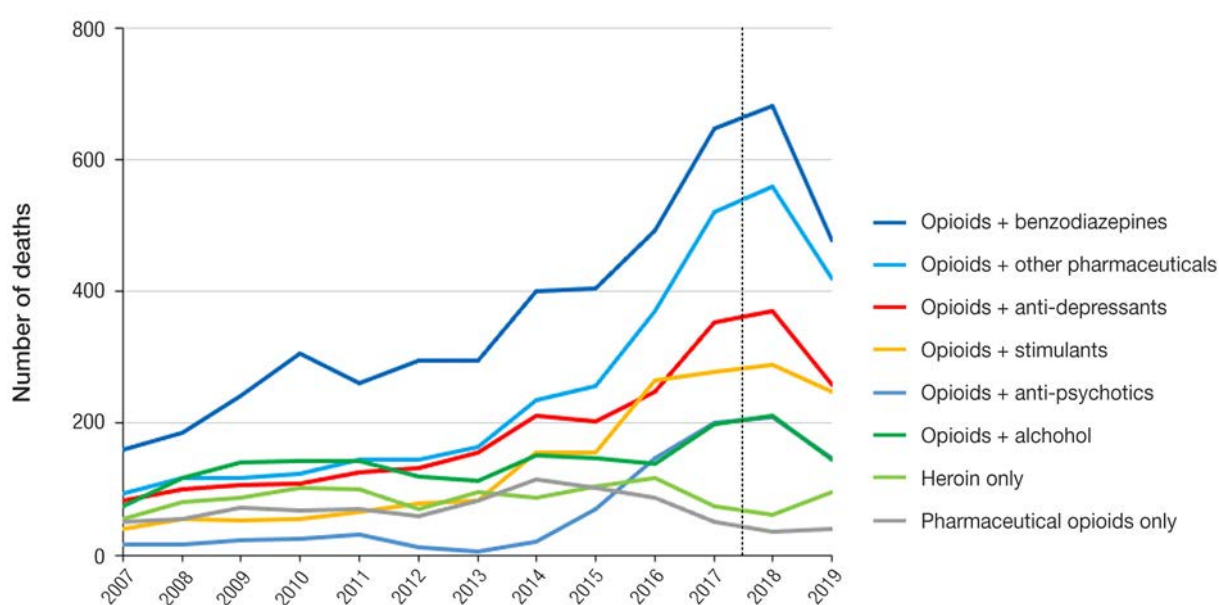
Note: Data to the right of the dotted line (2018 and 2019 data) are preliminary, and likely to rise. 'Other pharmaceuticals' is a broad group that includes anti-convulsants, anti-depressants, anti-psychotics, sedatives and hypnotics, and anaesthetics, but excludes opioid analgesics and benzodiazepines. 'Pharmaceutical opioids' includes oxycodone, morphine, codeine, fentanyl, pethidine, tramadol, tapentadol, buprenorphine and hydromorphone.

7.2. Benzodiazepines

There were 582 unintentional drug-induced deaths involving benzodiazepines in 2019, accounting for 35.4% of all unintentional drug-induced deaths; this was the second-most common drug group identified, behind opioids. However, the involvement of benzodiazepines almost always occurred in a poly-substance context, with less than 1.0% of these deaths involving benzodiazepines on their own.

As shown in Figure 35,[21] rates of unintentional drug-induced deaths involving benzodiazepines have risen sharply since 2013 in Victoria (from 1.8 to 3.3 deaths per 100,000 population in 2019) and Western Australia (from 1.1 to 2.9 deaths per 100,000 population). While this steep increase is not replicated in other states, a more gradual rise is observed in both New South Wales and Queensland.

Figure 35. Unintentional drug-induced deaths involving benzodiazepines by state and territory, 2001-2019, rate per 100,000 population
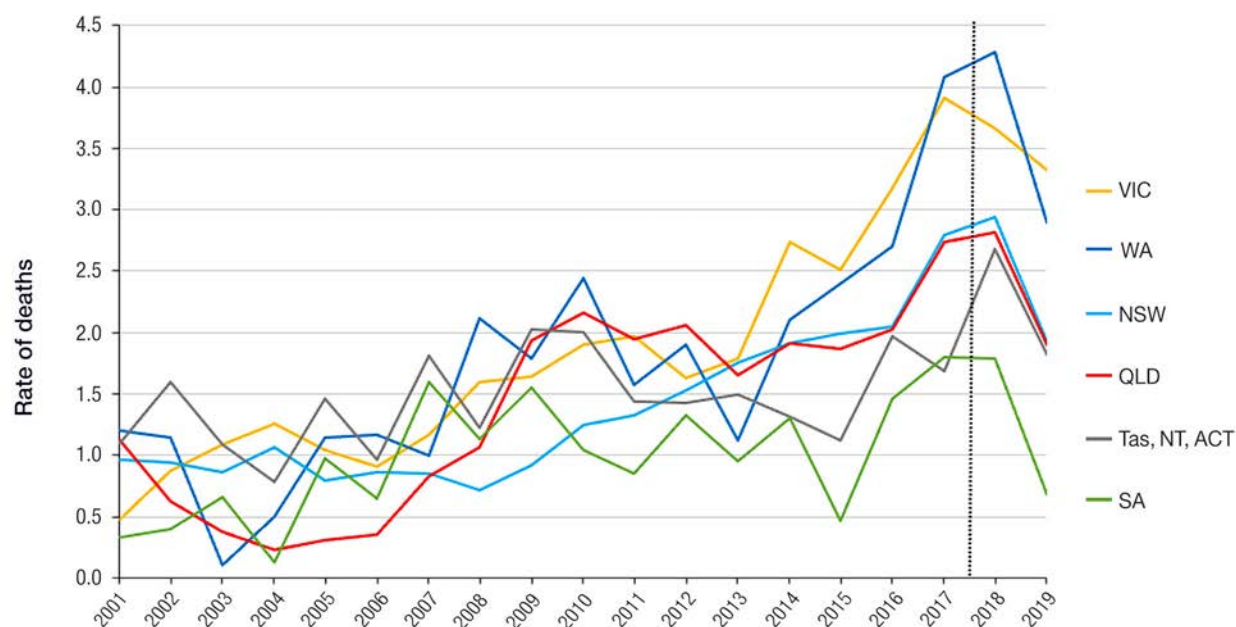
Note: Data to the right of the dotted line (2018 and 2019 data) are preliminary, and likely to rise.

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

Unintentional drug-induced deaths involving benzodiazepines are increasing both within and outside of capital cities, with broadly comparable rates over time. In 2019, the rate of unintentional drug-induced deaths involving benzodiazepines was 2.4 deaths per 100,000 population in capital cities, compared with 2.2 deaths per 100,000 population outside of the capital cities (Figure 36).

Figure 36. Unintentional drug-induced deaths involving benzodiazepines by regionality, 2001-2019, rate per 100,000 population
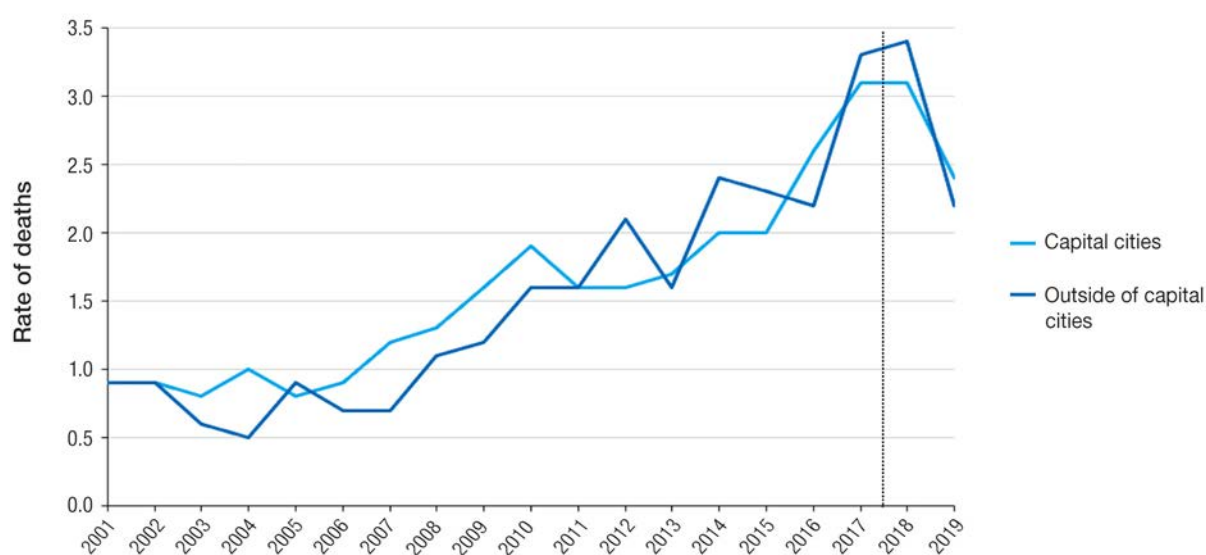
Note: Data to the right of the dotted line (2018 and 2019 data) are preliminary, and likely to rise.

The number of unintentional drug-induced deaths involving benzodiazepines over the period 2015 to 2019 was highest among people aged 40-49 (accounting for 32.6% of deaths involving benzodiazepines), followed by those aged 30-39 (28.1% of deaths involving benzodiazepines), as shown in Figure 37.

More than one-quarter (27.6%) of unintentional drug-induced deaths involving benzodiazepines during this period involved people aged 50 and above: 20.1% among the 50-59 age group (637 deaths) and 7.5% among people aged 60 and above (237 deaths).

Figure 37. Number of unintentional drug-induced deaths involving benzodiazepines by age group, 2015-2019
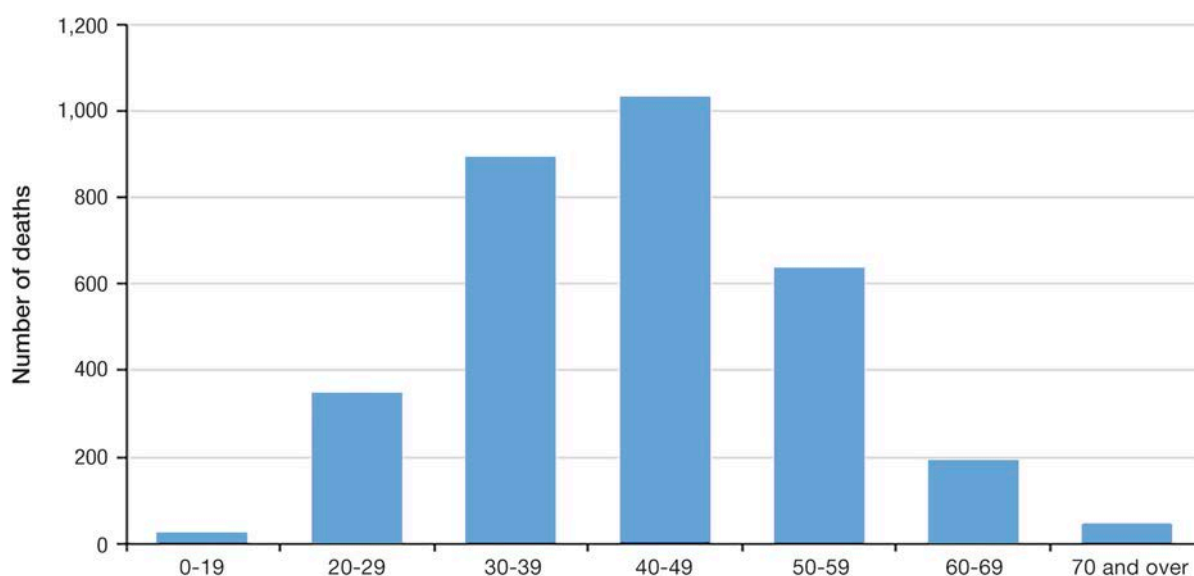
Note: Data are aggregated over the five-year period.

Males had more than double the number of unintentional drug-induced deaths involving benzodiazepines than females, with 2,120 deaths among males accounting for two-thirds of the deaths involving benzodiazepines (66.9%), compared with 1,050 deaths among females, over the period 2015 to 2019, as shown in Figure 38.

Figure 38. Number of unintentional drug-induced deaths involving benzodiazepines by sex, 2015-2019
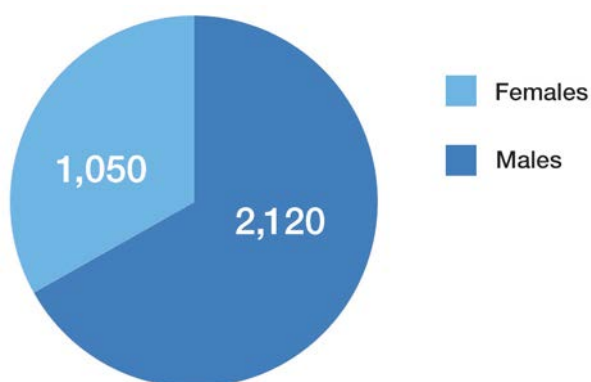
Note: Data are aggregated over the five-year period.

7.3. Stimulants

This group includes methamphetamine (including 'ice'), amphetamine, and ecstasy (MDMA). There were 470 unintentional drug-induced deaths involving stimulants in 2019, equating to 28.6% of all unintentional drug-induced deaths, compared with 5.4% of all unintentional drug-induced deaths in 2001. Stimulants were the third-most commonly detected drug in these deaths in 2019.

The rates of unintentional drug-induced deaths involving stimulants are increasing in all states and territories (Figure 39).[22] Since 2013, the highest rates of death involving stimulants have been observed in Western Australia, increasing from 1.3 deaths per 100,000 population in 2013 to 3.2 in 2019 – far higher than the rates in other jurisdictions. capital cities.

Figure 39. Unintentional drug-induced deaths involving stimulants by state and territory, 2001-2019, rate per 100,000 population
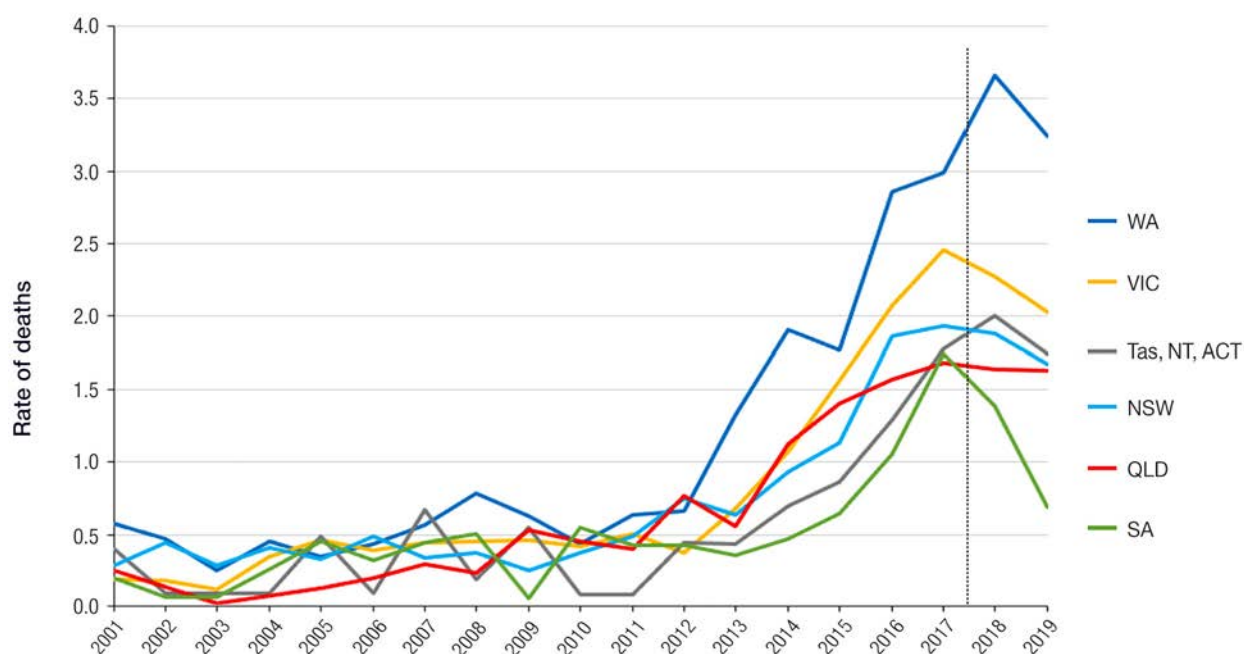
 Note: Data to the right of the dotted line (2018 and 2019 data) are preliminary, and likely to rise.

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

Unintentional drug-induced deaths involving stimulants are increasing both within and outside of capital cities (Figure 40). While capital cities had higher death rates for several years from 2006 to 2010, the rates for the two types of areas have been tracking closely since 2011. From 2011 to 2019, the rates of unintentional drug-induced deaths involving stimulants increased from 0.5 to 1.9 deaths per 100,000 population, both within and outside capital cities.

Figure 40. Unintentional drug-induced deaths involving stimulants by regionality, 2001-2019, rate per 100,000 population

Note: Data to the right of the dotted line (2018 and 2019 data) are preliminary, and likely to rise.

The number of unintentional deaths involving stimulants over the period 2015 to 2019 was highest among people aged 30-39 (accounting for 33.6% of deaths involving stimulants), followed by those aged 40-49 ants over the five years (with 371 such deaths), there were 409 such deaths among people aged 50 and older, representing 18.0% of unintentional drug-induced deaths involving stimulants.

Figure 41. Number of unintentional drug-induced deaths involving stimulants by age group, 2015-2019
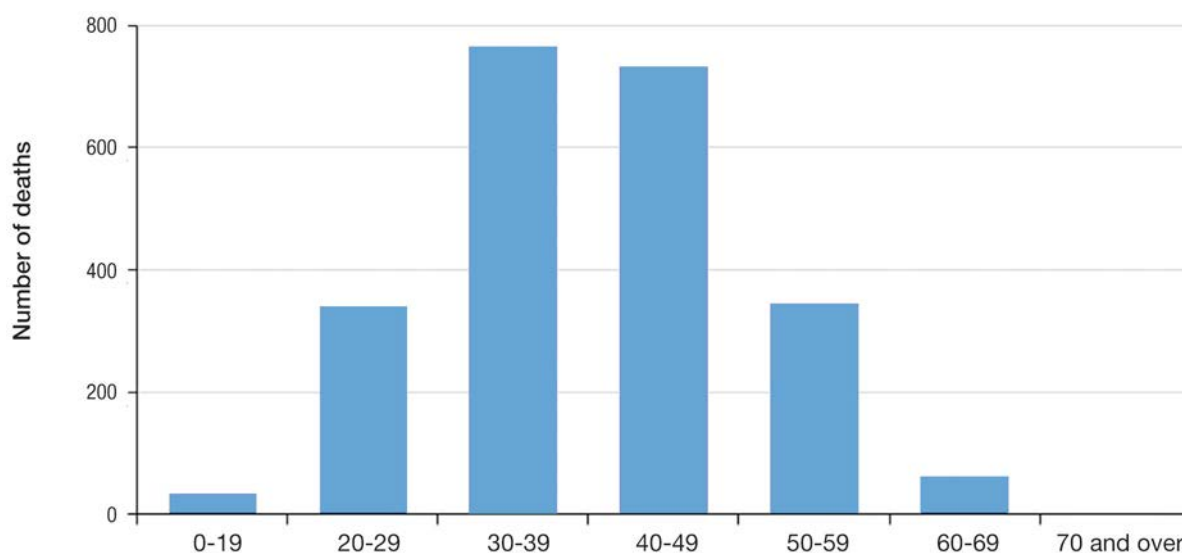
Note: Data are aggregated over the five-year period.

Males had over three times more unintentional drug-induced deaths involving stimulants than females over the five-year period, with 1,717 deaths among males accounting for three-quarters of deaths involving stimulants (75.4%), compared with 560 deaths among females (Figure 42).

Figure 42. Number of unintentional drug-induced deaths involving stimulants by sex, 2015-2019
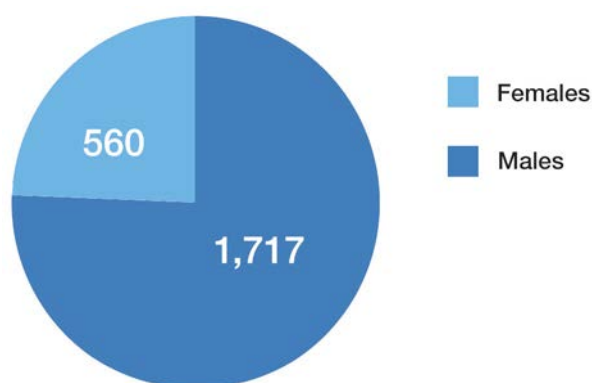
Note: Data are aggregated over the five-year period.

7.4. Anti-depressants

This group includes tricyclic and tetracyclic anti-depressants, monoamine-oxidase-inhibitor anti-depressants, and other unspecified anti-depressants such as selective serotonin reuptake inhibitors.[23] There were 340 unintentional drug-induced deaths involving anti-depressants in 2019, accounting for 20.7% of all unintentional drug-induced deaths. They were the fourth-most common drug detected in these deaths in 2019.

The rates of unintentional drug-induced deaths involving anti-depressants appear to be increasing in Western Australia, which has more than trebled from 0.7 deaths per 100,000 population in 2013 to 2.4 in 2019 (Figure 43).[24] However, rates are highly variable for all states and territories.

Figure 43. Unintentional drug-induced deaths involving anti-depressants by state and territory, 2001-2019, rate per 100,000 population
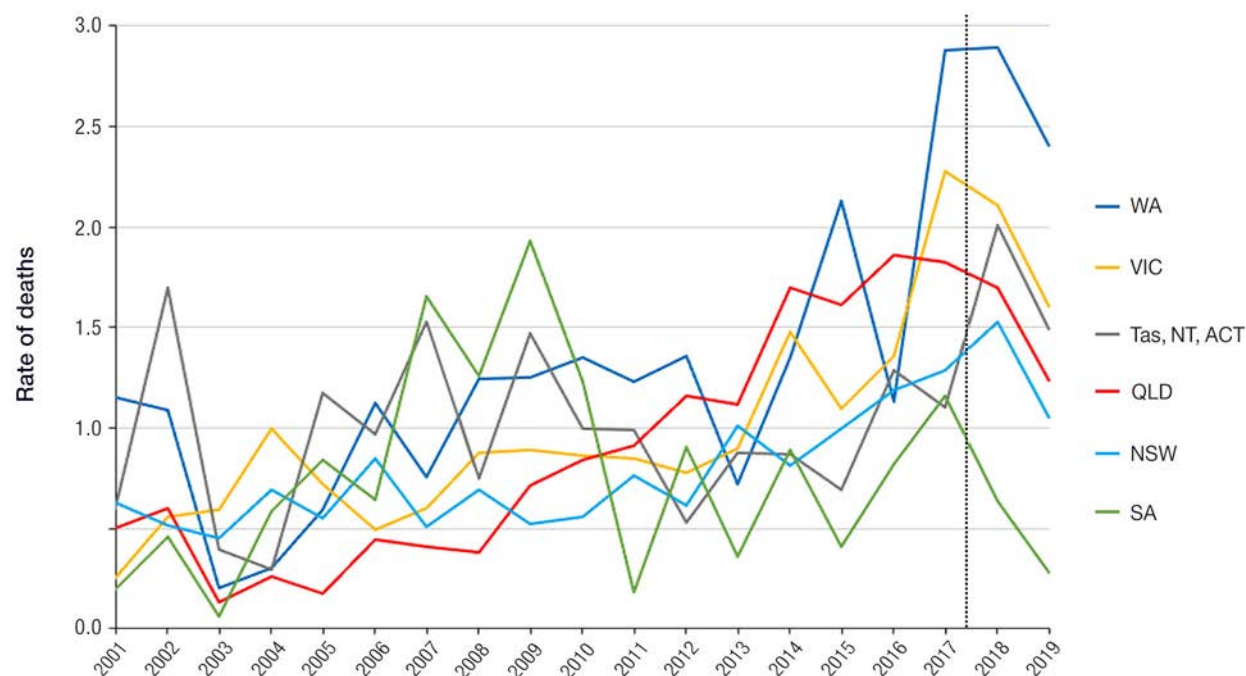
Note: Data to the right of the dotted line (2018 and 2019 data) are preliminary, and likely to rise.

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[23] Anti-depressants vary considerably in toxicity and in the rate of use in the community. However, the data do not allow disaggregation by specific class of anti-depressant.

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

Unintentional drug-induced deaths involving anti-depressants have increased both within and outside of capital cities, tracking quite similarly over time (Figure 44). While capital cities had higher death rates from 2001 to 2008, rates of unintentional drug-induced deaths involving anti-depressants have been higher outside of capital cities since 2010. The rates of these deaths increased more for regional areas than capital cities in the period from 2001 to 2019, from 0.4 to 1.4 deaths per 100,000 population in the regions, compared with an increase from 0.6 to 1.3 deaths per 100,000 population in the cities.

Figure 44. Unintentional drug-induced deaths involving anti-depressants by regionality, 2001-2019, rate per 100,000 population
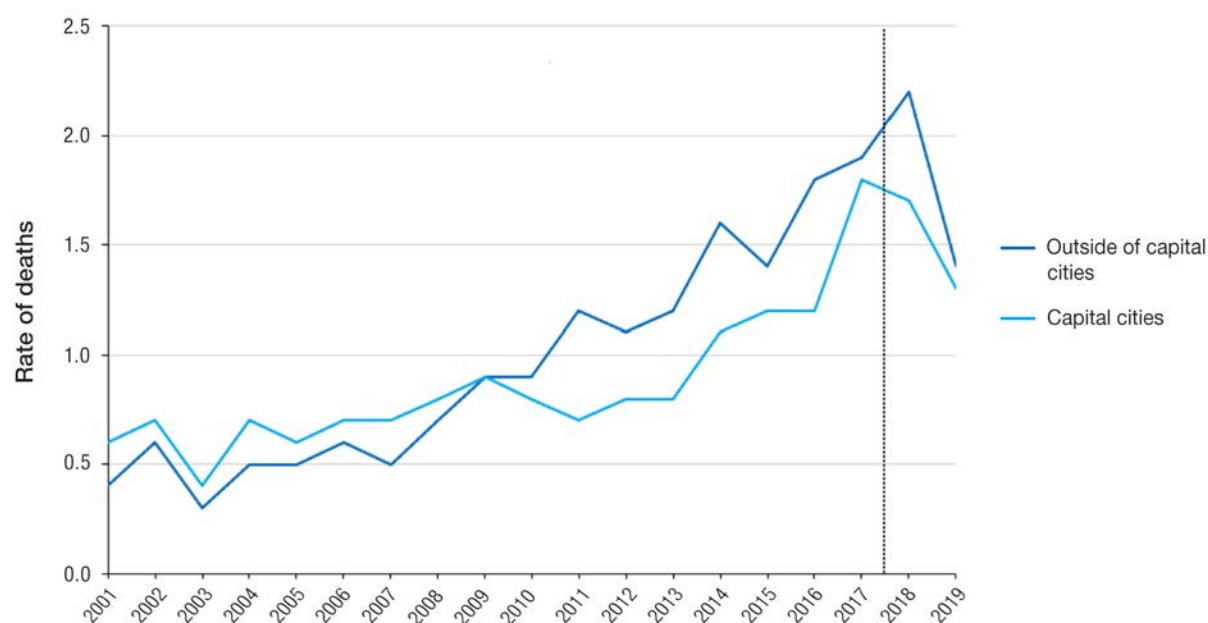
Note: Data to the right of the dotted line (2018 and 2019 data) are preliminary, and likely to rise.

There is a slightly older age profile for unintentional drug-induced deaths involving anti-depressants than for those involving either benzodiazepines or stimulants. The number of unintentional deaths involving anti-depressants over the period 2015 to 2019 was highest among people aged 40-49 (accounting for 33.0% of deaths involving anti-depressants), followed by those aged 30-39 (24.0% of deaths) and those aged 50-59 (22.9% of deaths). More than one in ten (11.0%) unintentional deaths involving anti-depressants were observed among people aged 60 and over, as shown in Figure 45.

Figure 45. Number of unintentional drug-induced deaths involving anti-depressants by age group, 2015-2019
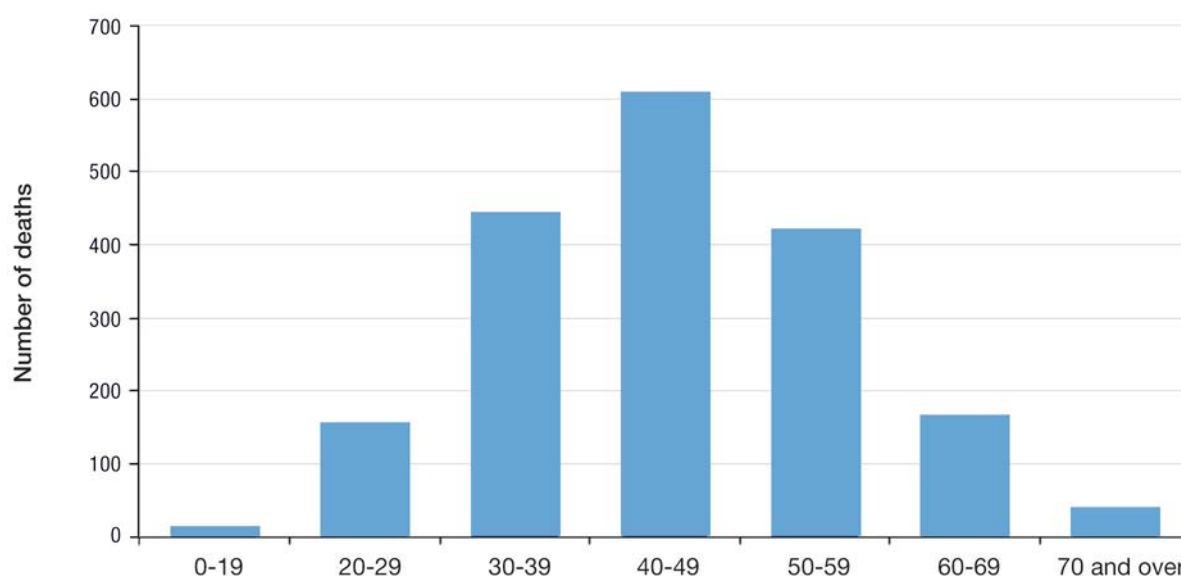
Note: Data are aggregated over the five-year period.

There is a more even sex distribution for unintentional drug-induced deaths involving anti-depressants than for those involving other drug types. There were 1,075 deaths among males during the five-year period from 2015 to 2019, accounting for 58.2% of all such deaths, compared with 772 deaths among females (Figure 46).

Figure 46. Number of unintentional drug-induced deaths involving anti-depressants by sex, 2015-2019
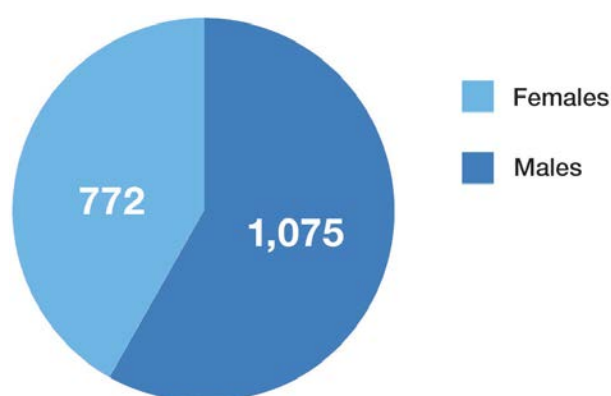
Note: Data are aggregated over the five-year period.

7.5. Cannabinoids

This group includes phyto-cannabinoids (natural plants or drugs containing chemical compounds that act upon the brain's cannabinoid receptors), as well as synthetic cannabinoid receptor agonists (synthetic cannabinoids) and medicinal cannabis. Natural phyto-cannabinoids such as THC likely contribute very little to the toxicity that actually causes death, and are extremely unlikely to cause death by themselves. Synthetic cannabinoid receptor agonists, however, are far more toxic.[25] Indeed, for drug-induced deaths since 2014 in which cannabinoids were the only drug type detected, every death was due to these synthetic cannabinoid receptor agonists – no deaths have involved natural phyto-cannabinoids on their own. Similarly, deaths since 2017 involving cannabinoids plus alcohol also involved only the synthetic cannabinoid receptor agonists, rather than natural phyto-cannabinoids.

There were 256 unintentional drug-induced deaths involving cannabinoids in 2019, accounting for 15.6% of all unintentional drug-induced deaths. They were the fifth-most commonly detected drug in these deaths in 2019.

The rates of unintentional drug-induced deaths involving cannabinoids have increased in all states and territories since 2013, particularly in Western Australia, which increased from 0.5 deaths per 100,000 population in 2013 to 1.4 in 2019, and Victoria, which increased from 0.2 to 1.3 deaths per 100,000 population during the same period (Figure 47).[26]

Figure 47. Unintentional drug-induced deaths involving cannabinoids by state and territory, 2001-2019, rate per 100,000 population
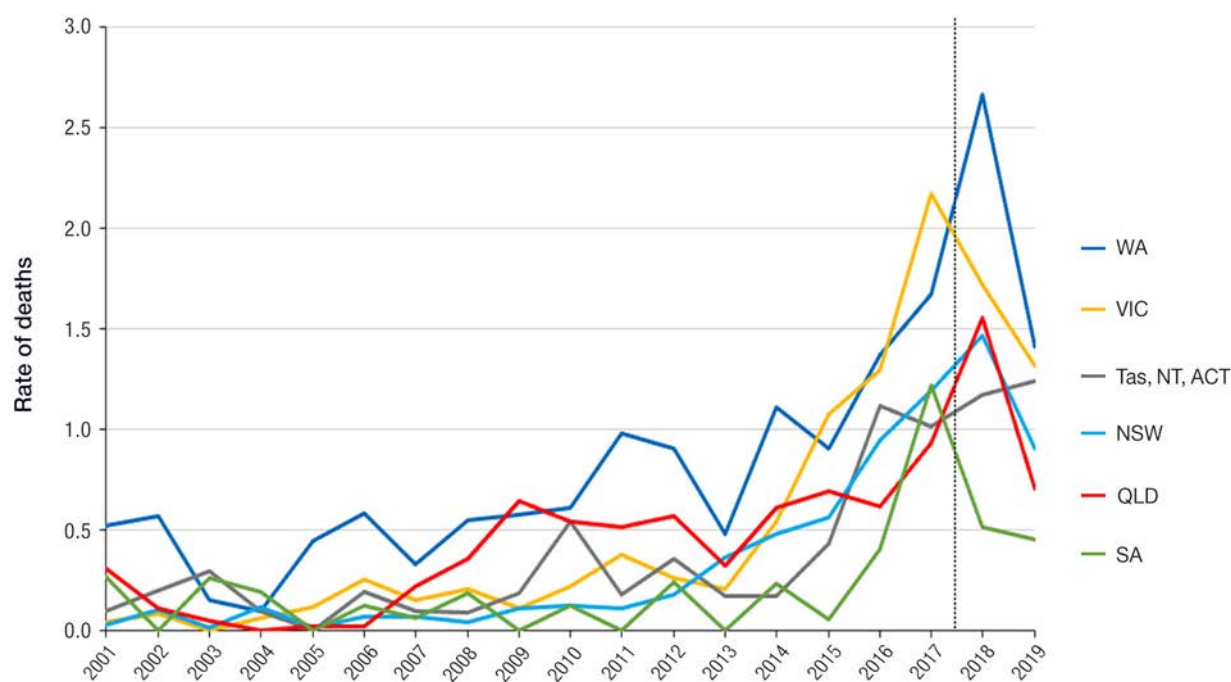
Note: Data to the right of the dotted line (2018 and 2019 data) are preliminary, and likely to rise.

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[25] Cohen, K. and Weinstein, A.M. (2018). Synthetic and non-synthetic cannabinoid drugs and their adverse effects: A review from a public health perspective. *Frontiers in Public Health*, 6: 162; Drummer, O.H., Gerostamoulos, D. and Woodford, N.W. (2019). Cannabis as a cause of death: A review. *Forensic Science International*, 298: 298-306

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

Rates of unintentional drug-induced deaths involving cannabinoids have increased both within and outside of capital cities, particularly in the years since 2013 (Figure 48). While the rates in the two regions diverged in 2017 and 2018, they have converged once again in 2019, with 1.1 deaths per 100,000 population in areas outside of capital cities and 1.0 deaths per 100,000 population in the capital cities.

Figure 48. Unintentional drug-induced deaths involving cannabinoids by regionality, 2001-2019, rate per 100,000 population
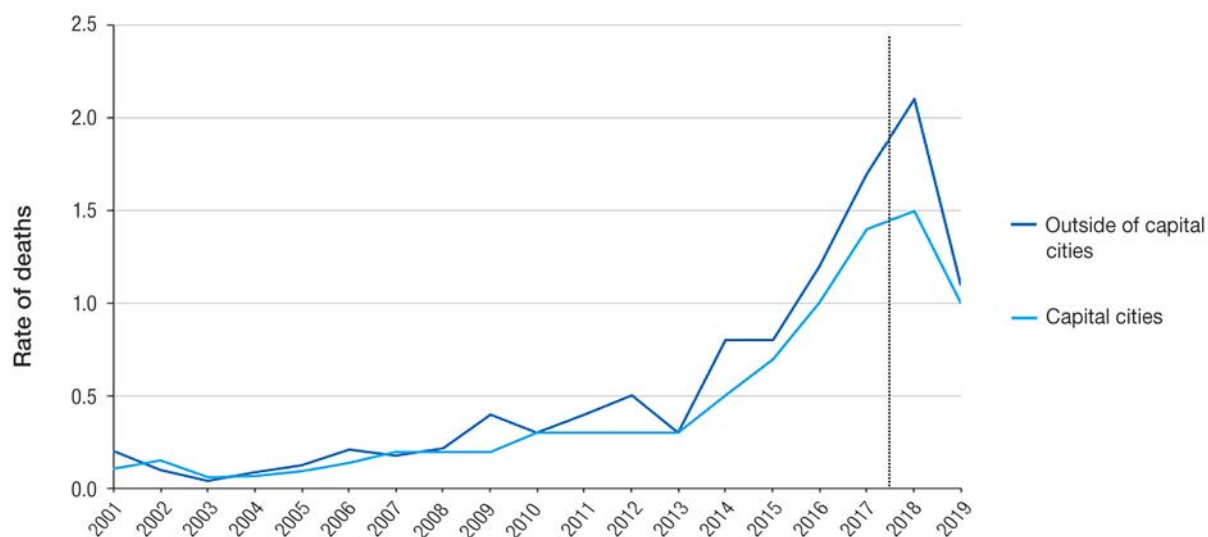
Note: Data to the right of the dotted line (2018 and 2019 data) are preliminary, and likely to rise.

The number of unintentional drug-induced deaths involving cannabinoids over the period 2015 to 2019 was highest among people aged 40-49, who accounted for more than one-third (34.8%) of these deaths. Three in ten of the deaths involving cannabinoids (29.1%) were seen among those aged 30-39, while one in five (21.0%) unintentional deaths involving cannabinoids were recorded among people aged 50 and over. Deaths among people aged under 30 accounted for 15.1% of the unintentional drug-induced deaths involving cannabinoids over the five-year period (Figure 49).

Figure 49. Number of unintentional drug-induced deaths involving cannabinoids by age group, 2015-2019
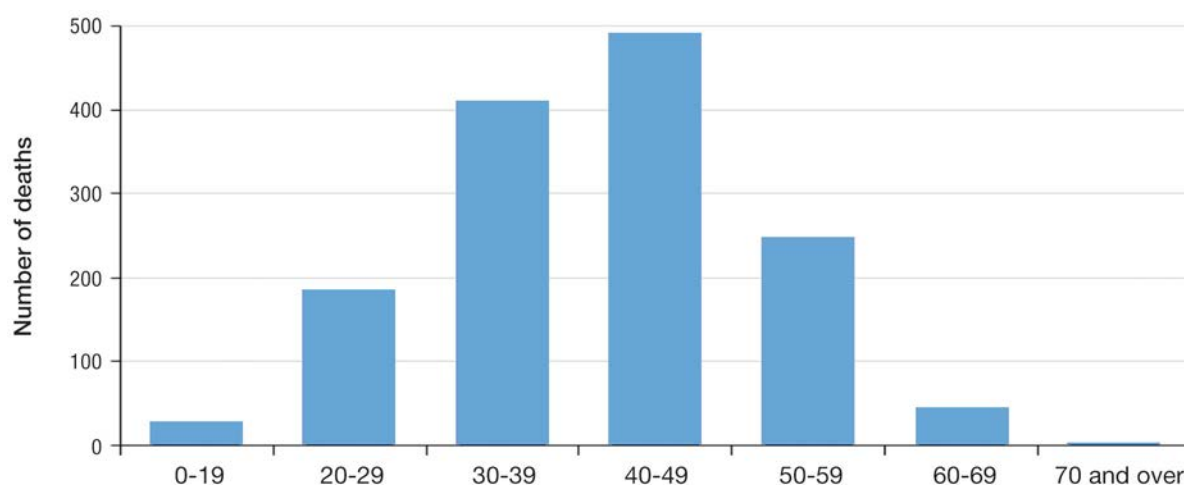
Note: Data are aggregated over the five-year period.

As with benzodiazepines and stimulants, males are far more likely than females to experience an unintentional drug-induced death involving cannabinoids. There were 1,057 deaths among males during the five-year period from 2015 to 2019, accounting for 74.7% of all such deaths, compared with 358 deaths among females (Figure 50).

Figure 50. Number of unintentional drug-induced deaths involving cannabinoids by sex, 2015-2019
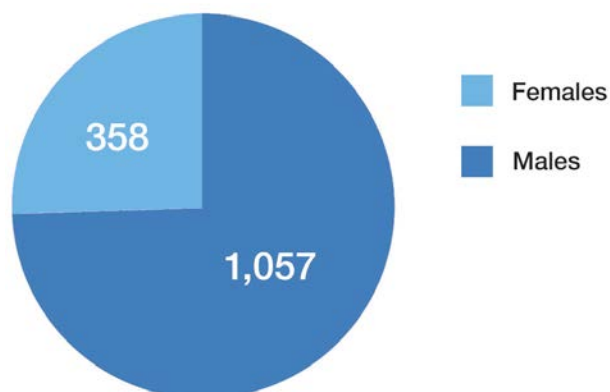
Note: Data are aggregated over the five-year period.

7.6. Anti-psychotics

This group includes drugs such as quetiapine, olanzapine, risperidone, paliperidone, amisulpride, and lithium. There were 197 unintentional drug-induced deaths involving anti-psychotics in 2019, representing 12.0% of all unintentional drug-induced deaths. Rates of unintentional drug-induced deaths involving anti-psychotics have increased markedly since 2013 (Figure 51),[27] particularly in Western Australia, which has increased from zero unintentional deaths per 100,000 population in 2013 to 1.1 deaths per 100,000 population in 2019. Earlier peaks and volatility in Tasmania, the Australian Capital Territory and the Northern Territory are likely due to small numbers being calculated as a rate with small populations, and should be interpreted cautiously.

These increases may reflect increases in the total number of prescriptions. In Australia, data collected from 2011 to 2015 show that prescription numbers for anti-psychotics have risen in recent years.[28]

Figure 51. Unintentional drug-induced deaths involving anti-psychotics by state, 2001-2019, rate per 100,000 population
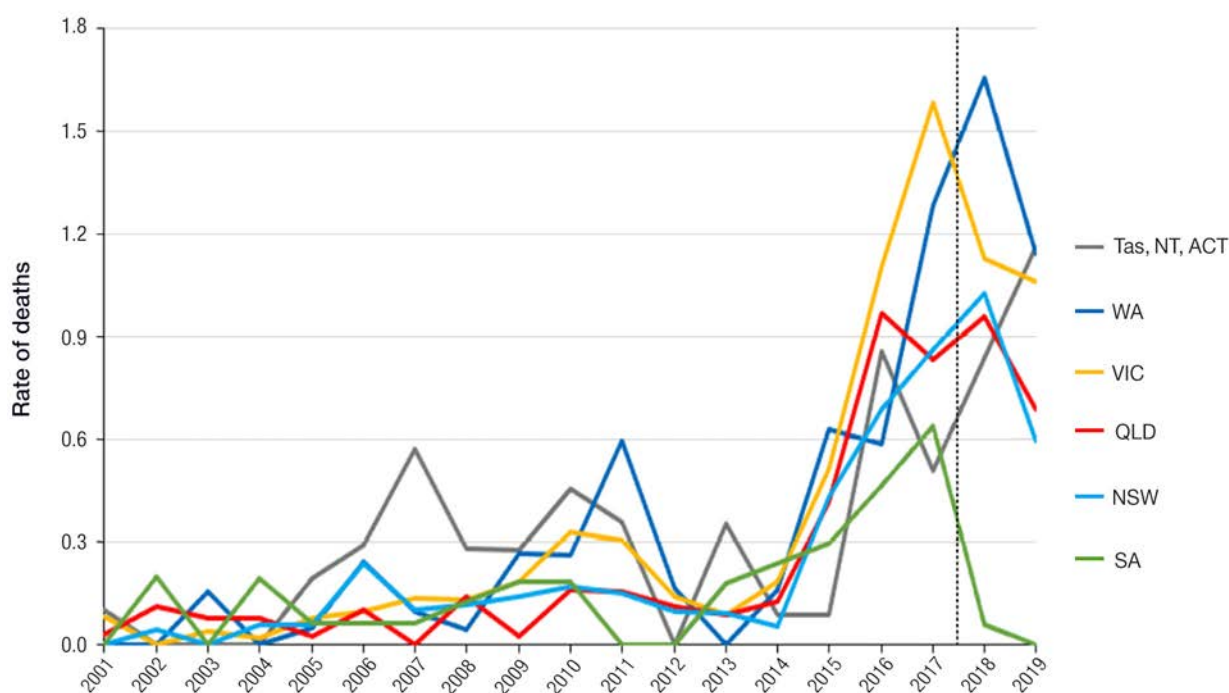
Note: Data to the right of the dotted line (2018 and 2019 data) are preliminary, and likely to rise.

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

[28] Pharmaceutical Benefits Scheme (2016) *Anti-psychotic medicines: 24 month review of quetiapine 25 mg*. http://www.pbs. gov.au/industry/listing/participants/public-release-docs/2016-09/antipsychotics-dusc-prd-2016-09-final.pdf.

The increase in unintentional drug-induced deaths involving anti-psychotics since 2014 has occurred in both the capital cities and in regional / rural areas (Figure 52): during this period, the rate of deaths has increased from 0.1 to 0.9 deaths per 100,000 population outside of capital cities and to 0.8 deaths per 100,000 population in capital cities.

The rate of unintentional drug-induced deaths involving anti-psychotics remains lower than it is for other classes of drugs.

Figure 52. Unintentional drug-induced deaths involving anti-psychotics by regionality, 2001-2019, rate per 100,000 population
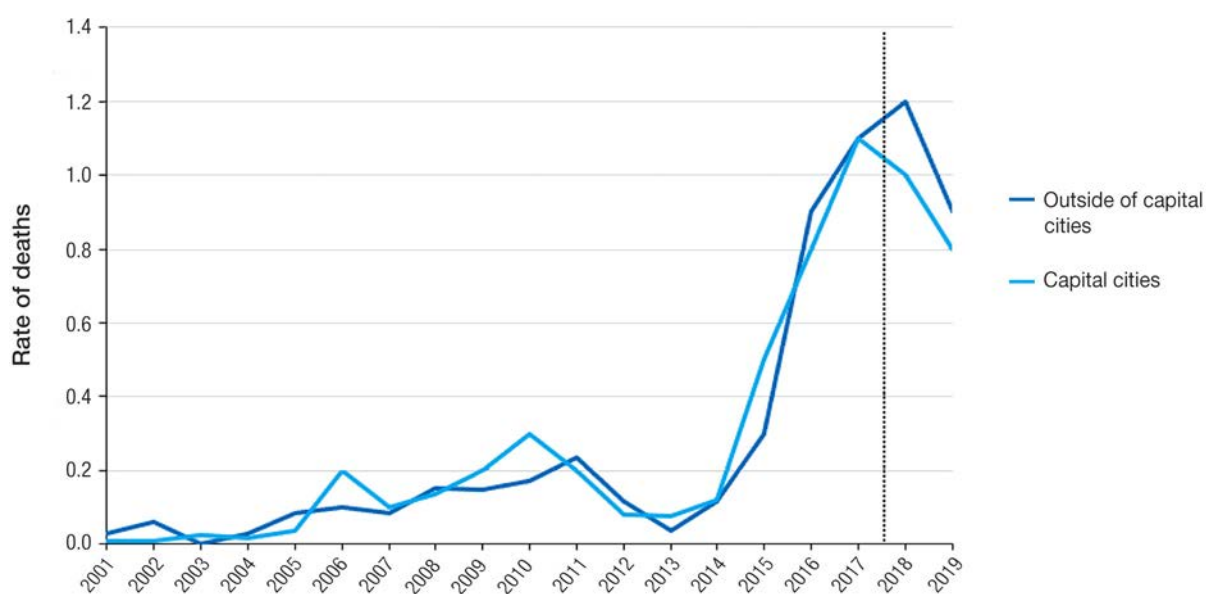
Note: Data to the right of the dotted line (2018 and 2019 data) are preliminary, and likely to rise.

The number of unintentional drug-induced deaths involving anti-psychotics over the period 2015 to 2019 was highest among people aged 40-49, who accounted for more than one-third (36.1%) of these deaths. More than one-quarter of the deaths involving anti-psychotics (28.4%) were seen among those aged 30-39, while another quarter (26.8%) of the unintentional deaths involving anti-psychotics were recorded among people aged 50 and over. Deaths among people aged under 30 accounted for 8.4% of the unintentional drug-induced deaths involving anti-psychotics over the five-year period (Figure 53).

Figure 53. Number of unintentional drug-induced deaths involving anti-psychotics by age group, 2015-2019
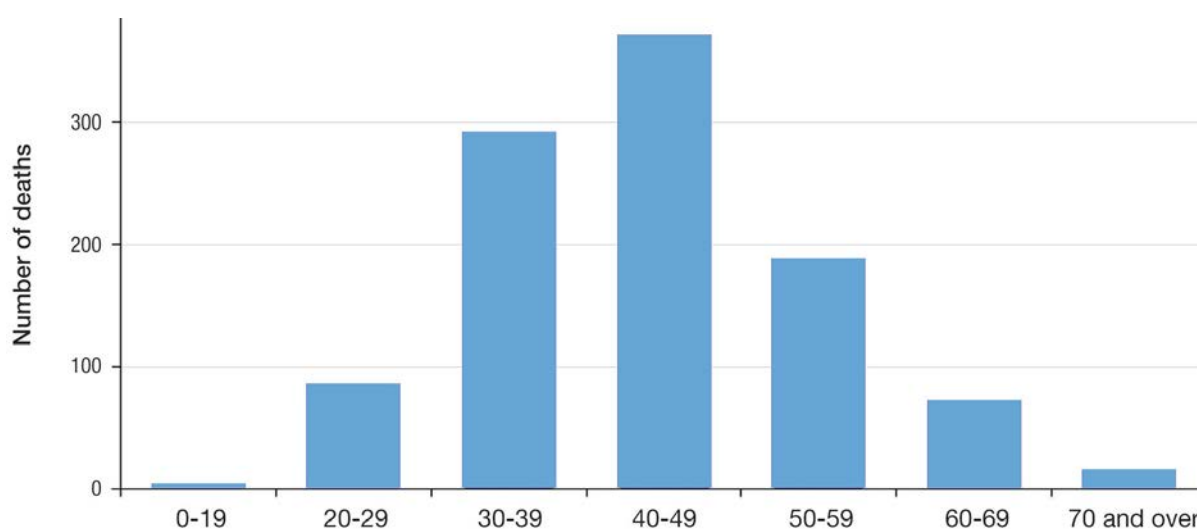
Note: Data are aggregated over the five-year period.

As with anti-depressants, there is a less uneven sex distribution for unintentional drug-induced deaths involving anti-psychotics than for those involving other drug types. There were 660 deaths among males during the five-year period from 2015 to 2019, accounting for 64.4% of all such deaths, compared with 365 deaths among females (Figure 54).

Figure 54. Number of unintentional drug-induced deaths involving anti-psychotics by sex, 2015-2019
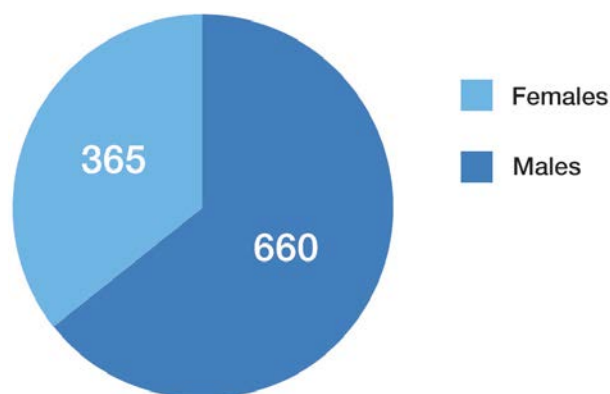
Note: Data are aggregated over the five-year period.

7.7. Anti-convulsants (and neuropathic pain modulators)

This group of drugs includes pregabalin and gabapentin. Pregabalin is more commonly prescribed in Australia than gabapentin, and prescribing rates for pregabalin are increasing considerably.[29] As some of these anti-convulsants (including pregabalin and gabapentin) were rarely prescribed for the treatment of neuropathic pain before 2012, and rates of deaths were low, data are only presented from 2012 onwards. It is also important to note that though these drugs are classified in the coding system as anti-convulsants, the drugs from this group that are associated with the majority of deaths are commonly prescribed for chronic neuropathic pain and, more commonly, off-label for a range of pain conditions.

While the overall number of unintentional drug-induced deaths involving anti-convulsants is low (154 deaths in 2019, representing 9.4% of all unintentional drug-induced deaths), the number has increased markedly since 2015 (Figure 55). Indeed, between 2001 and 2014, there were no more than four unintentional deaths involving anti-convulsants each year. In 2015 this increased to 11 deaths, before rising to 62 deaths in 2016, 112 deaths in 2017 and reaching a high of 166 in 2018.

This change has been driven by rapid increases in Western Australia (with 1.2 deaths per 100,000 population in 2019) and Queensland (with 0.9 deaths per 100,000 population in 2019).[30] It is possible, however, that an increase has also been occurring in other jurisdictions, but that different practices regarding routine post-mortem toxicological testing mean that such a change has not been detected.

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

Figure 55. Unintentional drug-induced deaths involving anti-convulsants by state, 2012-2019, rate per 100,000 population
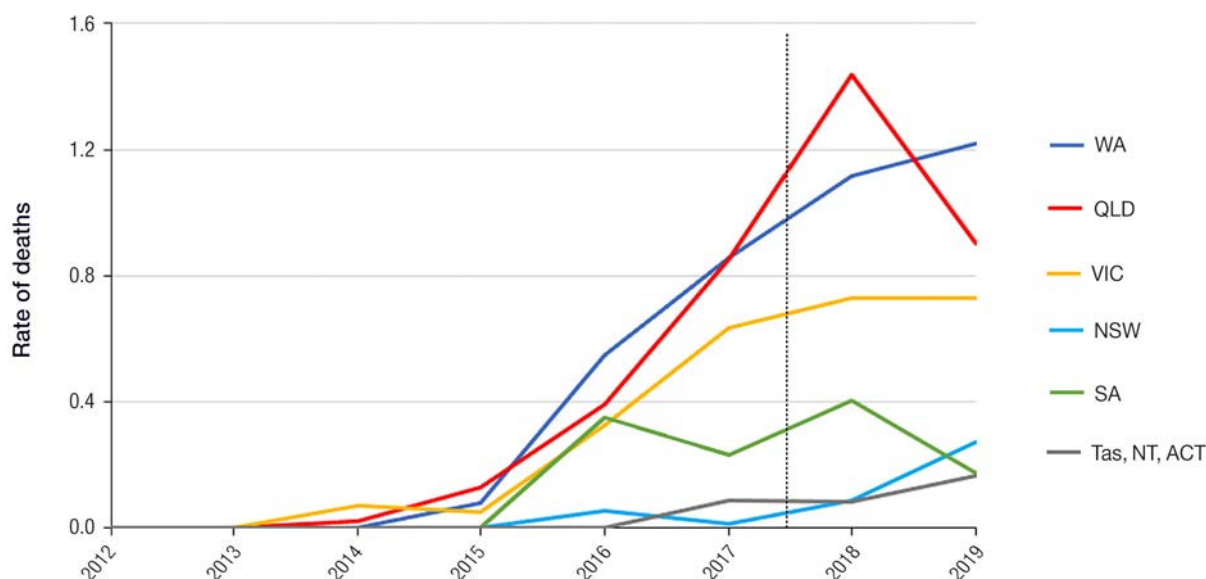
Note: Data to the right of the dotted line (2018 and 2019 data) are preliminary, and likely to rise.

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[29] Cairns, R., Schaffer, A. L., Ryan, N., Pearson, S. A. and Buckley, N. A. (2019). Rising pregabalin use and misuse in Australia: Trends in utilization and intentional poisonings. *Addiction*, 114(6): 1026-1034.

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

The increase in unintentional drug-induced deaths involving anti-convulsants since 2015 has occurred in both the capital cities and in regional / rural areas (Figure 56). The rate of deaths prior to 2015 was zero in both metropolitan and regional / rural areas; in 2019 the rate of deaths was 0.6 per 100,000 population in capital cities and 0.7 outside of capital cities. While the rate itself is low, the increase is dramatic.

Figure 56. Unintentional drug-induced deaths involving anti-convulsants by regionality, 2012-2019, rate per 100,000 population
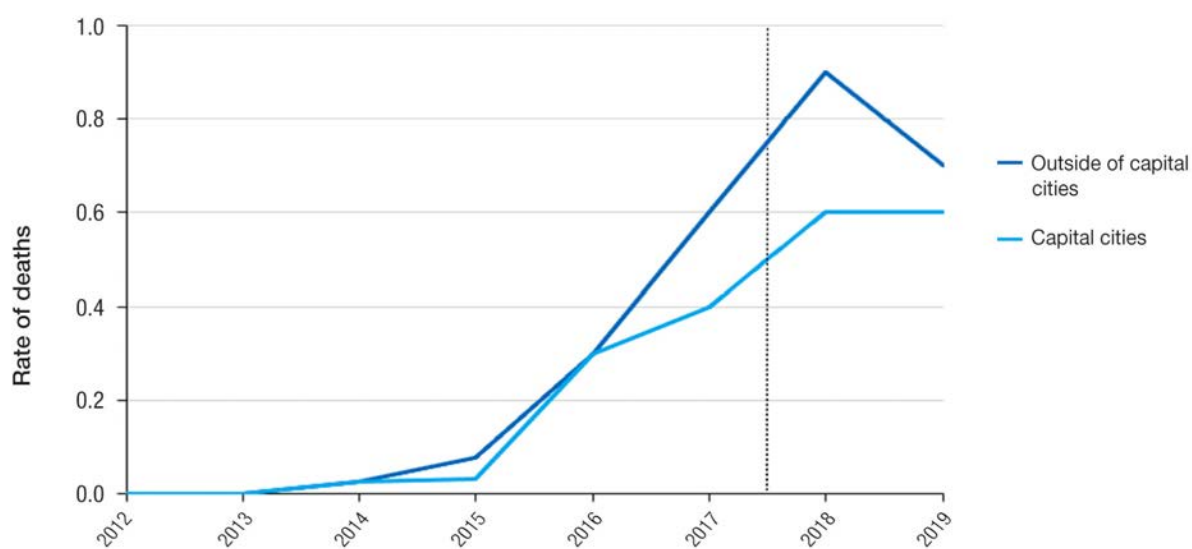

Note: Data to the right of the dotted line (2018 and 2019 data) are preliminary, and likely to rise.

The number of unintentional drug-induced deaths involving anti-convulsants over the period 2015 to 2019 was highest among people aged 40-49, who accounted for one-third (32.9%) of these deaths. Three in ten of the deaths involving anti-convulsants (29.7%) were seen among those aged 30-39, while more than one-quarter (26.9%) of the unintentional deaths involving anti-convulsants were recorded among people aged 50 and over. Deaths among people aged under 30 accounted for 10.3% of the unintentional drug-induced deaths involving anti-convulsants over the five-year period (Figure 57).

Figure 57. Number of unintentional drug-induced deaths involving anti-convulsants by age group, 2015-2019
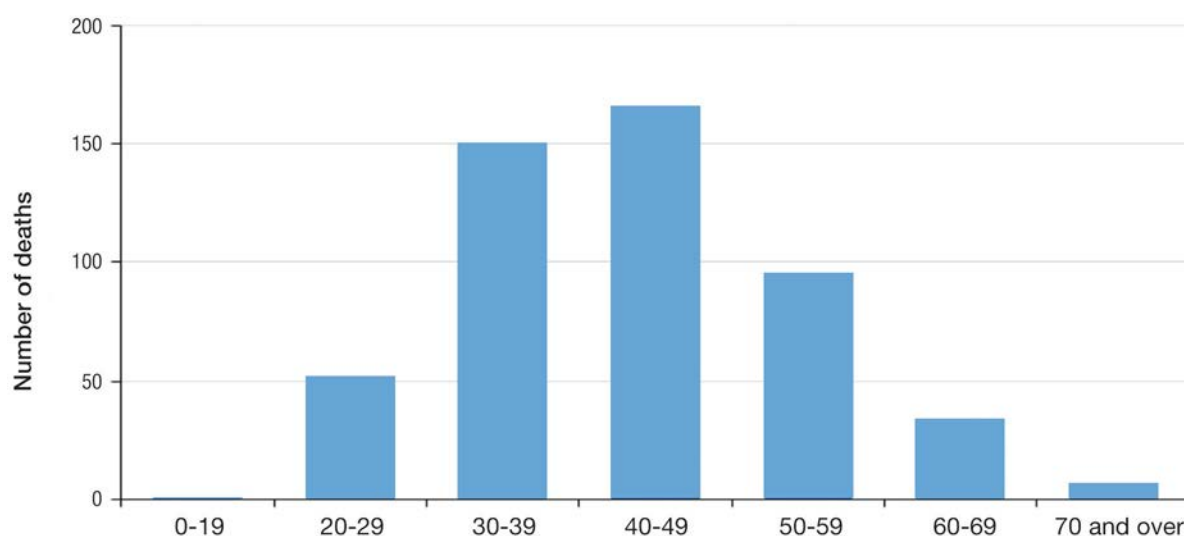
Note: Data are aggregated over the five-year period.

As with anti-psychotics, there is a less uneven sex distribution for unintentional drug-induced deaths involving anti-convulsants than for those involving other drug types. There were 312 deaths among males during the five-year period from 2015 to 2019, accounting for 61.8% of all such deaths, compared with 193 deaths among females (Figure 58).

Figure 58. Number of unintentional drug-induced deaths involving anti-convulsants by sex, 2015-2019
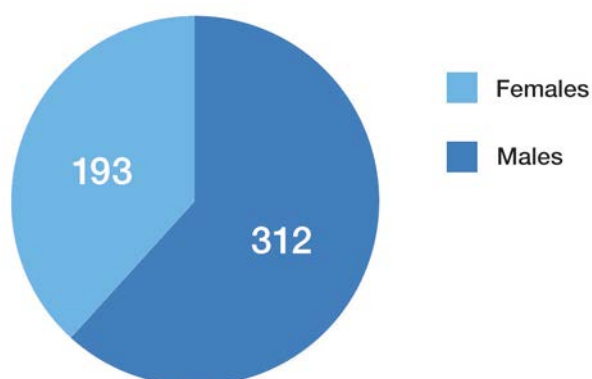
Note: Data are aggregated over the five-year period.

8. Geographical trends

This chapter presents data on unintentional drug-induced deaths by geographical variables including state, capital city classification, public health network, and local areas (Statistical Area, SA3). Detailed data are provided for New South Wales and Victoria, with less information presented for Queensland and Western Australia due to smaller numbers that do not allow for a more detailed analysis. Tasmania, South Australia, Australian Capital Territory and the Northern Territory were not able to be analysed due to small numbers. However, Table 18 provides data for all states and territories, with data aggregated into 5-year blocks, to provide sufficient numbers for reliable calculation of rates.

8.1. New South Wales

Since 2010, regional and rural New South Wales has had a higher rate of unintentional drug-induced deaths than Greater Sydney, with 8.0 deaths per 100,000 population in regional and rural NSW in 2019 compared with 6.1 in Sydney (Figure 59).

In Greater Sydney, the rate of unintentional drug-induced deaths is currently highest for benzodiazepines (2.0 deaths per 100,000 population in 2019), though rates of death involving most drug types (other than pharmaceutical opioids) are trending upwards (Figure 60A).

In regional and rural New South Wales, other pharmaceuticals have surpassed benzodiazepines to have the highest rate of unintentional drug-induced deaths in 2019 (2.2 deaths per 100,000 population). Benzodiazepines and pharmaceutical opioids both reported 2.0 deaths per 100,000 population in 2019, higher than stimulants (1.8 deaths per 100,000 population) and heroin (1.3 deaths per 100,000) (Figure 60B).

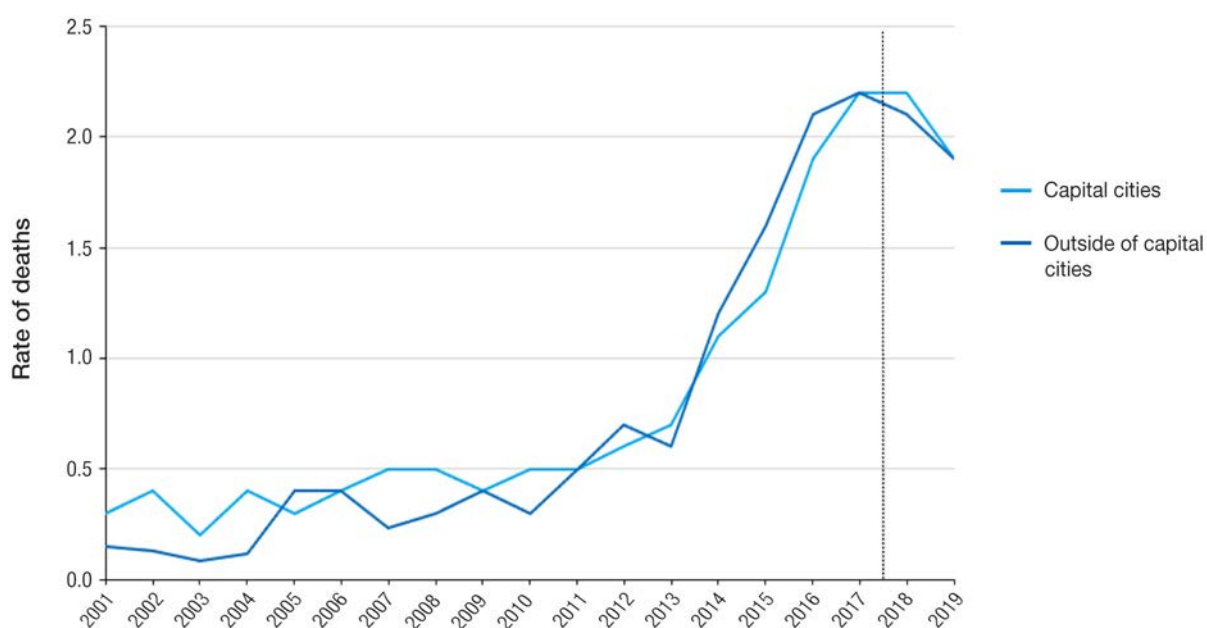**Figure 59. Unintentional drug-induced deaths by regionality in New South Wales, 2001-2019, rate per 100,000 population**
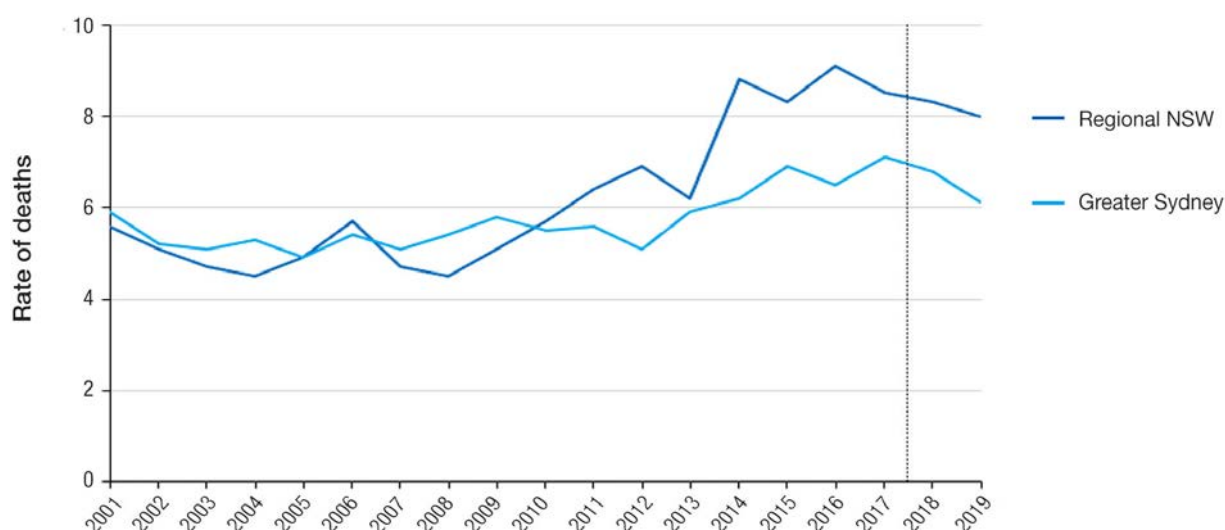
Note: Data to the right of the dotted line (2018 and 2019 data) are preliminary, and likely to rise.

Rates in regional and rural New South Wales are higher than those observed in Sydney for most of these drug types, with two exceptions: rates for unintentional drug-induced deaths involving benzodiazepines are identical in the two areas, while those for heroin are higher in Sydney (1.7 deaths per 100,000 population) than in regional NSW (1.3 deaths per 100,000).

These data are shown as numbers, rather than rates per 100,000 population, in Table 10 and Table 11.

Figure 60. Unintentional drug-induced deaths by drug type in greater Sydney and regional NSW, 2001-2019, rate per 100,000 population
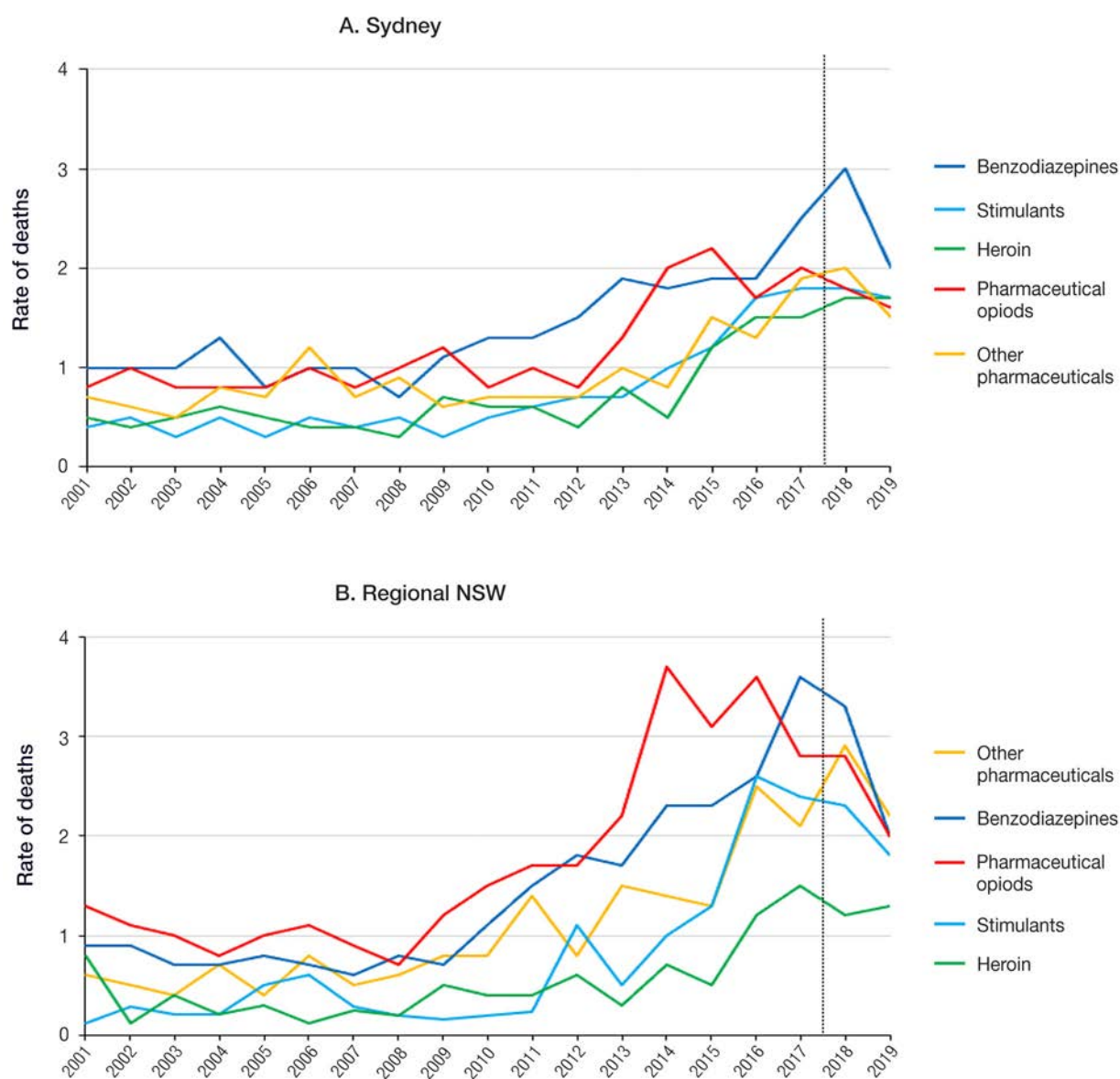
Note: Data to the right of the dotted line (2018 and 2019 data) are preliminary, and likely to rise.

Table 10. Number of unintentional drug-induced deaths by drug group, Sydney, 2001-2019

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Stimulants	16	22	14	22	12	21	16	21	14	22	29	31	36	46	58	86	94	95	90
Benzodiazepines	42	42	43	55	35	43	45	33	49	62	61	71	90	85	96	97	131	154	108
Other Pharmaceuticals	28	25	23	35	31	53	31	41	28	31	30	34	46	37	75	65	93	100	81
Heroin	23	17	23	25	23	18	20	14	34	28	28	21	37	25	59	77	74	85	89
Pharmaceutical Opioids	33	43	35	33	33	41	34	45	57	39	45	39	64	95	109	87	101	93	83
Cannabinoids	1	1	4	3	3	2	3	4	1	6	2	7	15	22	26	37	57	68	44

Table 11. Number of unintentional drug-induced deaths by drug group, regional NSW, 2001-2019

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Stimulants	3	7	5	5	10	12	7	5	4	5	6	24	11	24	28	58	55	53	41
Benzodiazepines	21	20	14	16	18	15	13	17	16	27	35	41	40	59	56	61	86	80	48
Other Pharmaceuticals	15	12	9	17	9	19	13	15	18	21	33	20	36	35	33	63	54	71	54
Heroin	17	3	8	5	7	3	6	5	11	8	8	13	6	18	11	28	37	28	32
Pharmaceutical Opioids	29	24	21	18	24	25	23	17	28	36	40	39	55	89	77	85	68	70	51
Cannabinoids	0	2	0	5	1	2	2	4	4	4	4	6	12	14	17	36	37	47	29

8.2. Victoria

Since 2005, regional and rural Victoria has had a higher rate of unintentional drug-induced deaths than Melbourne (Figure 61).

This gap has been widening, with a greater increase since 2012 observed in regional and rural Victoria. In 2019, the rate of unintentional drug-induced deaths in regional and rural Victoria was 8.7 per 100,000 population, compared with 6.1 for Melbourne.

In Melbourne, the two drug types with the highest rates of involvement in unintentional drug-induced deaths are benzodiazepines (with a rate of 3.1 deaths per 100,000 population) and heroin (with 2.4 deaths per 100,000 population in 2019) (Figure 62A). In regional and rural Victoria, however, while benzodiazepines are still the highest (4.3 deaths per 100,000 population in 2019), it is other pharmaceuticals that have the second highest rate of unintentional death in 2019, at 3.9 deaths per 100,000 population. All drug types have increased substantially since 2007 in regional Victoria (Figure 62B). The steep increase in the death rate from other pharmaceuticals seen in regional and rural Victoria since 2013 is more pronounced than that seen in Melbourne.

In 2019, rates of unintentional drug-induced deaths were substantially higher in regional and rural Victoria than Melbourne for every drug type, though the overall numbers (presented in Table 12 and Table 13) were higher in Melbourne.

Figure 61. Unintentional drug-induced deaths by regionality in Victoria, 2001-2019, rate per 100,000 population
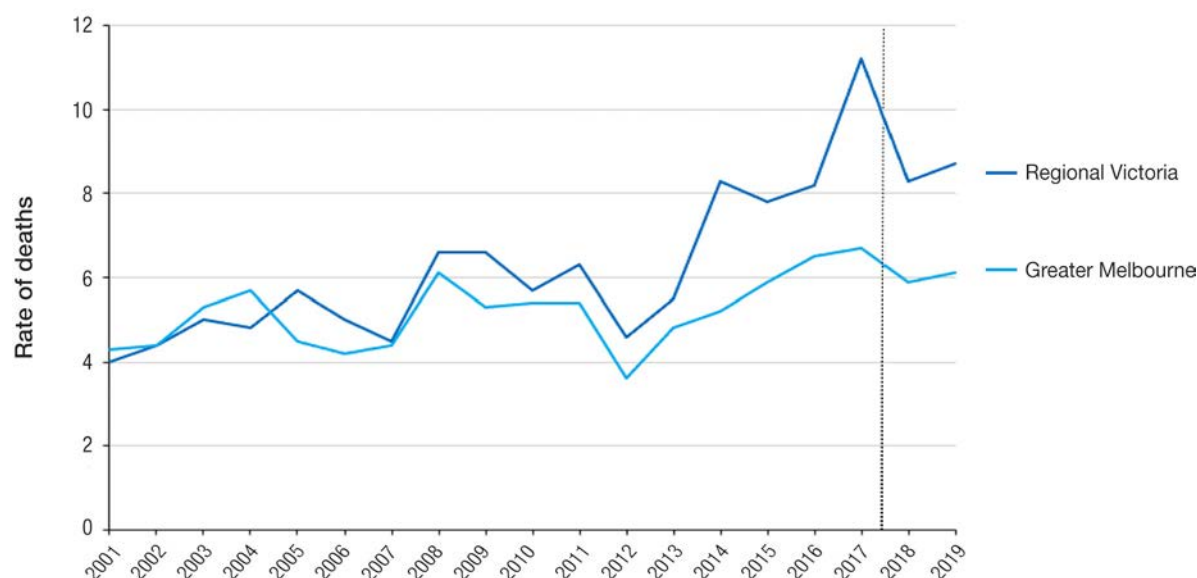
Note: Data to the right of the dotted line (2018 and 2019 data) are preliminary, and likely to rise.

Figure 62. Unintentional drug-induced deaths by drug type in greater Melbourne and regional Victoria, 2001-2019, rate per 100,000 population
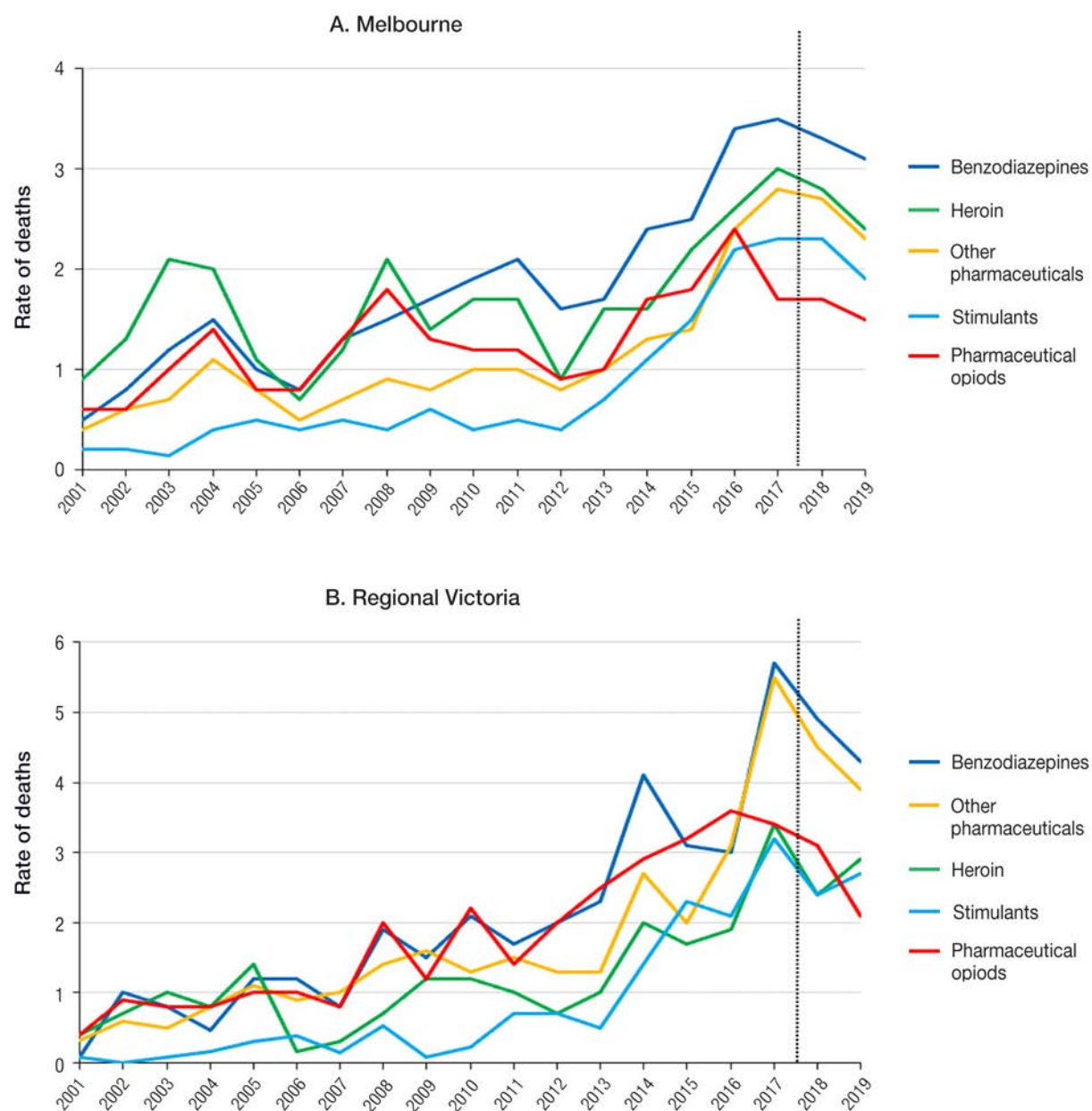
Note: Data to the right of the dotted line (2018 and 2019 data) are preliminary, and likely to rise.

Table 12. Number of unintentional drug-induced deaths by drug group, Melbourne, 2001-2019

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Stimulants	7	9	5	15	19	15	20	17	23	19	20	18	33	47	67	103	112	114	95
Benzodiazepines	19	31	44	56	38	32	51	62	70	79	89	69	75	110	113	157	170	162	155
Other Pharmaceuticals	14	22	26	41	28	20	27	37	34	42	41	36	42	61	66	110	136	131	118
Heroin	35	50	78	74	42	27	46	86	59	70	70	40	70	69	101	120	146	136	119
Pharmaceutical Opioids	21	22	36	51	31	32	51	74	55	51	51	39	45	77	83	113	80	86	74
Cannabinoids	4	1	0	2	1	5	5	7	4	7	15	8	9	18	50	61	90	72	53

Table 13. Number of unintentional drug-induced deaths by drug group, regional Victoria, 2001-2019

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Stimulants	1	0	1	2	4	5	2	7	1	3	8	2	6	16	27	25	40	29	34
Benzodiazepines	1	11	9	6	14	14	9	22	18	25	20	23	28	51	38	39	73	65	56
Other Pharmaceuticals	4	7	6	9	13	12	11	18	19	15	19	16	15	34	25	40	73	59	50
Heroin	5	8	11	9	16	2	4	8	13	13	11	8	11	25	20	25	43	29	38
Pharmaceutical Opioids	5	10	9	10	12	12	9	24	15	28	17	24	31	37	39	48	45	41	29
Cannabinoids	2	0	0	4	2	8	2	1	2	5	6	7	1	14	15	19	46	35	30

8.3. Queensland

Regional and rural Queensland had higher rates of unintentional drug-induced deaths than Brisbane from 2011 until a reversal in 2019, when regional Queensland had a rate of 5.3 deaths per 100,000 population, while Brisbane had a rate of 5.9 deaths per 100,000 population (Figure 63). The difference between the capital city and regional / rural areas in Queensland is not as great as those observed in New South Wales and Victoria. There appears to be an overall levelling off, or even a decline in unintentional drug-induced deaths, particularly in Brisbane, from 2010 onwards, though rates are still higher than those observed from 2003 to 2007.

This section does not include data as a rate per 100,000 for different drug types, because relatively low numbers in some drug groups for regional and rural Queensland makes calculation of rates less reliable. Numbers, however, are presented in Table 14 and Table 15.

Figure 63. Unintentional drug-induced deaths by regionality in Queensland, 2001-2019, rate per 100,000 population

Note: Data to the right of the dotted line (2018 and 2019 data) are preliminary, and likely to rise.

Table 14. Number of unintentional drug-induced deaths by drug group, Brisbane, 2001-2019

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Stimulants	5	2	2	3	3	4	9	1	10	11	7	18	10	22	31	35	39	45	49
Benzodiazepines	16	8	6	4	3	7	16	28	48	52	43	40	35	37	41	50	71	65	56
Other Pharmaceuticals	11	8	3	7	4	13	11	6	15	15	14	17	23	42	38	56	62	66	60
Heroin	3	2	7	9	10	3	8	9	9	22	23	13	18	15	25	34	31	28	31
Pharmaceutical Opioids	24	14	9	8	7	8	11	7	18	37	35	39	39	52	51	48	63	55	45
Cannabinoids	2	2	1	0	0	4	2	8	10	16	11	15	8	11	17	16	20	33	22

Table 15. Number of unintentional drug-induced deaths by drug group, regional Queensland, 2001-2019

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Stimulants	1	1	0	0	1	6	3	7	13	9	11	17	16	31	36	41	43	35	34
Benzodiazepines	24	15	8	7	10	7	18	17	36	43	44	54	42	53	48	48	63	74	41
Other Pharmaceuticals	8	15	3	3	4	6	10	16	19	25	28	42	33	45	50	64	72	79	45
Heroin	6	4	1	2	1	1	3	6	1	10	9	10	5	11	12	9	14	17	12
Pharmaceutical Opioids	22	10	7	13	12	16	17	27	33	51	43	59	49	75	83	80	81	74	43
Cannabinoids	10	0	1	0	3	2	6	7	18	8	12	11	7	18	16	14	26	43	14

8.4. Western Australia

Greater Perth and regional / rural Western Australia have both seen an overall increase in rates of unintentional drug-induced deaths since 2001 (Figure 64). In 2019, the rates of unintentional drug-induced deaths were 9.6 deaths per 100,000 population in regional and rural Western Australia compared with 8.3 deaths per 100,000 population in Perth. However, the relatively small population living in regional and rural Western Australia means that small fluctuations in the number of unintentional drug-induced deaths can appear large when measured in terms of rates.

This section does not include data as a rate per 100,000 for different drug types, because relatively low numbers in some drug groups for regional and rural Western Australia makes calculation of rates less reliable. Numbers, however, are presented in Table 16 and Table 17.

Figure 64. Unintentional drug-induced deaths by regionality in Western Australia, 2001-2019, rate per 100,000 population
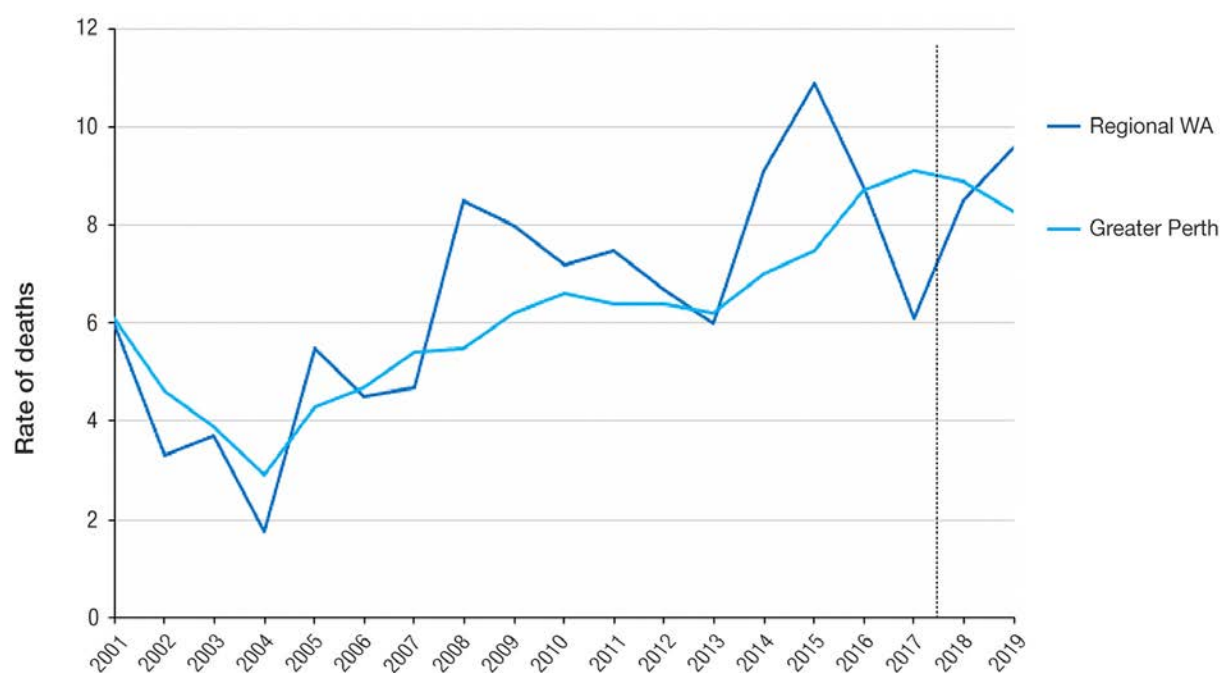
Note: Data to the right of the dotted line (2018 and 2019 data) are preliminary, and likely to rise.

Table 16. Number of unintentional drug-induced deaths by drug group, Perth, 2001-2019

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Stimulants	10	8	5	9	6	9	10	16	10	9	12	16	29	38	32	58	70	72	65
Benzodiazepines	21	19	1	10	16	20	19	36	32	48	30	32	26	43	47	62	92	90	64
Other Pharmaceuticals	21	19	4	5	7	18	15	24	24	29	29	27	15	31	46	40	84	90	77
Heroin	1	3	4	4	8	4	7	10	24	22	25	29	32	28	29	52	51	62	59
Pharmaceutical Opioids	14	22	9	10	18	23	14	31	37	48	40	40	36	48	59	63	74	57	54
Cannabinoids	7	10	2	3	7	11	6	10	11	11	17	14	11	21	14	26	39	52	31

Table 17. Number of unintentional drug-induced deaths by drug group, regional Western Australia, 2001-2019

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Stimulants	2	1	0	0	2	0	1	4	1	1	4	0	1	10	13	15	1	20	18
Benzodiazepines	3	1	0	0	7	3	2	10	8	8	7	14	2	10	14	7	10	19	11
Other Pharmaceuticals	1	2	1	1	6	5	2	8	6	8	8	8	4	6	14	9	11	26	11
Heroin	0	0	3	4	0	0	4	4	2	4	5	0	3	6	9	7	4	9	12
Pharmaceutical Opioids	2	2	1	1	8	4	1	19	12	13	15	10	8	23	17	17	12	20	19
Cannabinoids	2	1	0	0	1	4	1	4	3	3	6	8	1	7	9	9	3	14	5

8.5. Unintentional drug-induced deaths by state and territory

As shown in Table 18, the rate of unintentional drug-induced deaths per 100,000 population has increased across Australia for all drug types, when comparing the period 2005-2009 with the years 2015-2019. The ratio between the 2015-2019 rate and the 2005-2009 rate highlights the magnitude of changes during this time.

Queensland consistently has some of the largest increases in the rates of unintentional drug-induced deaths for different drug types. The rate of deaths due to pharmaceutical opioids in Queensland has more than trebled between 2005-2009 and 2015-2019 (with a ratio of 3.4), while its deaths due to other pharmaceuticals have increased by a factor of five. Deaths involving stimulants in Queensland have increased by almost six-fold, with a ratio of 5.8.

Western Australia has seen a large increase in unintentional deaths due to stimulants, with a ratio for the change in rates of 5.3, as well as heroin, for which deaths have more than quadrupled during this time (with a ratio of 4.3).

The largest increases in rates of unintentional deaths have been recorded for cannabinoids, with a national ratio of 6.4 and particularly high ratios for NSW (13.7) and Victoria (9.2).

Table 18. Number and rate per 100,000 population of unintentional drug-induced deaths, by drug type and state and territory, 2005-2009 and 2015-2019

	2005-2009 number	2015-2019 number	2005-2009 rate	2015-2019 rate	Ratio
Benzodiazepines					
NSW	284	921	0.8	2.4	2.9
VIC	330	1,050	1.3	3.4	2.7
QLD	189	560	0.9	2.4	2.6
SA	93	107	1.2	1.3	1.1
WA	154	422	1.5	3.3	2.3
TAS	60	65	2.6	2.5	1.0
NT	12	12	np	np	np
ACT	7	33	np	1.6	np
Australia	**1,129**	**3,170**	**1.1**	**2.7**	**2.4**

Table 18 continued

	2005-2009 number	2015-2019 number	2005-2009 rate	2015-2019 rate	Ratio
Pharmaceutical opioids					
NSW	327	830	1.0	2.2	2.3
VIC	315	647	1.2	2.1	1.7
QLD	156	626	0.8	2.7	3.4
SA	101	129	1.3	1.5	1.2
WA	168	400	1.6	3.1	2.0
TAS	45	52	1.9	2.1	1.1
NT	10	16	np	np	np
ACT	18	31	np	1.5	np
Australia	**1,140**	**2,731**	**1.1**	**2.3**	**2.1**

	2005-2009 number	2015-2019 number	2005-2009 rate	2015-2019 rate	Ratio
Other pharmaceuticals					
NSW	258	692	0.8	1.8	2.4
VIC	219	823	0.8	2.7	3.2
QLD	104	597	0.5	2.5	5.0
SA	110	87	1.4	1.0	0.8
WA	116	413	1.1	3.3	3.0
TAS	51	64	2.1	2.5	1.2
NT	11	11	np	np	np
ACT	10	31	np	1.5	np
Australia	**879**	**2,718**	**0.8**	**2.3**	**2.7**

Table 18 continued

	2005-2009 number	2015-2019 number	2005-2009 rate	2015-2019 rate	Ratio
Stimulants					
NSW	122	667	0.4	1.8	4.8
VIC	115	658	0.4	2.2	4.8
QLD	58	391	0.3	1.7	5.8
SA	31	95	0.4	1.2	2.8
WA	59	375	0.6	3.0	5.3
TAS	13	35	np	1.5	np
NT	3	13	np	np	np
ACT	7	43	np	2.1	np
Australia	**408**	**2,277**	**0.4**	**2.0**	**4.9**

	2005-2009 number	2015-2019 number	2005-2009 rate	2015-2019 rate	Ratio
Heroin					
NSW	142	524	0.4	1.4	3.3
VIC	305	792	1.2	2.6	2.2
QLD	57	217	0.3	0.9	3.3
SA	49	80	0.7	1.0	1.5
WA	57	297	0.5	2.4	4.3
TAS	2	9	np	np	np
NT	1	2	np	np	np
ACT	18	31	np	1.5	np
Australia	**631**	**1,952**	**0.6**	**1.7**	**2.7**

Table 18 continued

	2005-2009 number	2015-2019 number	2005-2009 rate	2015-2019 rate	Ratio
Cannabinoids					
NSW	26	400	0.1	1.1	13.7
VIC	44	480	0.2	1.6	9.2
QLD	56	223	0.3	1.0	3.4
SA	5	46	np	0.6	np
WA	53	207	0.5	1.7	3.3
TAS	6	22	np	1.0	np
NT	1	9	np	np	np
ACT	3	28	np	1.4	np
Australia	**194**	**1,415**	**0.2**	**1.2**	**6.4**

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

8.6. Drug-induced deaths by Primary Health Network

Primary Health Networks (PHNs) are healthcare bodies coordinating primary health and other services for geographic catchments areas in Australia. There are 31 PHNs in Australia. Table 19 presents unintentional drug-induced deaths, drug-induced suicides and total drug-induced deaths for each PHN.

Table 19. Unintentional drug-induced deaths, drug-induced suicides and all drug-induced deaths, by PHN, numbers 2005-2019, and rates per 100,000 population for 2005-2009, 2010-2014 and 2015-2019

Type of drug-induced death	2005 no.	2006 no.	2007 no.	2008 no.	2009 no.	2010 no.	2011 no.	2012 no.	2013 no.	2014 no.	2015 no.	2016 no.	2017 no.	2018 no.	2019 no.	2005-2009 rate	2010-2014 rate	2015-2019 rate
PHN101 Central and Eastern Sydney																		
Unintentional Drug-induced Deaths	91	100	96	95	107	99	86	82	117	114	130	135	132	131	120	6.9	6.6	7.9
Drug-induced Suicides	22	12	30	27	17	23	21	28	22	25	27	22	32	22	21	1.6	1.6	1.6
Total Drug-induced Deaths	117	114	133	143	137	133	114	114	140	140	161	158	166	155	145	9.1	8.5	9.6
PHN102 Northern Sydney																		
Unintentional Drug-induced Deaths	24	27	26	27	26	32	38	38	37	28	46	48	48	38	41	3.1	3.8	4.6
Drug-induced Suicides	5	5	13	15	12	11	13	16	15	7	13	10	9	11	7	1.2	1.3	1.0
Total Drug-induced Deaths	29	33	41	45	44	46	52	56	54	37	60	60	57	49	48	4.5	5.3	5.6
PHN103 Western Sydney																		
Unintentional Drug-induced Deaths	36	28	24	40	44	38	53	44	44	41	55	48	59	63	52	4.6	5.2	5.8
Drug-induced Suicides	4	4	2	13	1	5	8	13	13	8	12	9	9	9	1	0.7	1.1	0.9
Total Drug-induced Deaths	37	34	32	55	52	49	63	60	59	51	69	58	68	74	57	5.6	6.7	6.8
PHN104 Nepean Blue Mountains																		
Unintentional Drug-induced Deaths	18	12	18	23	16	21	29	23	22	21	24	38	30	31	32	5.4	6.7	8.5
Drug-induced Suicides	4	4	6	4	10	7	4	6	5	6	6	2	7	9	2	1.4	1.6	1.4
Total Drug-induced Deaths	23	15	27	25	27	30	32	30	29	29	31	42	40	41	36	7.2	8.8	10.3

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2005-2009	2010-2014	2015-2019
	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	rate	rate	rate
PHN105 South Western Sydney																		
Unintentional Drug-induced Deaths	26	40	43	44	57	47	44	42	47	68	73	46	76	71	64	5.3	5.8	7.0
Drug-induced Suicides	7	7	6	2	10	7	15	13	1	20	7	7	9	11	13	0.8	1.4	1.0
Total Drug-induced Deaths	33	49	55	53	72	59	60	60	53	90	83	53	86	89	81	6.6	7.5	8.2
PHN106 South Eastern NSW																		
Unintentional Drug-induced Deaths	34	24	34	26	33	30	37	38	38	55	52	62	52	43	53	5.4	6.7	8.3
Drug-induced Suicides	8	8	3	6	6	13	15	17	12	11	12	15	12	10	18	1.1	2.2	2.1
Total Drug-induced Deaths	43	35	44	50	45	47	59	57	52	67	66	79	69	54	72	7.8	9.5	10.8
PHN107 Western NSW																		
Unintentional Drug-induced Deaths	15	19	9	16	15	18	27	12	22	33	28	35	33	28	26	5.0	7.5	10.0
Drug-induced Suicides	1	2	2	4	1	1	1	2	1	2	1	4	5	5	5	np	np	1.2
Total Drug-induced Deaths	17	21	14	20	17	21	28	15	27	40	31	40	39	33	32	6.1	8.8	11.6
PHN108 Hunter New England and Central Coast																		
Unintentional Drug-induced Deaths	53	64	53	45	51	70	68	70	62	94	97	84	102	100	91	4.7	6.0	7.7
Drug-induced Suicides	8	11	13	17	20	11	16	28	25	22	27	31	36	32	24	1.2	1.8	2.3
Total Drug-induced Deaths	61	76	80	75	81	86	89	107	93	126	128	115	142	135	126	6.5	8.4	10.4

— nil or rounded to zero (including null cells)

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

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2005-2009	2010-2014	2015-2019
	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	rate	rate	rate
PHN109 North Coast																		
Unintentional Drug-induced Deaths	22	32	25	22	26	33	28	39	36	54	40	45	48	51	37	5.2	7.8	8.7
Drug-induced Suicides	5	3	8	5	7	1	3	10	6	11	13	16	15	14	11	1.1	1.3	2.5
Total Drug-induced Deaths	28	37	54	38	47	49	32	50	45	72	55	62	65	68	49	8.5	10.1	11.5
PHN110 Murrumbidgee																		
Unintentional Drug-induced Deaths	8	14	9	10	11	8	8	16	11	16	16	19	13	14	25	4.4	5.2	7.4
Drug-induced Suicides	3	0	1	3	0	4	3	5	3	0	5	6	2	5	6	np	np	2.0
Total Drug-induced Deaths	10	14	13	13	11	14	14	22	15	17	24	25	16	20	33	5.3	7.4	9.9
PHN201 North Western Melbourne																		
Unintentional Drug-induced Deaths	39	43	50	66	67	58	59	35	70	65	70	72	93	72	91	4.0	4.1	5.2
Drug-induced Suicides	19	15	15	13	17	19	20	18	15	25	28	28	20	22	27	1.2	1.3	1.5
Total Drug-induced Deaths	60	63	73	91	97	84	87	64	90	92	101	103	120	96	122	5.8	5.9	7.0
PHN202 Eastern Melbourne																		
Unintentional Drug-induced Deaths	39	43	50	66	67	58	59	35	70	65	70	72	93	72	91	4.0	4.1	5.2
Drug-induced Suicides	19	15	15	13	17	19	20	18	15	25	28	28	20	22	27	1.2	1.3	1.5
Total Drug-induced Deaths	60	63	73	91	97	84	87	64	90	92	101	103	120	96	122	5.8	5.9	7.0

— nil or rounded to zero (including null cells)

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	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2005-2009	2010-2014	2015-2019
	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	rate	rate	rate
PHN203 South Eastern Melbourne																		
Unintentional Drug-induced Deaths	63	58	64	78	83	89	76	55	62	81	92	115	108	110	91	5.4	5.2	6.6
Drug-induced Suicides	9	19	17	15	31	25	24	14	17	27	27	24	40	23	24	1.4	1.5	1.7
Total Drug-induced Deaths	75	85	89	113	133	120	110	83	82	116	126	147	151	140	120	7.7	7.3	8.7
PHN204 Gippsland																		
Unintentional Drug-induced Deaths	11	7	12	14	23	17	14	9	17	27	19	30	25	28	19	6.0	6.9	9.6
Drug-induced Suicides	2	4	2	5	4	2	8	1	3	8	1	3	5	3	6	1.6	1.6	1.4
Total Drug-induced Deaths	15	11	15	19	29	22	25	14	22	37	24	35	30	33	26	7.8	9.4	11.5
PHN205 Murray																		
Unintentional Drug-induced Deaths	31	25	23	29	31	24	34	29	38	36	44	47	63	50	53	5.1	5.9	8.9
Drug-induced Suicides	9	4	10	6	7	2	8	9	13	11	13	10	11	14	10	1.2	1.4	1.8
Total Drug-induced Deaths	42	29	34	37	41	30	50	45	55	53	59	63	75	69	65	6.7	8.5	11.3
PHN206 Grampians and Barwon South West																		
Unintentional Drug-induced Deaths	30	35	26	42	35	35	35	25	20	46	42	41	68	45	60	6.0	5.5	8.4
Drug-induced Suicides	9	2	5	10	6	5	4	6	6	12	3	10	9	15	10	1.2	1.1	1.4
Total Drug-induced Deaths	39	42	35	57	48	47	55	42	27	61	48	51	78	62	71	8.0	8.0	10.0

— nil or rounded to zero (including null cells)

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	2005 no.	2006 no.	2007 no.	2008 no.	2009 no.	2010 no.	2011 no.	2012 no.	2013 no.	2014 no.	2015 no.	2016 no.	2017 no.	2018 no.	2019 no.	2005-2009 rate	2010-2014 rate	2015-2019 rate
PHN301 Brisbane North																		
Unintentional Drug-induced Deaths	26	29	43	36	43	65	55	56	45	53	62	65	54	50	62	4.3	6.0	5.9
Drug-induced Suicides	9	13	15	11	15	11	22	21	22	25	20	16	20	24	26	1.6	2.2	2.1
Total Drug-induced Deaths	37	47	59	50	61	78	77	77	69	81	86	81	74	77	93	6.2	8.4	8.1
PHN302 Brisbane South																		
Unintentional Drug-induced Deaths	42	23	36	38	49	76	64	55	49	69	52	59	84	70	70	4.0	5.9	6.0
Drug-induced Suicides	8	15	15	18	14	19	10	21	20	19	27	21	24	27	30	1.5	1.7	2.2
Total Drug-induced Deaths	52	44	55	62	64	96	76	78	71	90	81	80	109	102	105	5.8	7.8	8.4
PHN303 Gold Coast																		
Unintentional Drug-induced Deaths	20	17	19	19	26	24	36	39	31	40	48	42	54	41	35	4.1	6.2	7.2
Drug-induced Suicides	15	9	14	15	13	11	8	5	18	17	19	15	31	15	8	2.6	2.1	2.7
Total Drug-induced Deaths	37	27	34	38	40	35	44	45	49	59	68	59	89	57	44	7.1	8.4	10.2
PHN304 Darling Downs and West Moreton																		
Unintentional Drug-induced Deaths	13	13	14	19	37	27	28	25	28	23	41	33	25	28	27	4.2	5.2	5.8
Drug-induced Suicides	9	1	9	9	9	3	7	8	8	10	16	9	7	8	14	1.7	1.4	1.9
Total Drug-induced Deaths	25	17	24	30	47	31	35	35	40	34	57	42	32	38	42	6.3	7.0	7.9

— nil or rounded to zero (including null cells)

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	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2005-2009	2010-2014	2015-2019
	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	rate	rate	rate
PHN305 Western Queensland																		
Unintentional Drug-induced Deaths	4	0	3	5	2	6	5	2	6	4	3	2	2	1	3	np	6.8	np
Drug-induced Suicides	1	3	0	0	3	1	0	0	0	4	3	0	0	0	0	np	np	np
Total Drug-induced Deaths	4	1	2	5	3	7	5	5	6	4	6	4	1	3	1	np	7.7	np
PHN306 Central Queensland and Sunshine Coast																		
Unintentional Drug-induced Deaths	20	26	32	38	46	63	52	64	65	66	58	67	49	73	45	4.4	8.1	7.3
Drug-induced Suicides	10	11	12	10	13	9	11	20	25	24	31	23	24	31	18	1.4	2.0	2.6
Total Drug-induced Deaths	36	41	45	55	60	76	64	84	97	92	91	92	73	104	67	6.4	10.5	10.2
PHN307 Northern Queensland																		
Unintentional Drug-induced Deaths	27	30	31	28	37	39	43	36	33	30	53	58	34	35	39	5.1	5.3	6.4
Drug-induced Suicides	9	11	11	6	8	8	16	12	10	9	16	12	13	10	13	1.5	1.7	1.8
Total Drug-induced Deaths	36	42	42	35	46	47	62	50	44	42	69	70	48	48	57	6.7	7.3	8.5
PHN401 Adelaide																		
Unintentional Drug-induced Deaths	63	45	73	76	86	77	52	84	46	68	51	88	97	70	48	6.1	5.5	5.6
Drug-induced Suicides	19	24	18	22	21	18	16	18	23	31	31	30	30	24	31	1.8	1.7	2.2
Total Drug-induced Deaths	87	77	97	110	116	110	87	119	90	113	97	124	136	112	109	8.6	8.7	9.2

— nil or rounded to zero (including null cells)

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

	2005 no.	2006 no.	2007 no.	2008 no.	2009 no.	2010 no.	2011 no.	2012 no.	2013 no.	2014 no.	2015 no.	2016 no.	2017 no.	2018 no.	2019 no.	2005-2009 rate	2010-2014 rate	2015-2019 rate
PHN402 Country SA																		
Unintentional Drug-induced Deaths	24	17	20	21	28	17	21	20	19	15	26	24	26	22	10	4.6	3.5	4.3
Drug-induced Suicides	8	6	7	10	3	6	11	7	10	8	11	7	14	8	9	1.4	1.7	1.8
Total Drug-induced Deaths	34	23	29	32	32	25	37	34	35	28	44	33	43	31	28	6.2	6.3	7.1
PHN501 Perth North																		
Unintentional Drug-induced Deaths	35	42	49	51	77	62	59	71	65	64	75	86	94	88	83	5.7	6.4	7.9
Drug-induced Suicides	8	5	18	16	23	24	16	23	21	24	20	22	28	18	28	1.6	2.1	2.1
Total Drug-induced Deaths	45	47	72	69	100	88	76	97	88	91	101	113	126	114	116	7.5	8.8	10.5
PHN502 Perth South																		
Unintentional Drug-induced Deaths	31	33	41	44	34	55	60	49	55	77	73	89	91	95	94	4.7	6.6	9.2
Drug-induced Suicides	9	6	14	9	16	22	15	23	14	19	20	21	20	22	19	1.4	2.0	2.0
Total Drug-induced Deaths	41	41	58	57	52	78	76	77	69	101	94	114	115	122	119	6.4	8.9	11.6
PHN503 Country WA																		
Unintentional Drug-induced Deaths	25	17	20	40	36	35	36	35	28	47	56	45	31	45	50	6.0	6.8	8.6
Drug-induced Suicides	1	1	5	2	7	5	7	9	2	11	10	12	11	12	8	1.0	1.3	1.8
Total Drug-induced Deaths	30	21	27	46	43	42	43	45	33	60	69	60	42	58	59	7.2	8.4	10.7

— nil or rounded to zero (including null cells)

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

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2005-2009	2010-2014	2015-2019
	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.	rate	rate	rate
PHN601 Tasmania																		
Unintentional Drug-induced Deaths	34	30	32	27	40	28	36	28	27	37	31	47	36	33	29	6.4	5.9	6.6
Drug-induced Suicides	12	7	8	7	11	10	8	11	11	15	13	21	12	9	23	1.8	2.0	2.6
Total Drug-induced Deaths	46	45	49	40	60	41	47	42	45	54	49	70	54	44	55	9.6	8.6	9.8
PHN701 Northern Territory																		
Unintentional Drug-induced Deaths	16	15	20	12	12	16	9	17	11	10	15	9	15	17	17	7.7	6.6	6.6
Drug-induced Suicides	3	1	2	3	0	2	4	0	3	6	2	4	1	2	0	np	np	np
Total Drug-induced Deaths	17	20	22	15	12	19	11	19	13	16	20	12	21	19	19	8.9	8.2	8.2
PHN801 Australian Capital Territory																		
Unintentional Drug-induced Deaths	23	9	22	22	17	20	16	12	23	21	16	28	27	27	21	5.3	4.8	5.8
Drug-induced Suicides	5	5	1	3	7	1	5	5	1	9	7	3	15	8	17	1.5	1.4	2.4
Total Drug-induced Deaths	28	14	28	28	30	25	22	17	27	31	24	33	43	39	40	7.3	6.3	8.7
AUSTRALIA																		
Unintentional Drug-induced Deaths	983	952	1,041	1,171	1,281	1,325	1,319	1,237	1,276	1,513	1,612	1,744	1,819	1,720	1,644	5.2	5.8	7.0
Drug-induced Suicides	248	230	298	295	342	304	333	386	376	451	473	439	502	462	456	1.3	1.6	1.8
Total Drug-induced Deaths	1,278	1,262	1,480	1,648	1,785	1,756	1,775	1,762	1,748	2,068	2,178	2,244	2,397	2,282	2,227	7.1	7.9	9.2

— nil or rounded to zero (including null cells)

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

8.7. Unintentional drug-induced deaths by local areas

The following figures represent the rate (per 100,000 population) of unintentional drug-induced deaths by Statistical Area 3 (SA3), aggregated over the 2015-2019 period.[31] SA3s are geographic designations used by the ABS to provide a means for regional analysis. Most SA3s have a population of between 30,000 and 130,000 people, though in major cities they represent areas serviced by a major transport and commercial hub (and may have a population of greater than 130,000).

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

Figure 65. Australia: Unintentional drug-induced deaths 2015-2019 (Statistical Area 3), rate per 100,000 population

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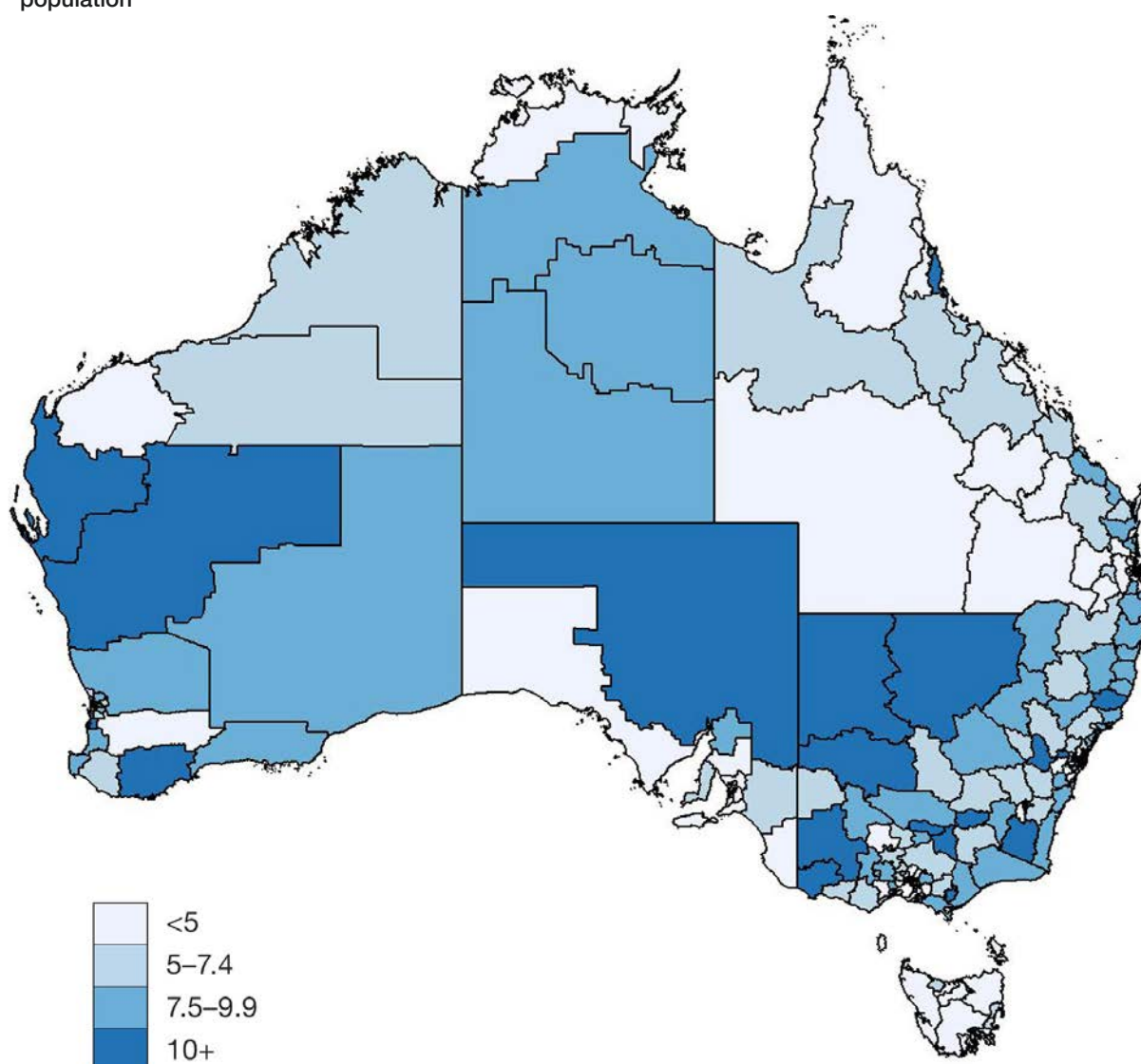
[31] The maps were created in 'R Studio' (R Core Team, Vienna, Austria) using the 'ggplot2' package (Wickham, 2016).

Figure 66 and Figure 67. Sydney and NSW: Unintentional drug-induced deaths 2015-2019 (Statistical Area 3), rate per 100,000 population
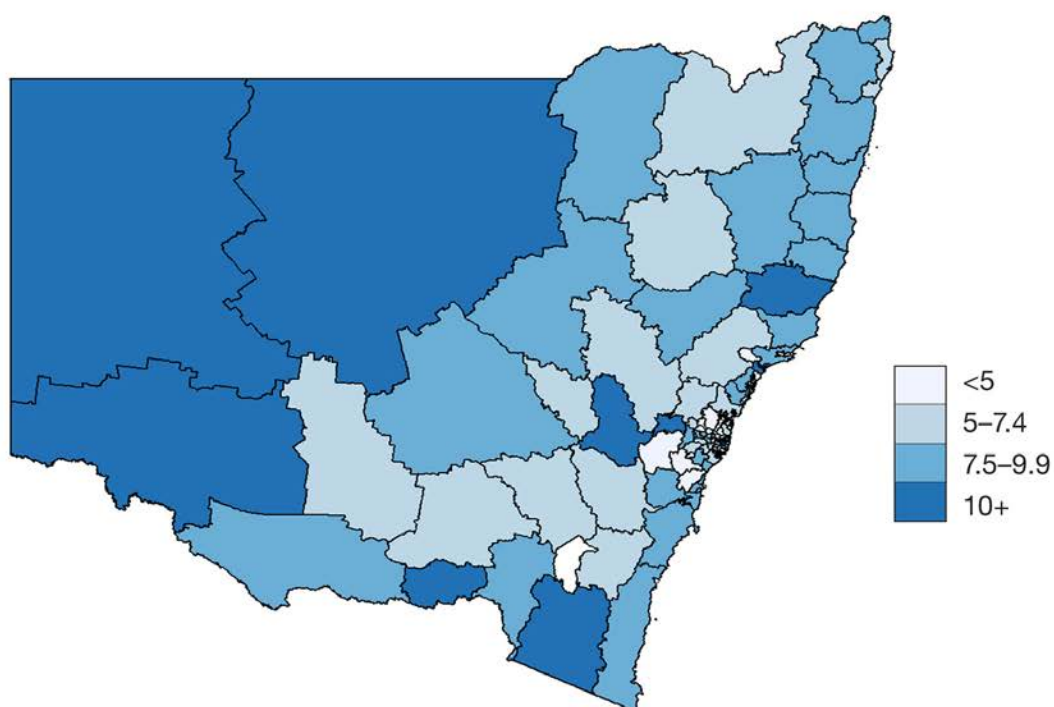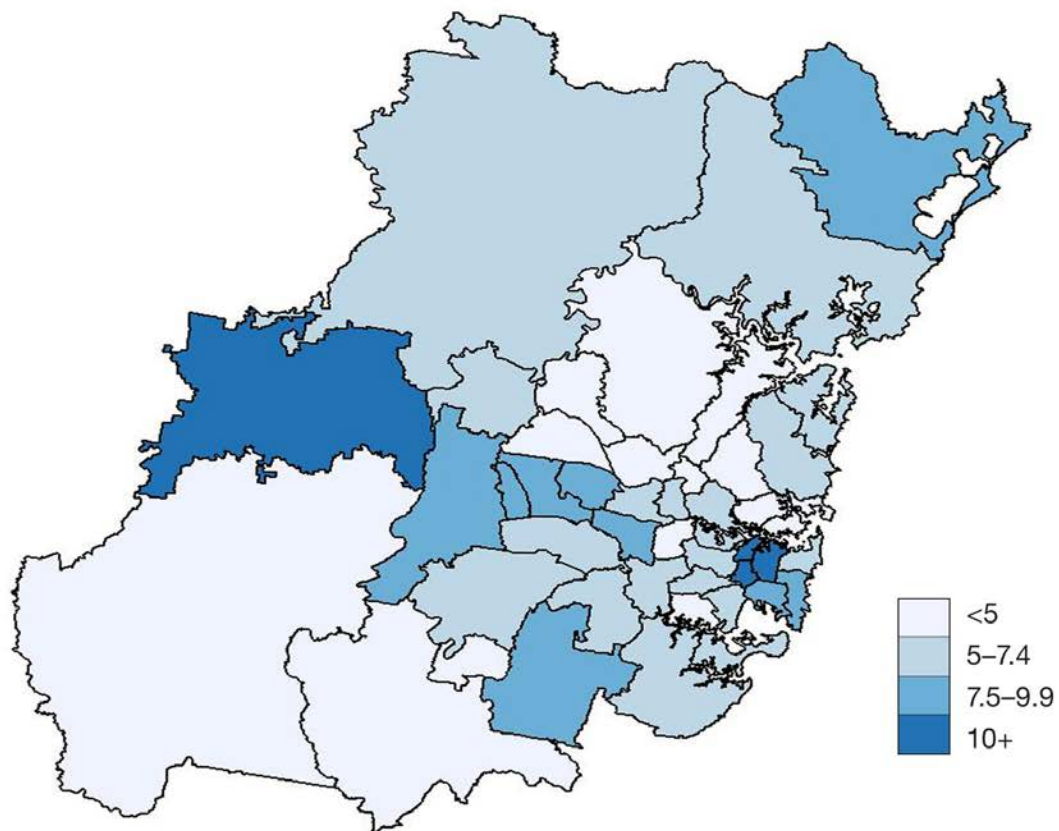
Figure 68 and Figure 69. Melbourne and Victoria: Unintentional drug-induced deaths 2015-2019 (Statistical Area 3), rate per 100,000 population
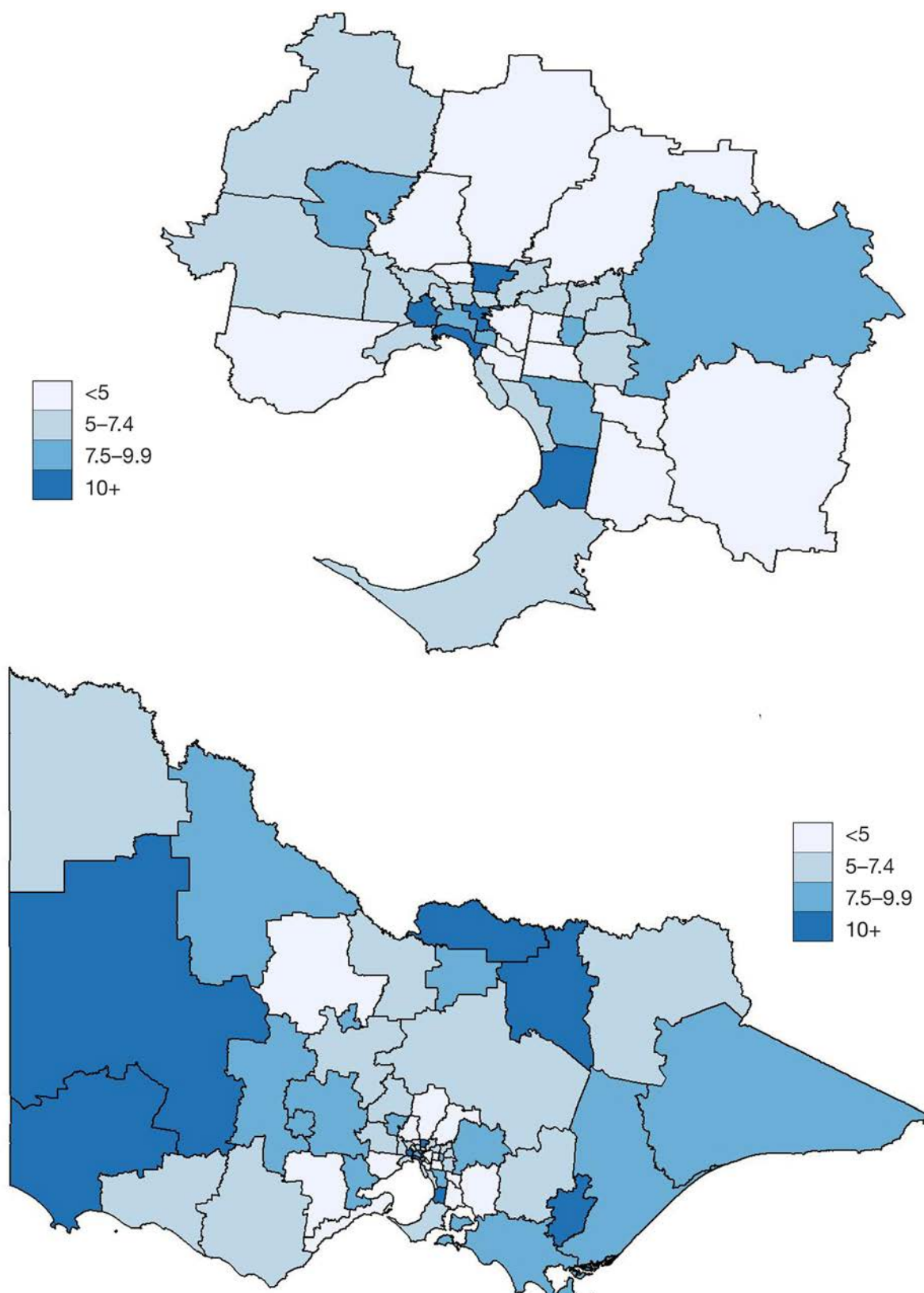
Figure 70 and Figure 71. Brisbane and Queensland: Unintentional drug-induced deaths 2015-2019 (Statistical Area 3), rate per 100,000 population
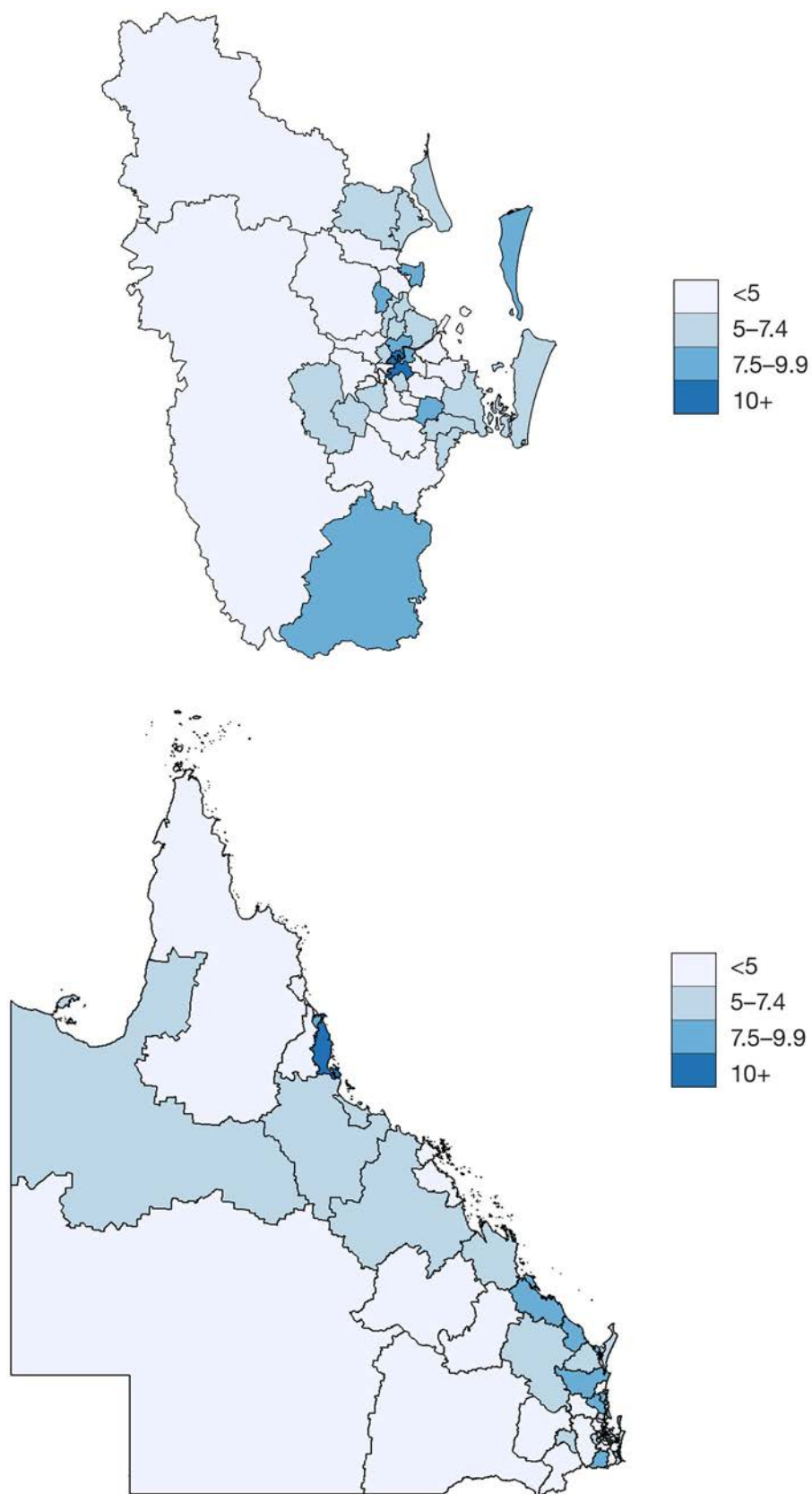
Figure 72 and Figure 73. Perth and WA: Unintentional drug-induced deaths 2015-2019 (Statistical Area 3), rate per 100,000 population
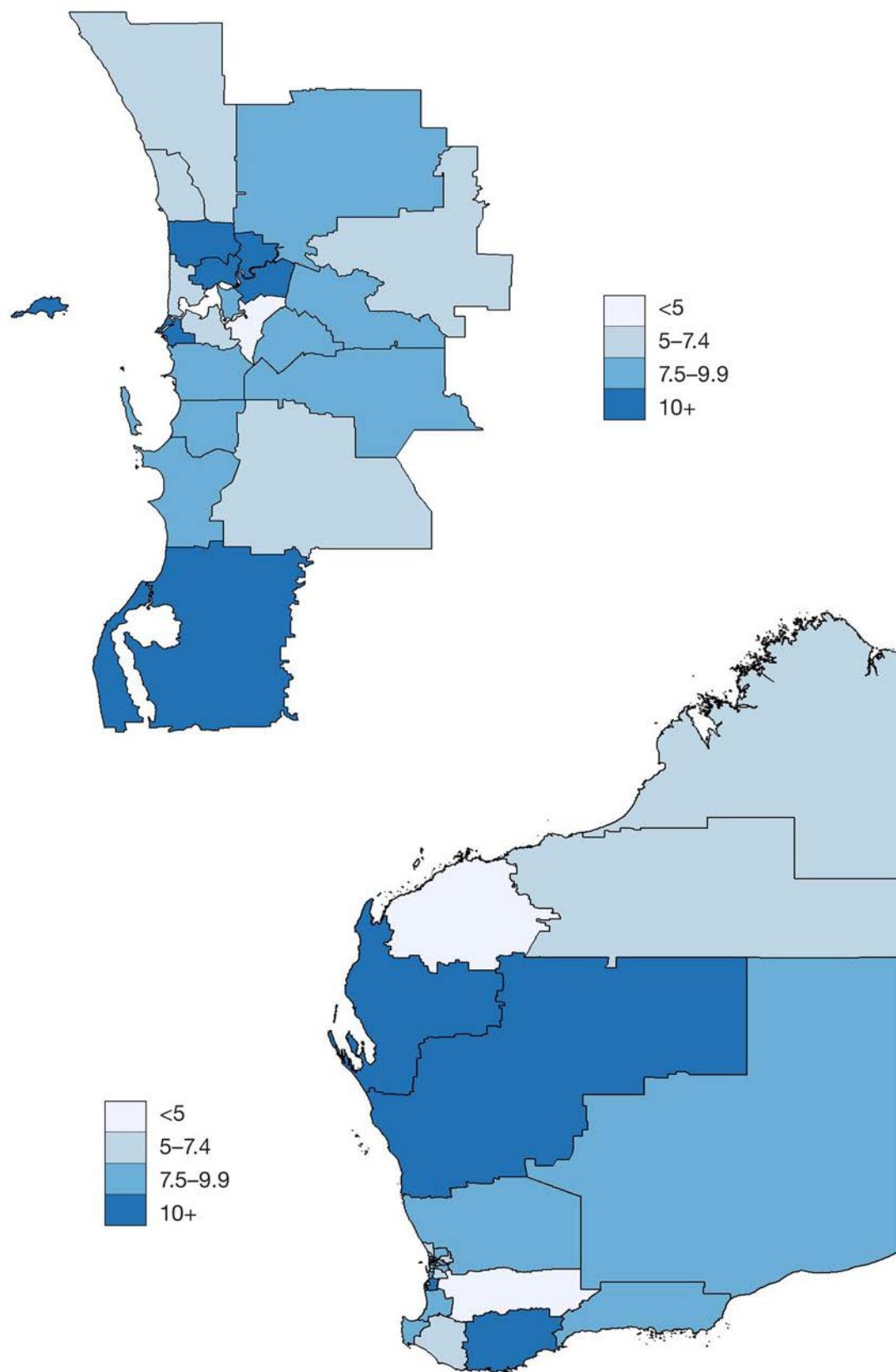
Figure 74 and Figure 75. Adelaide and SA: Unintentional drug-induced deaths 2015-2019 (Statistical Area 3), rate per 100,000 population
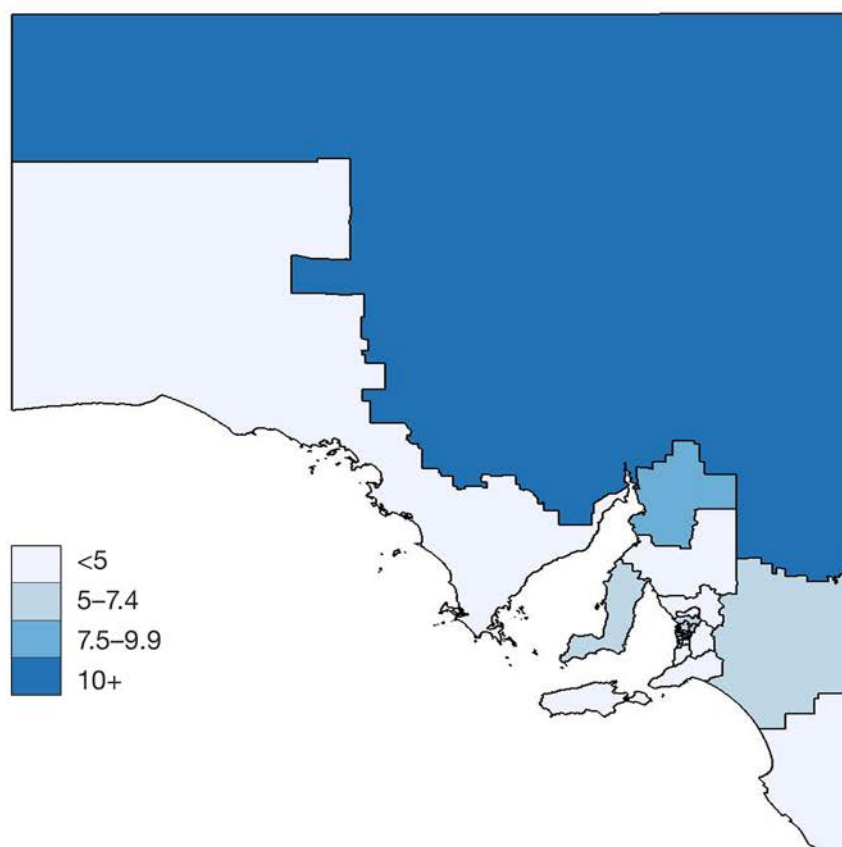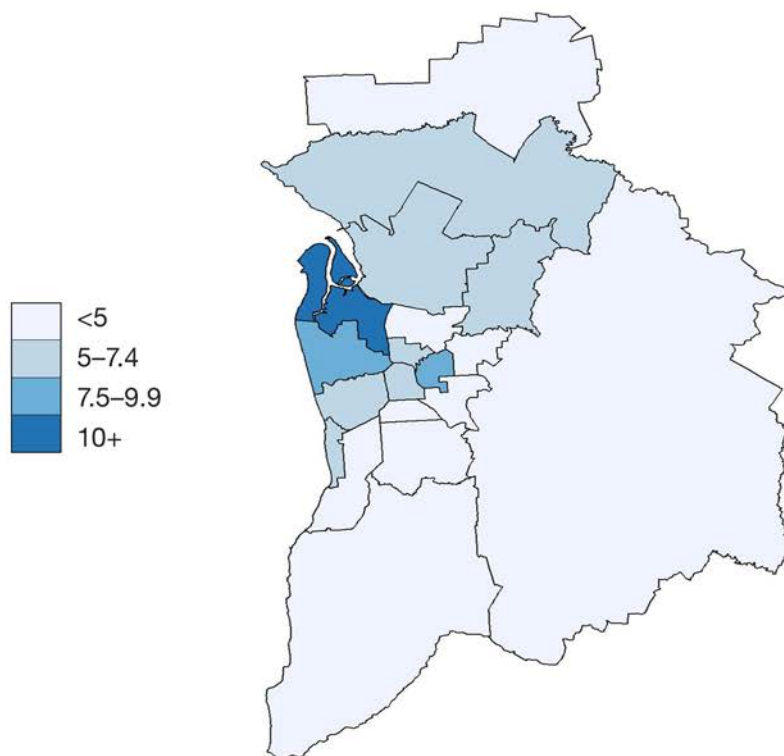
Figure 76 and Figure 77. Hobart and Tasmania: Unintentional drug-induced deaths 2015-2019 (Statistical Area 3), rate per 100,000 population
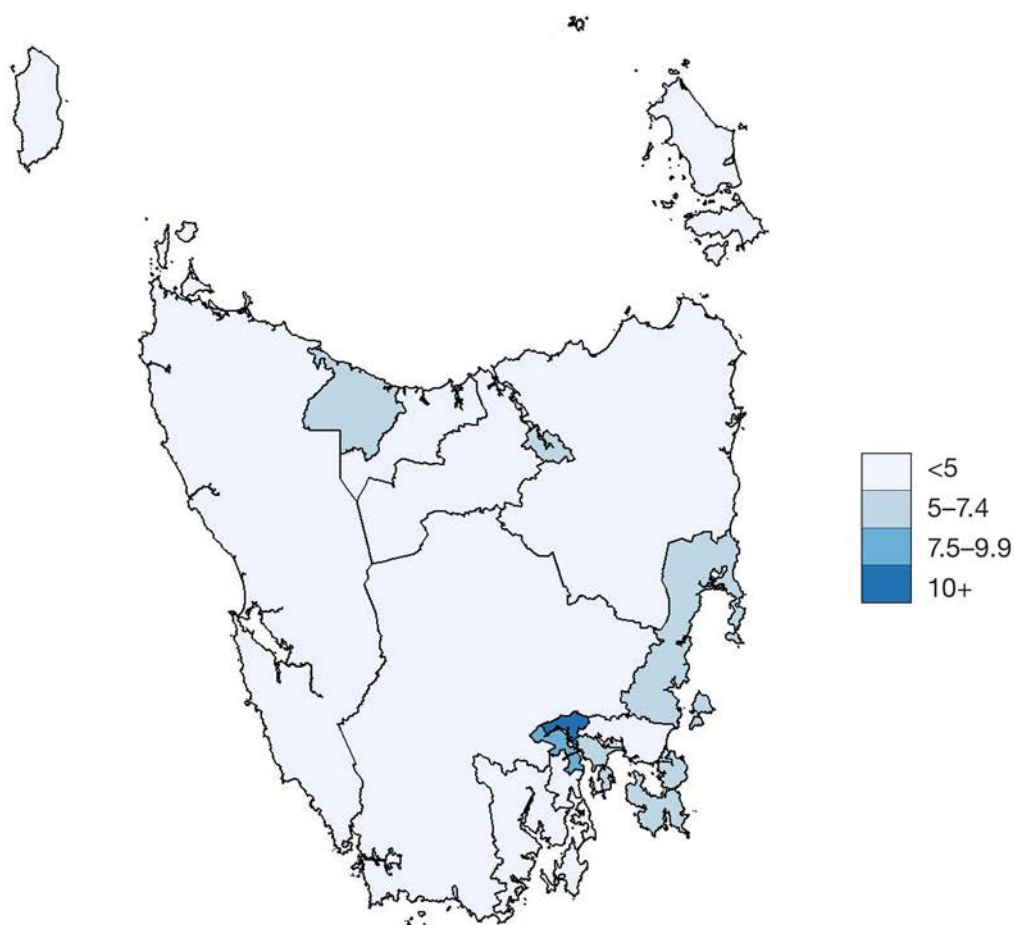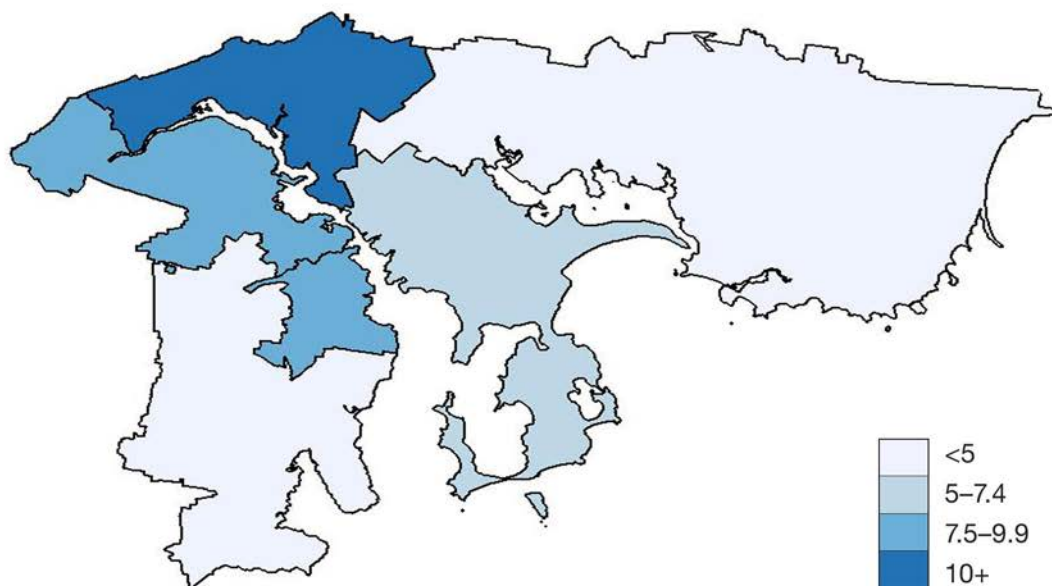
Figure 78 and Figure 79. Darwin and NT: Unintentional drug-induced deaths 2015-2019 (Statistical Area 3), rate per 100,000 population
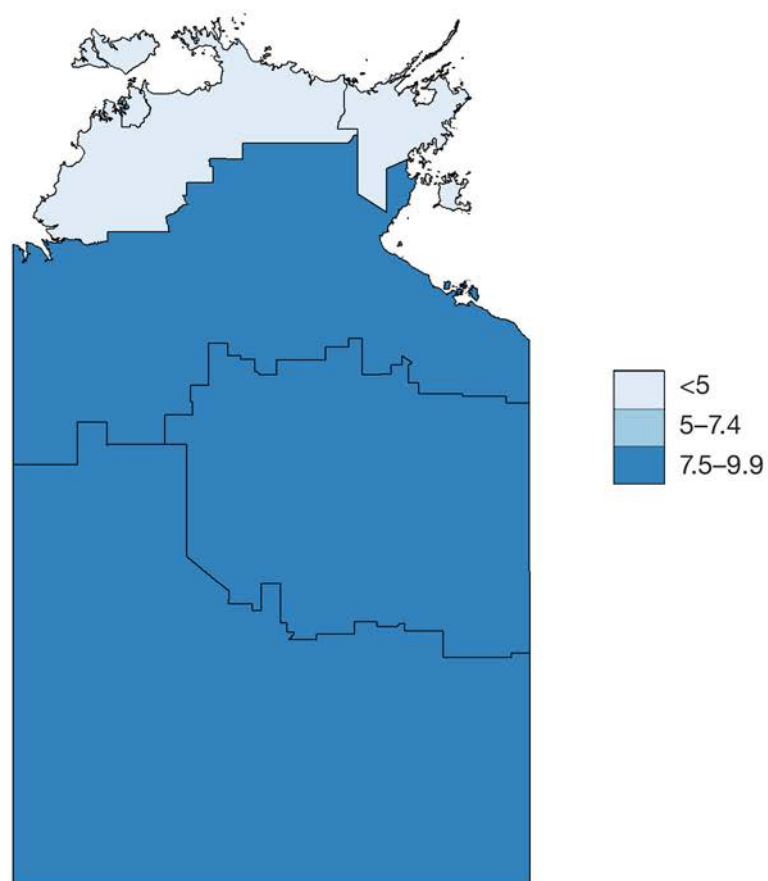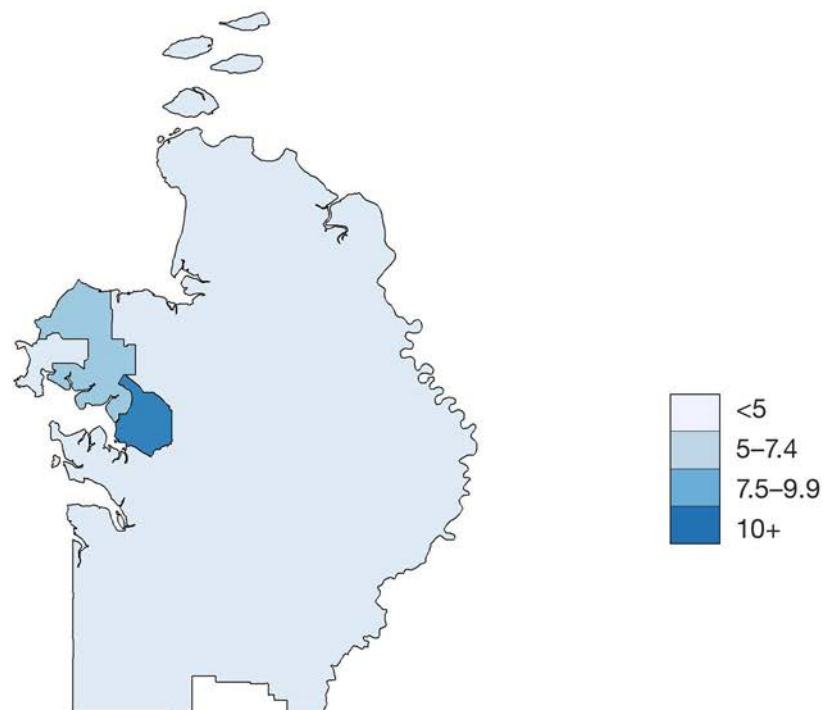
Figure 80. ACT: Unintentional drug-induced deaths 2015-2019 (Statistical Area 3), rate per 100,000 population
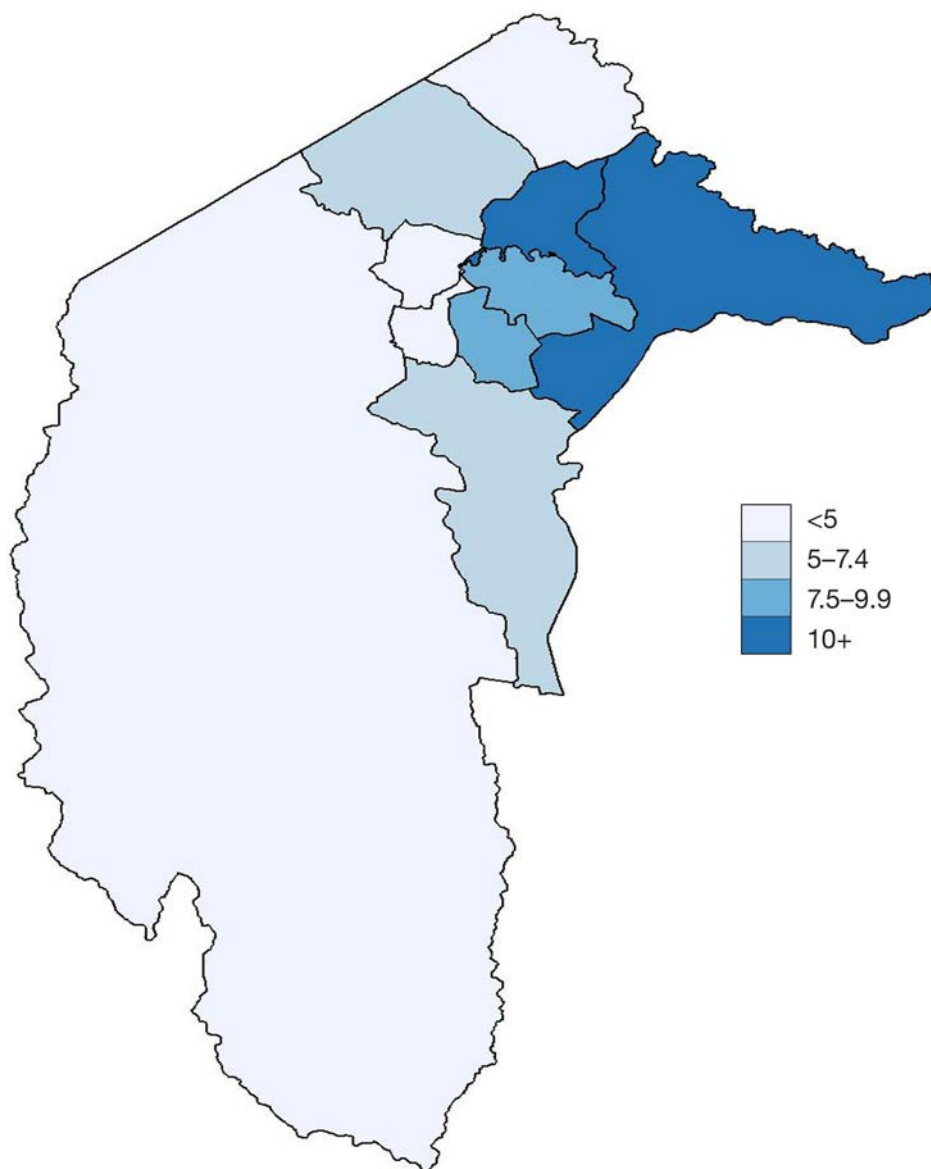
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10. Appendix 1 – technical specifications

10.1. Source of data

This report is based on cause of death information, which is certified by doctors or coroners (as the case requires), collected by state and territory governments, and validated and compiled by the ABS.

10.2. Preliminary and revised data

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

In Penington Institute's 2020 Overdose Report, the data for 2017 were revised, the data for 2018 data were preliminary, and the data for 2019 were not yet available. In the current 2021 report, data for 2017 are finalised, data for 2018 are revised, and data for 2019 are preliminary. This means that 2018 and 2019 data are likely to increase in subsequent reports, as cases progress. This also means that, in this report, the data for 2017 and 2018 will appear different from last year's Penington Institute report.

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

Table A1. Status of data, 2016-2019

2019 report		2016 revised	2017 preliminary		
	All drug-induced deaths	2,231	2,162		
	Unintentional drug-induced deaths	1,728	1,612		

2020 report		2016 finalised	2017 revised	2018 preliminary	
	All drug-induced deaths	2,244	2,274	2,070	
	Unintentional drug-induced deaths	1,744	1,722	1,556	

2021 report			2017 finalised	2018 revised	2019 preliminary
	All drug-induced deaths		2,397	2,282	2,227
	Unintentional drug-induced deaths		1,819	1,720	1,644

10.3. Definitions

These definitions are based on the data provided by the ABS, summarised as per ICD-10 coding.[32]

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

Drug-induced death means a death caused directly by drug use, due to all intents (i.e. homicide, suicide, accidents and undetermined intent). This may include a range of specific causes of death and clinical states which broadly fall into either drug poisoning or mental and behavioural disorders due to psychoactive substance use. The definition excludes deaths indirectly related to drug use, such as where drugs may have played a contributory role (e.g. in a fatal traffic crash).

Unintentional drug-induced deaths means drug-induced deaths determined to be unintentional by legal rulings.[33] This includes deaths resulting from exposures to drugs or pharmaceuticals where harm or death was not the primary intent, accidental overdose of a drug, wrong drug given or taken in error, drug taken inadvertently, misadventures in the use of drugs, medicaments and biological substances in medical and surgical procedures, or where a harmful amount of drug is taken in error with therapeutic intent resulting in overdose. This does not include circumstances where the correct drug was properly administered in a therapeutic dose, when death is caused by an adverse effect.

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

Road traffic crashes include all deaths due to road-related crashes, involving trucks, cars, buses, pedestrians, motorbikes and cyclists. This is referred to as the "road toll".

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

10.3.1. Description of drug groups

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

Alcohol can include ethanol, methanol, ethylene glycol, isopropanol, and butanol; noting however that what is legally purchased as an alcoholic beverage will contain ethanol. Alcohol is a central nervous system depressant, and when mixed with other depressants in a poly-drug setting, can exacerbate effects and lead to respiratory depression (slow and/or ineffective breathing).[34]

Anti-convulsants (including neuropathic pain modulators, in addition to traditional anti-convulsants) are medicines that were developed to treat epilepsy, but may now be prescribed in Australia to treat chronic neuropathic (nerve) pain and may also be prescribed off-label to treat non-neuropathic pain, anxiety, and other

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[32] World Health Organisation (2016). *International statistical classification of diseases and related health problems 10th Revision:* https://icd.who.int/browse10/2016/en.

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

[34] ABS (2018). *Drug induced deaths in Australia: A changing story. Australia*n Bureau of Statistics: http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/3303.0~2016~Main%20Features~Drug%20Induced%20Deaths%20in%20Australia~6.

conditions. These are sometimes referred to as 'anti-epileptics'. Pregabalin and gabapentin are included in this group; some reports have emerged of non-medical use of these drugs.[35]

Anti-depressants are medicines that are prescribed for the treatment of mental health disorders such as major depressive disorder and obsessive compulsive disorder.[36] This group includes tricyclic and tetracyclic anti-depressants, monoamine-oxidase-inhibitor anti-depressants, and other and unspecified anti-depressants, such as selective serotonin reuptake inhibitors.

Anti-psychotics are medicines that are used to treat mental health conditions where there is a disorder in thought content or mood, such as schizophrenia, mania with bipolar disorder and other mental health indications, and are often prescribed off-label for their sedative effects. Some reports have emerged of non-medical use, particularly with quetiapine.[37] This group includes drugs such as quetiapine, olanzapine, risperidone, paliperidone, amisulpride, and lithium.

Benzodiazepines are medicines used to treat anxiety, relax people, treat some types of seizures and assist with sleep. The most commonly prescribed drugs in this group in Australia are diazepam and temazepam.[38] Long-term use of benzodiazepines can lead to the development of tolerance and physical and psychological dependence. Like opioids, benzodiazepines slow down the central nervous system and consistently rate as one of the most common drug groups detected in drug-induced deaths.[39] When taken alone, benzodiazepines' depressant effect on the respiratory system does not usually result in complete loss of breathing function. However, their effect on respiration is increased when combined with other drugs like alcohol or opioids, making concurrent use of benzodiazepines with alcohol and/or opioids especially dangerous.

Cannabinoids refers to plants or drugs containing chemical compounds that act as agonists on the brain's cannabinoid receptors. The most notable cannabinoid is tetrahydrocannabinol (THC), the primary psychoactive substance found in the cannabis plant. However, this category also includes Synthetic Cannabinoid Receptor Agonists or 'SCRAs' (often sold as 'synthetic marijuana' or other names such as 'spice'), which can be highly potent and have been linked to an array of harms including fatal overdoses. In this report, the term 'cannabinoids' includes phyto-cannabinoids (naturally occurring cannabinoids) such as THC, SCRAs and medicinal cannabis products such as Sativex. The medicinal value of pharmaceutical cannabinoids in treating a variety of conditions is subject to ongoing debate, though the use of pharmaceutical cannabinoids for medicinal purposes is increasing.

Heroin (diamorphine) is an opiate derived from the opium poppy most commonly used for recreational and/or non-medical purposes. In Australia, heroin is typically injected,[40] though it can be smoked, snorted or swallowed. As the sale of heroin is not regulated, it may be mixed with a range of harmful adulterants. Prescription diamorphine is used therapeutically in many parts of the world as a pain treatment and for the treatment of opioid dependence.

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[35] Schifano, F. (2014). Misuse and abuse of pregabalin and gabapentin: cause for concern?. *CNS drugs*, 28(6): 491-496.

[36] ABS (2018). *Drug induced deaths in Australia: A changing story*. Australian Bureau of Statistics: http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/3303.0~2016~Main%20Features~Drug%20Induced%20Deaths%20in%20Australia~6.

[37] Montebello, M. E. and Brett, J. (2015). Misuse and associated harms of quetiapine and other atypical antipsychotics. In *Non-medical and illicit use of psychoactive drugs* (pp. 125-139). Springer, Cham.

[38] PBS (2017) Expenditure and prescriptions twelve months to 30 June 2017: http://www.pbs.gov.au/info/statistics/expenditure-prescriptions-twelve-months-to-30-june-2017. http://www.pbs.gov.au/info/statistics/expenditure-prescriptions-twelve-months-to-30-june-2017.

[39] ABS (2018). *Drug induced deaths in Australia: A changing story*. Australian Bureau of Statistics: http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/3303.0~2016~Main%20Features~Drug%20Induced%20Deaths%20in%20Australia~6.

[40] Aitken, C., Lloyd, B. and Dietze, P. (2017). Victorian drug trends 2016. Findings from the Illicit Drug Reporting System (IDRS). *Australian Drug Trends Series* No.166. Sydney, National Drug and Alcohol Research Centre, UNSW, Australia.

Methadone is a synthetic opioid not included in the pharmaceutical opioid category as it is captured separately in the data. It is primarily used as a treatment for opioid addiction as part of medically-assisted treatment for opioid dependence (MATOD), though it is also used in the treatment of chronic pain. While taking regular methadone in the context of MATOD greatly reduces a person's risk of overdose (by around half), methadone (like all opioids) can be a risk factor for overdose if other central nervous system depressants such as opioids, benzodiazepines, or alcohol are taken concurrently, or too high a dose is used on initiation of treatment, or if it is used intravenously. This risk is greatest for people who are not used to methadone, including those just starting in MATOD.

Opioids refers to substances that act on the body's opioid receptors. Opioids depress the central nervous system (including the respiratory system) making overdoses involving opioids particularly dangerous. Some opioids, such as morphine, are derived from the opium poppy, and are termed opiates, whereas others (such as oxycodone and fentanyl) are synthetic or semi-synthetic. Some synthetic opioids such as fentanyl and fentanyl analogues are highly potent.

Other pharmaceuticals is a broad group that includes anti-convulsants, anti-depressants, anti-psychotics, sedatives and hypnotics, and anaesthetics, but excludes opioid analgesics and benzodiazepines.

Other sedatives refer to a class of drugs with sedating and anaesthetic effect; ketamine is included in this group, acknowledging that it may be used as a hallucinogen in a recreational context.

Pharmaceutical means pharmaceutical drugs, prepared for pharmaceutical purposes, regardless of whether they were acquired through prescription, over the counter purchase, diversion, or through other illegal means.

Pharmaceutical opioids refers to opioids of a pharmaceutical origin including oxycodone, morphine, codeine, fentanyl, pethidine, tramadol, tapentadol, buprenorphine and hydromorphone. Pharmaceutical opioids can be taken medically (for the purpose they were prescribed), or extra-medically (for any purpose other than what they were prescribed for). Methadone is excluded from this category for these analyses.

The ABS groups some opioids together into single categories: oxycodone, morphine and codeine form one category, and fentanyl, pethidine and tramadol form another. This report uses ABS data and is therefore unable to provide further information relating to individual drugs within these categories.

Specified anti-convulsants and sedatives are a group of a drugs which, depending on dose, may exhibit sedative or hypnotic effects; zopiclone, zolpidem, and valproic acid are included in this group. In the data provided by the ABS, these are grouped separately from benzodiazepines, acknowledging that in some data sources, these are aggregated.

Stimulants are a class of drugs that are primarily taken for recreational or non-medical purposes, though pharmaceutical amphetamines are also used in medical treatments. Illicit amphetamines are commonly available in powder (known as 'speed'), tablets, and increasingly as crystal methamphetamine[41] ('crystal meth' or 'ice'), a highly potent form. In this report, the recreational drug MDMA or 'ecstasy' is classed as a stimulant.

Succinimides and oxazolidinediones refers to a group of drugs that have anti-convulsant or sedating-hypnotic effects; gamma hydroxybutyrate (GHB) is a psychoactive-sedative drug included in this group.

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[41] Methamphetamine is also known as 'methylamphetamine'

10.3.2. Poly-drug use

It is important to note that most drug-induced deaths are caused by a combination of drugs and are not the result of a single drug. A 2018 report by the Australian Bureau of Statistics indicates that multiple drugs were detected in over half (59%) of unintentional drug-induced deaths in 2016.[42]

For example, benzodiazepines have been recorded as the second most common drug group associated with drug-induced deaths, but they are rarely the sole cause of death. Most benzodiazepines determined to have contributed to a drug-induced death were used concurrently with other drugs.

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

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

10.4. Factors of interest

Factors of interest for this report were:

- **Drug type:** definitions as previously described.

- **Sex:** refers to biological characteristics, as distinct from gender.

- **Age**: this refers to age at death; where the age of the deceased was not stated, these deaths are still included in the overall totals.

- **Indigenous status (Aboriginality):** this includes persons who identified as Aboriginal, Torres Strait Islander or both, with non-Aboriginal meaning people who did not identify as Aboriginal or Torres Strait Islander or for whom Indigenous status was not stated. People with an identified Indigenous status are referred to as Aboriginal in this report. Additionally, data on Indigenous status are only based on New South Wales, Queensland, South Australia, Western Australia, and the Northern Territory, as these are the only jurisdictions that have a sufficient level of Indigenous identification to support this analysis.

- **Socio-economic status (SES):** socio-economic status is described on the basis of Socio-Economic Indexes for Areas (SEIFA) using the Index of Relative Socio-Economic Advantage and Disadvantage (IRSAD),[43] and the deciles (ten equal groups) are based on the ranking of an area within Australia (not the ranking within its state/territory). The scores are based on the area in which the person was usually resident, not on the 'social class' of the individual; a low score indicates an area with relatively greater disadvantage (e.g. many households with low incomes or in unskilled occupations) and a general lack of advantage (e.g. few households with high incomes). Limitations to this approach exist; for example, Richmond in Victoria is in decile 9 of SEIFA-IRSAD in Australia, and is therefore among the most advantaged areas, but also has a

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[42] ABS (2018). *Drug induced deaths in Australia: A changing story*. Australian Bureau of Statistics: http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/3303.0~2016~Main%20Features~Drug%20Induced%20Deaths%20in%20Australia~6.

[43] For a description of SEIFA and IRSAD, see ABS (2018). *Census of population and housing: Socio-economic indexes for areas (SEIFA), Australia, 2016*. Cat. No. 2033.0.55.001. Australian Bureau of Statistics: https://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/2033.0.55.001~2016~Main%20Features~IRSAD~20.

high density of low-income housing and has been the site of many drug-induced deaths involving heroin, due to a strong localised drug market.

Further, data are described spatially on the basis of:

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

- **Regionality:** greater capital city or regional area;[44] the Australian Capital Territory cannot be differentiated in this way.

- **Region of birth:** the world region in which the person was born.[45]

- **Remoteness area:** a geographical classification that defines locations in terms of their physical distance by road from the nearest urban centre. This classification is designed to be a measure of a location's relative access to services.[46]

- **Primary Health Network:** Primary Health Networks (PHNs) are healthcare bodies coordinating primary health and other services for geographic catchment areas in Australia. There are 31 PHNs in Australia.

- **Local areas**: Statistical Area 3 (SA3)[47] is a means of regional grouping used by the ABS. These areas typically have populations between 30,000 and 130,000 persons. SA3s are often the functional areas of regional towns and cities with a population in excess of 20,000 or clusters of related suburbs around urban commercial and transport hubs within the major urban areas.

10.5. Data presentation

When data are presented as a rate per 100,000 population, this is an age-standardised death rate,[48] based on the mid-year population. These data were either provided by the ABS or were calculated using estimated resident population data from the ABS.[49] Some rates are unreliable when there are small numbers of deaths over the reference period. Rates calculated when there were fewer than 19 deaths should be interpreted with caution, as they can show greater volatility due to the small numbers.[50]

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[44] ABS definitions and boundaries of greater capital city statistical areas (GCCSAs) can be found at: https://www.abs.gov.au/geography.

[45] Region of birth is based on the ABS (2016) S*tandard Australian Classification of Countries*: https://www.abs.gov.au/statistics/classifications/standard-australian-classification-countries-sacc/latest-release

[46] Remoteness areas are based on the ABS (2018) *Australian Statistical Geography Standard (ASGS): Volume 5 – Remoteness structure, July 2016*: https://www.abs.gov.au/ausstats/abs@.nsf/mf/1270.0.55.005.

[47] For a description of SA3, see ABS (2016). *Australian Statistical Geography Standard (ASGS): Volume 1 – Main structure and greater capital city statistical areas, July 2016*: https://www.abs.gov.au/ausstats/abs@.nsf/mf/1270.0.55.001

[48] Age-standardised death rates enable the comparison of death rates over time and between populations of different age-structures. They are particularly relevant when comparing with Aboriginal populations due to their younger age profile than the general Australian population.

[49] National Australian estimated resident population data for each year are available from ABS (2021) *National, state and territory population*: https://www.abs.gov.au/statistics/people/population/national-state-and-territory-population/latest-release#data-download. Data on estimated resident population by regionality are available from ABS (2021) *Regional population: https://www.abs.gov.au/statistics/people/population/regional-population/latest-release.*

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

To minimise the effects of localised "spikes" or outliers, in some instances this report uses comparison periods. These five-year periods are 2005-2009 (the reference period) and 2015-2019 (the recent period). Ratios are then used to show changes in the number of deaths relative to the reference period. They are calculated by dividing the number of deaths in the more recent period by the number of deaths in the reference period. It is important to note that this calculation of ratio is made on unrounded data, therefore, the ratio cannot be calculated exactly from the rounded (to 1 decimal place) rates. A ratio of 2.0 means there were twice as many deaths during 2015-2019 as there were during 2005-2009; a ratio of 3.0 means there were three times as many deaths, and so on. A ratio of 0.5 means there were half as many (50 per cent fewer) deaths in the recent period as in the reference period.

In some instances, where the data are being divided and analysed in small groups, an aggregated group of data is used, rather than analysing the data year by year. For example, data on individual drugs for specific sex and age groups are analysed using aggregated data from 2015-2019. Otherwise, numbers may be too small for meaningful analysis.

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

10.6. Data limitations

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

Heroin and morphine: Drug-induced deaths involving heroin may be under-counted, or misattributed to morphine, due to challenges in interpreting toxicity data and the rapid conversion of heroin to morphine in the body after administration. [51]

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

11. Appendix 2 – data cubes for figures

11.1. Data cubes for Chapter 4

Data for Figure 2. Number of drug-induced deaths in Australia, compared with road-related deaths, 2001-2019

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
All drug-induced deaths	1,313	1,231	1,211	1,231	1,278	1,262	1,480	1,648	1,785	1,756	1,775	1,762	1,748	2,068	2,178	2,244	2,397	2,282	2,227
Unintentional drug-induced deaths	981	903	901	968	983	952	1,041	1,171	1,281	1,325	1,319	1,237	1,276	1,513	1,612	1,744	1,819	1,720	1,644
Road traffic crashes	1,802	1,745	1,639	1,530	1,508	1,635	1,561	1,491	1,529	1,468	1,360	1,355	1,282	1,280	1,289	1,345	1,293	1,271	1,277
Car crashes	1,047	1,032	997	835	881	894	858	829	853	840	793	788	726	718	762	771	756	712	704

Note: Data for 2018 and 2019 are preliminary, and likely to rise.

Data for Figure 3. Number of drug-induced deaths in Australia, by drug type, 2001-2019

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Opioids	506	483	456	461	498	442	610	745	856	871	888	886	883	1,101	1,167	1,267	1,389	1,340	1,133
Benzodiazepines	252	264	225	209	249	249	371	406	519	557	540	618	580	710	706	805	1,052	1,089	821
Anti-depressants	194	249	154	190	200	270	282	314	374	336	333	386	376	472	502	521	706	713	573
Stimulants	60	63	36	61	79	90	99	112	103	110	115	174	175	285	352	500	579	594	551
Alcohol	206	215	164	175	178	182	265	307	368	346	352	345	318	398	401	371	467	520	425
Anti-psychotics	9	11	5	12	20	52	53	71	71	106	90	41	31	52	189	305	386	385	301
Cannabinoids	32	29	12	16	24	38	46	58	68	74	92	93	77	152	212	268	405	443	300
Anti-convulsants	2	4	2	2	2	4	6	1	3	1	0	1	3	4	24	80	152	229	204
Cocaine	30	15	10	15	17	16	19	24	30	17	16	26	22	17	48	37	59	83	94

Note: Data for 2018 and 2019 are preliminary, and likely to rise.

Data for Figure 4. Number of drug-induced deaths in 2019 by drug type: all deaths and unintentional deaths

	Unintentional drug-induced deaths	All drug-induced deaths
Pharmaceutical opioids	429	627
Oxycodone, morphine, codeine	313	468
Fentanyl, pethidine, tramadol	167	233
Methadone	170	192
Heroin	422	475
Benzodiazepines	582	821
Anti-depressants	340	573
Anti-psychotics	197	301
Anti-convulsants	154	204
Specified anti-convulsants and sedatives	53	88
Other sedatives	9	16
Alcohol	317	425
Cannabinoids	256	300
Stimulants	470	551
Cocaine	85	94
Succinimides and oxazolidinediones	17	19

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

Data for Figure 5. Number of unintentional drug-induced deaths and drug-induced suicides compared with all (total) drug-induced deaths, 2001-2019

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
All drug-induced deaths	1,231	1,211	1,231	1,278	1,262	1,480	1,648	1,785	1,756	1,775	1,762	1,748	2,068	2,178	2,244	2,397	2,282	2,227	2,227
All drug-induced deaths (projected	1,231	1,211	1,231	1,278	1,262	1,480	1,648	1,785	1,756	1,775	1,762	1,748	2,068	2,178	2,244	2,397	2,405	2,343	2,343
Unintentional drug-induced deaths	903	901	968	983	952	1,041	1,171	1,281	1,325	1,319	1,237	1,276	1,513	1,612	1,744	1,819	1,720	1,644	1,644
Unintentional drug-induced deaths (projected)	903	901	968	983	952	1,041	1,171	1,281	1,325	1,319	1,237	1,276	1,513	1,612	1,744	1,819	1,816	1,756	1,756
Drug-induced suicides	287	281	235	248	230	298	295	342	304	333	386	376	451	473	439	502	462	456	456

Note: Data for 2018 and 2019 are preliminary, and likely to rise. Data for projecting drug-induced suicides were not available.

11.2. Data cubes for Chapter 5

Data for Figure 6. Drug-induced suicides by regionality, 2001-2019, rate per 100,000 population

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Rest of states/territories	1.5	1.5	1.4	1.4	1.4	1.0	1.3	1.3	1.3	1.1	1.3	1.7	1.6	1.9	2.1	2.0	2.2	2.0	1.8
Greater capital cities	1.5	1.5	1.5	1.1	1.1	1.2	1.4	1.5	1.6	1.5	1.5	1.6	1.5	1.8	1.8	1.6	1.8	1.6	1.7

Note: Data for 2018 and 2019 are preliminary, and likely to rise.

Data for Figure 7. Number of drug-induced suicides by drug type, 2001-2019

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Benzodiazepines	80	88	66	43	67	62	112	105	133	130	133	173	163	175	184	195	253	249	190
Anti-depressants	80	107	74	60	71	97	102	100	137	118	101	139	137	153	177	172	231	222	188
Opioids	74	98	72	54	68	58	124	105	125	118	126	152	146	183	199	199	247	223	183
Alcohol	40	48	35	24	34	33	45	59	68	39	51	70	65	66	84	70	90	120	88
Anti-psychotics	3	3	0	6	9	14	15	30	22	43	28	14	11	20	64	87	112	102	87
Stimulants	5	5	1	0	6	7	3	9	5	8	5	17	13	25	28	35	39	45	52
Anti-convulsants	0	1	0	1	2	1	2	0	0	1	0	1	2	0	8	13	35	49	37
Cannabinoids	5	2	2	1	2	1	6	5	7	5	5	5	6	12	27	20	37	28	33
Cocaine	2	0	0	0	2	2	0	3	1	1	1	5	0	1	7	1	2	1	7

Note: Data for 2018 and 2019 are preliminary, and likely to rise.

Data for Figure 8. Number of drug-induced suicides by age group, 2001-2019

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
0-19	4	2	7	3	5	3	3	0	5	3	4	6	5	6	8	7	8	7	3
20-29	43	34	33	31	22	20	23	22	34	31	28	33	35	38	44	32	37	35	44
30-39	73	72	66	51	48	35	55	72	53	56	50	60	56	74	69	60	71	60	73
40-49	62	76	83	66	69	58	65	79	71	63	87	89	93	98	112	85	102	94	87
50-59	54	48	39	41	37	56	76	61	89	72	78	87	63	99	102	115	108	101	96
60-69	24	26	24	15	29	26	43	29	55	39	42	55	59	70	69	48	86	84	62
70 years and above	29	29	29	28	38	32	33	32	35	40	44	56	65	66	69	92	90	81	91

Note: Data for 2018 and 2019 are preliminary, and likely to rise.

Data for Figure 9. Number of drug-induced suicides by age group, 2001-2019

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Males	155	156	148	132	129	101	129	162	174	146	169	207	170	234	254	223	245	228	227
Females	134	131	133	103	119	129	169	133	168	158	164	179	206	217	219	216	257	234	229

Note: Data for 2018 and 2019 are preliminary, and likely to rise.

11.3. Data cubes for Chapter 6

Data for Figure 10. Unintentional drug-induced deaths by state, 2001-2019, rate per 100,000 population

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
WA	6.1	4.3	3.9	2.7	4.6	4.7	5.3	6.2	6.6	6.7	6.6	6.4	6.2	7.5	8.2	8.7	8.6	9.1	8.7
NSW	5.8	5.2	4.9	5.0	4.9	5.4	5.0	5.1	5.5	5.6	5.8	5.6	5.9	7.0	7.4	7.3	7.6	7.4	6.8
VIC	4.2	4.4	5.2	5.5	4.8	4.4	4.4	6.3	5.6	5.5	5.6	3.8	5.0	5.9	6.3	6.9	7.8	6.6	6.8
QLD	5.2	3.7	3.3	4.4	3.9	3.5	4.4	4.4	5.6	6.9	6.4	6.3	5.7	6.1	6.8	6.9	6.4	6.2	5.6
Tas, NT, ACT	5.2	7.3	5.3	4.7	7.4	5.6	7.3	5.8	6.5	6.3	5.6	5.4	5.5	5.9	5.6	7.3	6.6	6.7	5.6
SA	3.4	3.7	4.4	5.7	5.7	3.9	5.7	6.1	7.2	5.8	4.3	6.1	3.9	4.9	4.3	6.5	7.2	5.4	3.3

Note: Data for 2018 and 2019 are preliminary, and likely to rise. Numbers of deaths cannot be reliably converted to rates per 100,000 in Tasmania, Northern Territory, and Australian Capital Territory due to low numbers and are therefore presented as an aggregate.

Data for Figure 11. Unintentional drug-induced deaths by regionality, 2001-2019, rate per 100,000 population

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Remainder of states and territories	5.2	4.6	4.3	4.5	4.9	4.8	4.7	5.3	5.9	5.9	6.3	6.4	5.9	7.7	8	8.2	7.9	7.6	7.0
Greater capital cities	5	4.6	4.7	5	4.8	4.5	5.1	5.6	5.8	6	5.6	5	5.3	5.8	6.2	6.7	7.1	6.5	6.1

Note: Data for 2018 and 2019 are preliminary, and likely to rise.

Data for Figure 12. Number of unintentional drug-induced deaths by drug type, 2001-2019

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Opioids	413	375	370	387	407	338	424	552	643	684	684	644	670	853	905	1,028	1,090	1,057	882
Benzodiazepines	165	171	148	161	170	162	217	256	324	383	359	382	371	485	474	569	758	787	582
Stimulants	53	57	34	60	69	78	84	87	90	93	105	139	156	250	313	454	518	522	470
Anti-depressants	103	128	73	124	117	143	141	165	191	186	187	196	213	288	288	324	442	453	340
Alcohol	162	162	123	145	136	134	192	216	273	285	278	252	232	309	296	287	364	382	317
Cannabinoids	27	26	10	15	21	34	34	48	57	66	79	79	67	131	170	238	353	398	256
Anti-psychotics	5	5	1	6	11	31	26	30	36	50	52	21	15	28	109	201	259	259	197
Anti-convulsants	4	0	1	0	2	4	2	2	2	0	0	0	0	1	11	62	112	166	154
Cocaine	28	15	10	15	15	13	16	16	24	16	13	19	22	15	41	36	55	76	85

Note: Data for 2018 and 2019 are preliminary, and likely to rise.

Data for Figure 13. Unintentional drug-induced deaths by drug type, 2001-2019, proportion of unintentional deaths (%)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Opioids	42.1	41.5	41.1	40.0	41.4	35.5	40.7	47.1	50.2	51.6	51.9	52.1	52.5	56.4	56.1	58.9	59.9	61.5	53.6
Benzodiazepines	16.8	18.9	16.4	16.6	17.3	17.0	20.8	21.9	25.3	28.9	27.2	30.9	29.1	32.1	29.4	32.6	41.7	45.8	35.4
Stimulants	5.4	6.3	3.8	6.2	7.0	8.2	8.1	7.4	7.0	7.0	8.0	11.2	12.2	16.5	19.4	26.0	28.5	30.3	28.6
Anti-depressants	10.5	14.2	8.1	12.8	11.9	15.0	13.5	14.1	14.9	14.0	14.2	15.8	16.7	19.0	17.9	18.6	24.3	26.3	20.7
Alcohol	16.5	17.9	13.7	15.0	13.8	14.1	18.4	18.4	21.3	21.5	21.1	20.4	18.2	20.4	18.4	16.5	20.0	22.2	19.3
Cannabinoids	2.8	2.9	1.1	1.5	2.1	3.6	3.3	4.1	4.4	5.0	6.0	6.4	5.3	8.7	10.5	13.6	19.4	23.1	15.6
Anti-psychotics	0.5	0.6	0.1	0.6	1.1	3.3	2.5	2.6	2.8	3.8	3.9	1.7	1.2	1.9	6.8	11.5	14.2	15.1	12.0
Anti-convulsants	0.4	0.0	0.1	0.0	0.2	0.4	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.1	0.7	3.6	6.2	9.7	9.4
Cocaine	2.9	1.7	1.1	1.5	1.5	1.4	1.5	1.4	1.9	1.2	1.0	1.5	1.7	1.0	2.5	2.1	3.0	4.4	5.2

Note: Data for 2018 and 2019 are preliminary, and likely to rise.

Data for Figure 14. Number of unintentional drug-induced deaths by age group, 2001-2019

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
0-19	36	16	18	20	15	15	11	16	14	21	14	16	11	13	12	13	16	15	22
20-29	212	172	174	160	160	132	146	172	159	155	166	128	139	131	129	157	160	160	160
30-39	242	217	219	227	213	191	240	279	308	318	335	306	303	342	393	394	413	390	356
40-49	192	188	182	221	239	212	213	238	287	313	304	316	330	404	452	473	519	473	430
50-59	106	131	120	126	158	155	176	197	246	255	236	229	243	320	319	353	382	373	335
60-69	91	86	78	86	96	93	111	111	136	116	135	122	111	165	144	209	173	179	188
70 years and above	102	93	110	128	102	154	144	157	131	147	129	120	139	137	163	145	156	130	153

Note: Data for 2018 and 2019 are preliminary, and likely to rise.

Data for Figure 15. Unintentional drug-induced deaths, by drug type and median age

	2000-2004	2005-2009	2010-2014	2015-2019
Opioids	33.1	37.7	40.7	43.1
– Pharmaceutical opioids	35.0	39.9	42.2	43.4
– Heroin	30.7	33.8	37.6	41.8
Benzodiazepines	34.8	38.7	41.2	43.0
Stimulants	30.5	33.6	37.5	40.0
Anti-depressants	41.4	45.2	43.9	45.1
Alcohol	39.1	42.8	43.6	45.6
Cannabinoids	28.7	35.4	38.5	41.9
Cocaine	32.5	35.7	35.5	34.7

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

Data for Figure 16. Number of unintentional drug-induced deaths by sex, 2001-2019

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Males	701	635	640	685	683	676	707	834	910	927	937	813	877	1,040	1,138	1,237	1,290	1,215	1,166
Females	280	268	261	283	300	276	334	337	371	398	382	424	399	473	474	507	529	505	478

Note: Data for 2018 and 2019 are preliminary, and likely to rise.

Data for Figure 17. Unintentional drug-induced deaths by Indigenous status, 2001-2019, rate per 100,000 population (NSW, Qld, SA, WA, NT)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Aboriginal	19.3	13.7	13.1	12.3	11.2	10.4	13.6	12.9	9.5	15.4	15.3	14.8	14.7	15.8	18.5	20.0	19.9	18.6	20.0
Non-Aboriginal	4.9	4.1	4.0	4.3	4.4	4.2	4.6	4.8	5.6	5.7	5.5	5.5	5.3	6.1	6.6	6.6	6.8	6.5	5.9

Note: Data for 2018 and 2019 are preliminary, and likely to rise.

Data for Figure 18. Unintentional drug-induced deaths by drug type and Indigenous status, 2015-2019, rate per 100,000 population (NSW, Qld, SA, WA, NT)

	Aboriginal	Non-Aboriginal
All opioids	9.1	3.8
Stimulants	6.5	1.7
Pharmaceutical opioids	5.2	2.2
Benzodiazepines	4.8	2.3
Cannabinoids	3.6	1.0
Alcohol	3.0	1.2
Heroin	2.9	1.3
Anti-depressants	2.7	1.4
Anti-psychotics	1.8	0.7
Anti-convulsants	0.8	0.4

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

Data for Figure 19. Number of unintentional drug-induced deaths by drug type and Indigenous status, 2015-2019 (NSW, Qld, SA, WA, NT)

	Aboriginal	Non-Aboriginal
Opioids	260	3,067
Stimulants	186	1,327
Benzodiazepines	134	1,825
Cannabinoids	103	761
Alcohol	81	1,004
Anti-depressants	73	1,131
Anti-psychotics	49	581
Anti-convulsants	23	301
Cocaine	7	201

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

Data for Figure 20. Age distribution (%) of unintentional drug-induced deaths by Indigenous status, 2015-2019 (NSW, Qld, SA, WA, NT)

	Aboriginal	Non-Aboriginal
0-19	1%	1%
20-29	13%	9%
30-39	28%	22%
40-49	30%	27%
50-59	19%	21%
60-69	7%	11%
70 years and above	3%	10%

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

Data for Figure 21. Number of unintentional drug-induced deaths by socio-economic status of area of usual residence, 2015-2019

	Decile 1	Decile 2	Decile 3	Decile 4	Decile 5	Decile 6	Decile 7	Decile 8	Decile 9	Decile 10
Number of deaths	1,762	1,172	958	800	780	667	681	601	537	460

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

Data for Figure 22. Unintentional drug-induced deaths by drug type and socio-economic status of area, percentage distribution across quintiles, 2015-2019

	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5
Alcohol	29.9%	19.6%	18.2%	16.1%	14.3%
Anti-convulsants	33.2%	22.3%	17.0%	16.5%	9.4%
Anti-depressants	33.8%	22.0%	17.3%	13.9%	12.0%
Anti-psychotics	35.8%	21.4%	16.2%	14.0%	11.4%
Benzodiazepines	32.8%	20.2%	17.9%	14.9%	12.7%
Fentanyl, pethidine, tramadol	37.4%	22.0%	16.5%	13.8%	8.5%
Methadone	40.3%	20.1%	16.8%	12.4%	8.6%
Oxycodone, morphine, codeine	33.1%	20.6%	18.5%	15.0%	11.8%
Heroin	28.9%	19.1%	18.6%	17.3%	14.2%
Cannabinoids	38.4%	21.5%	15.2%	13.9%	8.8%
Stimulants	34.3%	20.9%	17.3%	14.8%	10.6%
Cocaine	17.0%	13.1%	18.5%	18.9%	32.0%

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

Data for Figure 23. Number of unintentional drug-induced deaths, by number of drug types detected, 2007-2019

	Four or more drug types	Single drug type	Three drug types	Two drug types	Alcohol alone
2007	86	362	95	196	60
2008	99	404	125	233	64
2009	158	465	164	215	81
2010	147	436	170	267	77
2011	154	447	142	271	68
2012	149	399	152	277	66
2013	163	483	156	227	67
2014	261	532	203	248	93
2015	303	500	223	251	83
2016	421	505	246	245	89
2017	617	372	278	222	87
2018	698	302	246	213	78
2019	474	431	239	198	89

Note: Data for 2018 and 2019 are preliminary, and likely to rise. Data are only available from 2007.

Data for Figure 24. Number of unintentional drug-induced deaths, single drug type and multiple drug types detected, 2015-2019

	Single drug type	Two drug types	Three or more drug types
Unintentional drug-induced deaths involving multiple drug types	2,109	1,129	3,746

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

Data for Figure 25. Number of unintentional drug-induced deaths, by specific number of drug types detected, 2015-2019

	Single drug type	Two drug types	Three drug types	Four drug types	Five drug types	Six drug types	7 or more drug types
Unintentional drug-induced deaths involving multiple drug types	2,109	1,129	1,231	1,144	713	437	221

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

Data for Figure 26. Number of unintentional drug-induced deaths with multiple drug types detected, by age and sex, 2015-2019

	0-19	20-29	30-39	40-49	50-59	60-69	70 and over
Males	35	418	1,032	1,045	609	176	26
Females	9	120	336	509	382	138	40

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

Data for Figure 27. Unintentional drug-induced deaths that involve multiple drug types, as a proportion of all unintentional drug-induced deaths, by age and sex, 2015-2019

	Males	Females
0-19	58.3%	47.4%
20-29	71.2%	67.0%
30-39	69.9%	71.6%
40-49	63.6%	72.2%
50-59	51.6%	65.6%
60-69	29.5%	46.6%
70 and over	5.2%	16.4%

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

Data for Figure 28. Proportion of unintentional drug-induced deaths with multiple drug types detected, by drug type involved, 2015-2019

	Poly-drug use deaths for specified drug type, as a proportion of all poly-drug use deaths (%)
All opioids	83.2
– Pharmaceutical opioids	49.6
– Heroin	30.7
– Methadone	19.3
Benzodiazepines	64.3
Anti-depressants	36.5
Stimulants	32.1
Alcohol	25.0
Cannabinoids	20.1
Anti-psychotics	20.1
Anti-convulsants	10.3
Cocaine	4.8

Note: Data are aggregated over the five-year period

11.4. Data cubes for Chapter 7

Data for Figure 29. Number of unintentional drug-induced deaths by opioid type, 2001-2019

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Heroin	101	90	142	133	122	67	109	157	176	198	190	149	195	218	280	380	422	448	422
Oxycodone, morphine, codeine	168	169	135	158	169	170	191	267	295	309	272	283	269	419	416	449	434	394	313
Methadone	95	90	61	77	95	85	99	117	126	140	155	156	155	165	190	226	232	243	170
Fentanyl, pethidine, tramadol	14	7	14	6	16	12	9	16	18	38	57	84	126	158	193	207	236	229	167

Note: Data for 2018 and 2019 are preliminary, and likely to rise.

Data for Figure 30. Unintentional drug-induced deaths by state for each opioid type, 2001-2019, rate per 100,000 population

Heroin

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
WA	0.1	0.1	0.2	0.3	0.4	0.2	0.4	0.5	1.2	1.0	1.3	1.2	1.4	1.4	1.5	2.3	2.1	2.9	2.7
VIC	0.8	1.2	1.8	1.7	1.2	0.6	1.0	1.8	1.3	1.5	1.5	0.8	1.4	1.6	2.0	2.3	3.0	2.6	2.5
NSW	0.6	0.3	0.5	0.5	0.4	0.3	0.4	0.3	0.6	0.5	0.5	0.5	0.6	0.6	0.9	1.4	1.4	1.4	1.5
QLD	0.2	0.1	0.2	0.3	0.4	0.1	0.3	0.4	0.3	0.7	0.7	0.5	0.5	0.6	0.8	0.9	0.9	1.0	0.8
Tas, NT, ACT	0.5	0.3	0.7	0.0	0.1	0.2	0.1	0.1	0.6	0.3	0.1	0.1	0.7	0.9	0.7	0.1	0.1	1.5	0.7
SA	0.3	0.1	0.2	0.1	0.5	0.1	0.7	0.9	0.8	1.2	0.5	0.8	0.4	0.7	0.4	1.4	1.0	1.3	0.6

Note: Data for 2018 and 2019 are preliminary, and likely to rise.

Data for Figure 30 contniued

Oxycodone, morphine, codeine

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
WA	0.6	1.2	0.5	0.5	1.0	1.3	0.8	2.2	2.2	2.5	2.1	1.6	1.1	2.1	2.4	2.4	2.9	1.8	1.9
VIC	0.9	1.0	0.8	0.8	0.8	0.9	0.8	0.9	1.2	1.0	1.0	0.9	1.2	1.9	1.9	1.6	1.6	1.6	1.3
NSW	1.3	0.6	0.4	0.5	0.5	0.6	0.7	0.8	1.0	1.7	1.5	1.8	1.4	1.9	1.9	1.8	1.9	1.9	1.2
QLD	0.5	0.7	0.8	1.2	0.8	0.8	1.1	1.8	1.3	1.3	1.0	1.0	1.0	1.7	1.7	2.2	1.7	1.4	1.2
Tas, NT, ACT	1.9	1.3	0.8	0.5	1.3	0.6	1.5	1.3	2.1	1.4	1.4	1.5	1.0	0.9	0.8	2.1	1.1	1.3	1.2
SA	0.4	0.9	0.5	0.8	1.3	0.7	1.2	1.1	1.7	1.0	0.5	1.4	0.8	1.1	0.8	1.1	1.5	1.2	0.1

Methadone

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
WA	0.2	0.3	0.4	0.4	0.4	0.4	0.5	0.6	0.5	0.7	0.9	0.7	0.9	0.9	0.7	1.0	1.1	0.9	1.0
VIC	0.8	0.7	0.4	0.5	0.6	0.6	0.4	0.5	0.7	0.6	0.7	0.7	0.8	0.8	1.0	1.1	1.1	1.4	0.8
NSW	0.4	0.3	0.0	0.3	0.2	0.4	0.6	0.6	0.4	0.9	0.8	1.2	0.5	0.8	1.1	0.8	0.8	0.8	0.5
QLD	0.2	0.3	0.2	0.2	0.3	0.0	0.2	0.3	0.3	0.5	0.5	0.4	0.4	0.4	0.6	0.8	0.6	0.7	0.4
Tas, NT, ACT	0.2	0.8	0.6	0.6	1.2	0.9	1.1	0.7	0.6	0.8	0.5	0.6	0.4	0.4	0.5	0.7	0.8	0.8	0.2
SA	0.6	0.5	0.3	0.1	0.6	0.4	0.6	1.0	1.1	0.7	0.7	0.7	0.7	0.5	0.4	0.8	1.0	0.7	0.1

Note: Data for 2018 and 2019 are preliminary, and likely to rise.

Data for Figure30. contniued

Fentanyl, pethidine, tramadol

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
WA	0.1	0.2	0.1	0.1	0.3	0.0	0.0	0.1	0.0	0.3	0.3	0.6	0.9	0.8	0.9	1.1	1.1	1.9	1.4
VIC	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.4	0.5	0.6	1.1	1.3	1.1	1.5	1.0	0.7
NSW	0.0	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.1	0.1	0.2	0.3	0.5	0.3	0.6	0.6	0.6	0.9	0.6
QLD	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.2	0.2	0.5	0.8	0.7	0.9	0.8	0.7	0.6
Tas, NT, ACT	0.4	0.0	0.3	0.4	0.0	0.3	0.0	0.4	0.3	0.1	0.1	0.1	0.3	0.3	0.5	0.5	0.7	0.8	0.4
SA	0.1	0.1	0.2	0.2	0.1	0.2	0.0	0.3	0.2	0.2	0.2	0.6	0.7	0.4	0.5	1.0	1.1	0.5	0.2

Note: Data for 2018 and 2019 are preliminary, and likely to rise.

Data for Figure 31. Number of unintentional drug-induced deaths by opioid type, 2001-2019, within (A) and outside of (B) capital cities

Capital cities total

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Heroin	73	76	119	116	94	58	93	132	143	165	156	116	171	156	228	309	322	342	317
Oxycodone, morphine, codeine	111	117	95	113	101	110	133	180	203	187	170	164	161	259	262	280	283	236	202
Methadone	68	62	50	53	65	61	76	81	89	107	104	110	120	115	122	143	151	155	113
Fentanyl, pethidine, tramadol	9	5	10	5	13	10	8	8	9	21	23	38	67	59	89	116	125	130	102

Remainders total

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Oxycodone, morphine, codeine	57	52	40	45	68	60	58	87	92	122	102	119	108	160	154	169	146	151	105
Heroin	28	14	23	17	28	9	16	25	33	33	34	33	24	62	52	71	98	89	94
Fentanyl, pethidine, tramadol	5	2	4	4	4	4	1	8	9	17	34	46	59	99	104	91	105	94	63
Methadone	27	28	11	24	30	24	23	36	37	33	51	46	35	50	68	83	78	82	53

Note: Data for 2018 and 2019 are preliminary, and likely to rise.

Data for Figure 32. Number of unintentional drug-induced deaths, by opioid type and age group, 2015-2019

	0-19	20-29	30-39	40-49	50-59	60-69	70 and over
Pharmaceutical opioids	30	314	724	843	561	198	61
Heroin	10	211	634	640	357	93	7

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

Data for Figure 33. Number of unintentional drug-induced deaths by opioid type and sex, 2015-2019

	Pharmaceutical opioids	Heroin	Methadone
Females	940	392	356
Males	1,791	1,560	705

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

Data for Figure 34. Number of unintentional drug-induced deaths involving opioids by sole-drug and poly-drug use categories, 2007-2019

	Opioids + benzodiazepines	Opioids + other pharmaceuticals	Opioids + anti-depressants	Opioids + stimulants	Opioids + anti-psychotics	Opioids + alcohol	Heroin only	Pharmaceutical opioids only
2007	160	94	82	41	17	75	56	51
2008	185	117	100	54	16	117	80	54
2009	242	118	106	52	22	140	88	73
2010	306	123	109	55	24	144	102	68
2011	261	145	125	66	31	142	100	69
2012	296	145	132	78	13	120	69	59
2013	295	165	157	84	6	113	96	84
2014	401	235	211	156	20	151	88	116
2015	405	256	204	155	70	148	104	103
2016	493	370	249	266	147	139	118	88
2017	648	520	354	278	200	198	75	50
2018	681	559	370	289	209	211	61	35
2019	477	420	260	249	148	146	95	40

Note: Data for 2018 and 2019 are preliminary, and likely to rise.

Data for Figure 35. Number of unintentional drug-induced deaths involving benzodiazepines by state and territory, 2001-2019, rate per 100,000 population,

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
VIC	0.5	0.9	1.1	1.3	1.0	0.9	1.2	1.6	1.6	1.9	2.0	1.6	1.8	2.7	2.5	3.2	3.9	3.7	3.3
WA	1.2	1.1	0.1	0.5	1.1	1.2	1.0	2.1	1.8	2.4	1.6	1.9	1.1	2.1	2.4	2.7	4.1	4.3	2.9
NSW	1.0	0.9	0.9	1.1	0.8	0.9	0.8	0.7	0.9	1.2	1.3	1.5	1.8	1.9	2.0	2.0	2.8	2.9	1.9
QLD	1.1	0.6	0.4	0.2	0.3	0.3	0.8	1.1	1.9	2.2	1.9	2.1	1.7	1.9	1.9	2.0	2.7	2.8	1.9
Tas, NT, ACT	1.1	1.6	1.1	0.8	1.5	1.0	1.8	1.2	2.0	2.0	1.4	1.4	1.5	1.3	1.1	2.0	1.7	2.7	1.8
SA	0.3	0.4	0.7	0.1	1.0	0.6	1.6	1.1	1.6	1.0	0.9	1.3	1.0	1.3	0.5	1.5	1.8	1.8	0.7

Note: Data for 2018 and 2019 are preliminary, and likely to rise.

Data for Figure 36. Unintentional drug-induced deaths involving benzodiazepines by regionality, 2001-2019, rate per 100,000 population.

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Capital cities	0.9	0.9	0.8	1.0	0.8	0.9	1.2	1.3	1.6	1.9	1.6	1.6	1.7	2.0	2.0	2.6	3.1	3.1	2.4
Outside of capital cities	0.9	0.9	0.6	0.5	0.9	0.7	0.7	1.1	1.2	1.6	1.6	2.1	1.6	2.4	2.3	2.2	3.3	3.4	2.2

Note: Data for 2018 and 2019 are preliminary, and likely to rise.

Data for Figure 37. Number of unintentional drug-induced deaths involving benzodiazepines by age group, 2015-2019

	0-19	20-29	30-39	40-49	50-59	60-69	70 and over
Benzodiazepines	25	348	891	1,032	637	191	46

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

Data for Figure 38. Number of unintentional drug-induced deaths involving benzodiazepines by sex, 2015-2019

	Males	Females
Benzodiazepines	2,120	1,050

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

Data for Figure 39. Unintentional drug-induced deaths involving stimulants by state and territory, 2001-2019, rate per 100,000 population

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
WA	0.6	0.5	0.3	0.5	0.3	0.4	0.6	0.8	0.6	0.4	0.6	0.7	1.3	1.9	1.8	2.9	3.0	3.7	3.2
VIC	0.2	0.2	0.1	0.3	0.5	0.4	0.4	0.5	0.5	0.4	0.5	0.4	0.7	1.1	1.6	2.1	2.5	2.3	2.0
Tas, NT, ACT	0.4	0.1	0.1	0.1	0.5	0.1	0.7	0.2	0.6	0.1	0.1	0.4	0.4	0.7	0.9	1.3	1.8	2.0	1.7
NSW	0.3	0.4	0.3	0.4	0.3	0.5	0.3	0.4	0.3	0.4	0.5	0.8	0.6	0.9	1.1	1.9	1.9	1.9	1.7
QLD	0.3	0.1	0.0	0.1	0.1	0.2	0.3	0.2	0.5	0.5	0.4	0.8	0.6	1.1	1.4	1.6	1.7	1.6	1.6
SA	0.2	0.1	0.1	0.3	0.5	0.3	0.4	0.5	0.1	0.6	0.4	0.4	0.4	0.5	0.6	1.1	1.7	1.4	0.7

Note: Data for 2018 and 2019 are preliminary, and likely to rise.

Data for Figure 40. Unintentional drug-induced deaths involving stimulants by regionality, 2001-2019, rate per 100,000 population

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Capital cities	0.1	0.1	0.1	0.1	0.4	0.4	0.2	0.3	0.4	0.3	0.5	0.7	0.6	1.2	1.6	2.1	2.2	2.1	1.9
Outside of capital cities	0.3	0.4	0.2	0.4	0.3	0.4	0.5	0.5	0.4	0.5	0.5	0.6	0.7	1.1	1.3	1.9	2.2	2.2	1.9

Note: Data for 2018 and 2019 are preliminary, and likely to rise.

Data for Figure 41. Unintentional drug-induced deaths involving stimulants by regionality, 2001-2019, rate per 100,000 population.

	0-19	20-29	30-39	40-49	50-59	60-69	70 and over
Stimulants	32	339	765	732	344	62	3

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

Data for Figure 42. Number of unintentional drug-induced deaths involving stimulants by sex, 2015-2019

	Males	Females
Stimulants	1,717	560

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

Data for Figure 43. Unintentional drug-induced deaths involving anti-depressants by state and territory, 2001-2019, rate per 100,000 population

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
WA	1.2	1.1	0.2	0.3	0.6	1.1	0.8	1.2	1.2	1.4	1.2	1.4	0.7	1.4	2.1	1.1	2.9	2.9	2.4
VIC	0.3	0.6	0.6	1.0	0.7	0.5	0.6	0.9	0.9	0.9	0.8	0.8	0.9	1.5	1.1	1.4	2.3	2.1	1.6
Tas, NT, ACT	0.6	1.7	0.4	0.3	1.2	1.0	1.5	0.7	1.5	1.0	1.0	0.5	0.9	0.9	0.7	1.3	1.1	2.0	1.5
QLD	0.5	0.6	0.1	0.3	0.2	0.4	0.4	0.4	0.7	0.8	0.9	1.2	1.1	1.7	1.6	1.9	1.8	1.7	1.2
NSW	0.6	0.5	0.5	0.7	0.6	0.8	0.5	0.7	0.5	0.6	0.8	0.6	1.0	0.8	1.0	1.2	1.3	1.5	1.1
SA	0.2	0.5	0.1	0.6	0.8	0.6	1.7	1.3	1.9	1.2	0.2	0.9	0.4	0.9	0.4	0.8	1.2	0.6	0.3

Note: Data for 2018 and 2019 are preliminary, and likely to rise.

Data for Figure 44. Unintentional drug-induced deaths involving anti-depressants by regionality, 2001-2019, rate per 100,000 population

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Capital cities	0.4	0.6	0.3	0.5	0.5	0.6	0.5	0.7	0.9	0.9	1.2	1.1	1.2	1.6	1.4	1.8	1.9	2.2	1.4
Outside of capital cities	0.6	0.7	0.4	0.7	0.6	0.7	0.7	0.8	0.9	0.8	0.7	0.8	0.8	1.1	1.2	1.2	1.8	1.7	1.3

Note: Data for 2018 and 2019 are preliminary, and likely to rise.

Data for Figure 45. Number of unintentional drug-induced deaths involving anti-depressants by age group, 2015-2019

	0-19	20-29	30-39	40-49	50-59	60-69	70 and over
Anti-depressants	13	153	444	610	423	165	39

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

Data for Figure 46. Number of unintentional drug-induced deaths involving anti-depressants by sex, 2015-2019

	Males	Females
Anti-depressants	1,075	772

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

Data for Figure 47. Unintentional drug-induced deaths involving cannabinoids by state and territory, 2001-2019, rate per 100,000 population

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
WA	0.5	0.6	0.2	0.1	0.4	0.6	0.3	0.6	0.6	0.6	1.0	0.9	0.5	1.1	0.9	1.4	1.7	2.7	1.4
VIC	0.0	0.1	0.0	0.1	0.1	0.3	0.2	0.2	0.1	0.2	0.4	0.3	0.2	0.5	1.1	1.3	2.2	1.7	1.3
Tas, NT, ACT	0.1	0.2	0.3	0.1	0.0	0.2	0.1	0.1	0.2	0.5	0.2	0.4	0.2	0.2	0.4	1.1	1.0	1.2	1.2
NSW	0.0	0.1	0.0	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.2	0.4	0.5	0.6	0.9	1.2	1.5	0.9
QLD	0.3	0.1	0.1	0.0	0.0	0.0	0.2	0.4	0.6	0.5	0.5	0.6	0.3	0.6	0.7	0.6	0.9	1.6	0.7
SA	0.3	0.0	0.3	0.2	0.0	0.1	0.1	0.2	0.0	0.1	0.0	0.2	0.0	0.2	0.1	0.4	1.2	0.5	0.5

Note: Data for 2018 and 2019 are preliminary, and likely to rise.

Data for Figure 48. Unintentional drug-induced deaths involving cannabinoids by regionality, 2001-2019, rate per 100,000 population

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Outside of capital cities	0.2	0.1	0.0	0.1	0.1	0.2	0.2	0.2	0.4	0.3	0.4	0.5	0.3	0.8	0.8	1.2	1.7	2.1	1.1
Capital cities	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.5	0.7	1.0	1.4	1.5	1.0

Note: Data for 2018 and 2019 are preliminary, and likely to rise.

Data for Figure 49. Number of unintentional drug-induced deaths involving cannabinoids by age group, 2015-2019

	0-19	20-29	30-39	40-49	50-59	60-69	70 and over
Cannabinoids	28	186	412	492	249	46	2

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

Data for Figure 50. Number of unintentional drug-induced deaths involving cannabinoids by sex, 2015-2019

	Males	Females
Cannabinoids	1,057	358

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

Data for Figure 51. Unintentional drug-induced deaths involving anti-psychotics by state, 2001-2019, rate per 100,000 population

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Tas, NT, ACT	0.1	0.0	0.0	0.0	0.2	0.3	0.6	0.3	0.3	0.5	0.4	0.0	0.4	0.1	0.1	0.9	0.5	0.8	1.2
WA	0.0	0.0	0.2	0.0	0.0	0.2	0.1	0.0	0.3	0.3	0.6	0.2	0.0	0.2	0.6	0.6	1.3	1.7	1.1
VIC	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.1	0.1	0.2	0.5	1.1	1.6	1.1	1.1
QLD	0.0	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.0	0.2	0.2	0.1	0.1	0.1	0.4	1.0	0.8	1.0	0.7
NSW	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.4	0.7	0.9	1.0	0.6
SA	0.0	0.2	0.0	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.0	0.0	0.2	0.2	0.3	0.5	0.6	0.1	0.0

Note: Data for 2018 and 2019 are preliminary, and likely to rise.

Data for Figure 52. Unintentional drug-induced deaths involving anti-psychotics by regionality, 2001-2019, rate per 100,000 population

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Outside of capital cities	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.1	0.0	0.1	0.3	0.9	1.1	1.2	0.9
Capital cities	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.1	0.2	0.3	0.2	0.1	0.1	0.1	0.5	0.8	1.1	1.0	0.8

Note: Data for 2018 and 2019 are preliminary, and likely to rise.

Data for Figure 53. Number of unintentional drug-induced deaths involving anti-psychotics by age group, 2015-2019

	0-19	20-29	30-39	40-49	50-59	60-69	70 and over
Anti-psychotics	3	86	291	370	188	72	15

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

Data for Figure 54. Number of unintentional drug-induced deaths involving anti-psychotics by sex, 2015-2019

	Males	Females
Anti-psychotics	660	365

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

Data for Figure 55. Unintentional drug-induced deaths involving anti-convulsants by state, 2012-2019, rate per 100,000 population

	2012	2013	2014	2015	2016	2017	2018	2019
WA	0.0	0.0	0.0	0.1	0.5	0.9	1.1	1.2
QLD	0.0	0.0	0.0	0.1	0.4	0.9	1.4	0.9
VIC	0.0	0.0	0.1	0.0	0.3	0.6	0.7	0.7
NSW	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.3
SA	0.0	0.0	0.0	0.0	0.4	0.2	0.4	0.2
Tas, NT, ACT	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2

Note: Data for 2018 and 2019 are preliminary, and likely to rise.

Data for Figure 56. Unintentional drug-induced deaths involving anti-convulsants by regionality, 2012-2019, rate per 100,000 population

	2012	2013	2014	2015	2016	2017	2018	2019
Outside of capital cities	0.0	0.0	0.0	0.1	0.3	0.6	0.9	0.7
Capital cities	0.0	0.0	0.0	0.0	0.3	0.4	0.6	0.6

Note: Data for 2018 and 2019 are preliminary, and likely to rise.

Data for Figure 57. Number of unintentional drug-induced deaths involving anti-convulsants by age group, 2015-2019

	0-19	20-29	30-39	40-49	50-59	60-69	70 and over
Anti-convulsants	1	52	150	166	95	34	7

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

Data for Figure 58. Number of unintentional drug-induced deaths involving anti-convulsants by sex, 2015-2019

	Males	Females
Anti-convulsants	312	193

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

11.5. Data cubes for Chapter 8

Data for Figure 59. Unintentional drug-induced deaths by regionality in New South Wales, 2001-2019, rate per 100,000 population

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Regional NSW	5.6	5.1	4.7	4.5	4.9	5.7	4.7	4.5	5.1	5.7	6.4	6.9	6.2	8.8	8.3	9.1	8.5	8.3	8.0
Greater Sydney	5.9	5.2	5.1	5.3	4.9	5.4	5.1	5.4	5.8	5.5	5.6	5.1	5.9	6.2	6.9	6.5	7.1	6.8	6.1

Note: Data for 2018 and 2019 are preliminary, and likely to rise.

Data for Figure 60. Unintentional drug-induced deaths by drug type in greater Sydney and regional NSW, 2001-2019, rate per 100,000 population

Greater Sydney

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Benzodiazepines	1.0	1.0	1.0	1.3	0.8	1.0	1.0	0.7	1.1	1.3	1.3	1.5	1.9	1.8	1.9	1.9	2.5	3.0	2.0
Stimulants	0.4	0.5	0.3	0.5	0.3	0.5	0.4	0.5	0.3	0.5	0.6	0.7	0.7	1.0	1.2	1.7	1.8	1.8	1.7
Heroin	0.5	0.4	0.5	0.6	0.5	0.4	0.4	0.3	0.7	0.6	0.6	0.4	0.8	0.5	1.2	1.5	1.5	1.7	1.7
Pharmaceutical opioids	0.8	1.0	0.8	0.8	0.8	1.0	0.8	1.0	1.2	0.8	1.0	0.8	1.3	2.0	2.2	1.7	2.0	1.8	1.6
Other pharmaceuticals	0.7	0.6	0.5	0.8	0.7	1.2	0.7	0.9	0.6	0.7	0.7	0.7	1.0	0.8	1.5	1.3	1.9	2.0	1.5

Note: Data for 2018 and 2019 are preliminary, and likely to rise.

Data for Figure 60. Unintentional drug-induced deaths by drug type in greater Sydney and regional NSW, 2001-2019, rate per 100,000 population continued

Regional NSW

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Other pharmaceuticals	0.6	0.5	0.4	0.7	0.4	0.8	0.5	0.6	0.8	0.8	1.4	0.8	1.5	1.4	1.3	2.5	2.1	2.9	2.2
Benzodiazepines	0.9	0.9	0.7	0.7	0.8	0.7	0.6	0.8	0.7	1.1	1.5	1.8	1.7	2.3	2.3	2.6	3.6	3.3	2.0
Pharmaceutical opioids	1.3	1.1	1	0.8	1	1.1	0.9	0.7	1.2	1.5	1.7	1.7	2.2	3.7	3.1	3.6	2.8	2.8	2.0
Stimulants	0.1	0.3	0.2	0.2	0.5	0.6	0.3	0.2	0.2	0.2	0.2	1.1	0.5	1	1.3	2.6	2.4	2.3	1.8
Heroin	0.8	0.1	0.4	0.2	0.3	0.1	0.2	0.2	0.5	0.4	0.4	0.6	0.3	0.7	0.5	1.2	1.5	1.2	1.3

Note: Data for 2018 and 2019 are preliminary, and likely to rise.

Data for Figure 61. Unintentional drug-induced deaths by regionality in Victoria, 2001-2019, rate per 100,000 population

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Regional VIC	4.0	4.4	5.0	4.8	5.7	5.0	4.5	6.6	6.6	5.7	6.3	4.6	5.5	8.3	7.8	8.2	11.2	8.3	8.7
Greater Melbourne	4.3	4.4	5.3	5.7	4.5	4.2	4.4	6.1	5.3	5.4	5.4	3.6	4.8	5.2	5.9	6.5	6.7	5.9	6.1

Note: Data for 2018 and 2019 are preliminary, and likely to rise.

Data for Figure 62. Unintentional drug-induced deaths by drug type in greater Melbourne and regional Victoria, 2001-2019, rate per 100,000 population

Greater Melbourne

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Benzodiazepines	0.5	0.8	1.2	1.5	1	0.8	1.3	1.5	1.7	1.9	2.1	1.6	1.7	2.4	2.5	3.4	3.5	3.3	3.1
Heroin	0.9	1.3	2.1	2	1.1	0.7	1.2	2.1	1.4	1.7	1.7	0.9	1.6	1.6	2.2	2.6	3.0	2.8	2.4
Other Pharmaceuticals	0.4	0.6	0.7	1.1	0.8	0.5	0.7	0.9	0.8	1	1	0.8	1	1.3	1.4	2.4	2.8	2.7	2.3
Stimulants	0.2	0.2	0.1	0.4	0.5	0.4	0.5	0.4	0.6	0.4	0.5	0.4	0.7	1.1	1.5	2.2	2.3	2.3	1.9
Pharmaceutical opioids	0.6	0.6	1	1.4	0.8	0.8	1.3	1.8	1.3	1.2	1.2	0.9	1	1.7	1.8	2.4	1.7	1.7	1.5

Note: Data for 2018 and 2019 are preliminary, and likely to rise.

Regional VIC

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Benzodiazepines	0.1	1	0.8	0.5	1.2	1.2	0.8	1.9	1.5	2.1	1.7	2.0	2.3	4.1	3.1	3.0	5.7	4.9	4.3
Other pharmaceuticals	0.3	0.6	0.5	0.8	1.1	0.9	1.0	1.4	1.6	1.3	1.5	1.3	1.3	2.7	2.0	3.1	5.5	4.5	3.9
Heroin	0.4	0.7	1	0.8	1.4	0.2	0.3	0.7	1.2	1.2	1.0	0.7	1.0	2.0	1.7	1.9	3.4	2.4	2.9
Stimulants	0.1	0.0	0.1	0.2	0.3	0.4	0.2	0.5	0.1	0.2	0.7	0.7	0.5	1.4	2.3	2.1	3.2	2.4	2.7
Pharmaceutical opioids	0.4	0.9	0.8	0.8	1.0	1.0	0.8	2.0	1.2	2.2	1.4	2.0	2.5	2.9	3.2	3.6	3.4	3.1	2.1

Note: Data for 2018 and 2019 are preliminary, and likely to rise.

Data for Figure 63. Unintentional drug-induced deaths by regionality in Queensland, 2001-2019, rate per 100,000 population

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Greater Brisbane	4.3	3.8	3.3	3.9	3.9	3.1	4.3	4.1	5.2	7.5	6.2	5.4	4.9	5.7	5.8	6.0	6.2	5.6	5.9
Regional QLD	6.0	3.6	3.3	4.8	4.0	3.8	4.4	4.7	6.0	6.4	6.4	7.2	6.4	6.5	7.6	7.8	6.6	6.6	5.3

Note: Data for 2018 and 2019 are preliminary, and likely to rise.

Data for Figure 64. Unintentional drug-induced deaths by regionality in Western Australia, 2001-2019, rate per 100,000 population

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Regional WA	6.0	3.3	3.7	1.7	5.5	4.5	4.7	8.5	8.0	7.2	7.5	6.7	6.0	9.1	10.9	8.8	6.1	8.5	9.6
Greater Perth	6.1	4.6	3.9	2.9	4.3	4.7	5.4	5.5	6.2	6.6	6.4	6.4	6.2	7.0	7.5	8.7	9.1	8.9	8.3

Note: Data for 2018 and 2019 are preliminary, and likely to rise.

Data for Section 8.7 – Unintentional drug-induced deaths 2015-2019 (Statistical Area 3), rate per 100,000 population

	Number of deaths	Population	Rate per 100,000 population
New South Wales			
Queanbeyan	21	60,343	7.0
Snowy Mountains	10	19,751	10.1
South Coast	35	72,367	9.7
Goulburn - Mulwaree	12	36,619	6.6
Young - Yass	11	36,764	6.0
Gosford	62	175,005	7.1
Wyong	62	164,010	7.6
Bathurst	26	48,045	10.8
Lachlan Valley	25	56,250	8.9
Lithgow - Mudgee	17	47,730	7.1
Orange	21	59,218	7.1
Clarence Valley	23	51,257	9.0
Coffs Harbour	44	88,881	9.9
Bourke - Cobar - Coonamble	14	24,613	11.4
Broken Hill and Far West	21	20,441	20.5
Dubbo	28	71,874	7.8
Lower Hunter	31	90,837	6.8
Maitland	19	77,931	4.9
Port Stephens	29	73,541	7.9
Upper Hunter	14	30,709	9.1
Dapto - Port Kembla	39	78,476	9.9
Illawarra Catchment Reserve	0	5	0.0
Kiama - Shellharbour	37	93,712	7.9
Wollongong	63	134,758	9.4
Great Lakes	13	32,053	8.1

Data for Section 8.7 – Unintentional drug-induced deaths 2015-2019 (Statistical Area 3), rate per 100,000 population continued

	Number of deaths	Population	Rate per 100,000 population
New South Wales			
Kempsey - Nambucca	22	49,261	8.9
Lord Howe Island	0	416	0.0
Port Macquarie	35	81,596	8.6
Taree - Gloucester	29	55,065	10.5
Albury	32	63,317	10.1
Lower Murray	12	12,791	18.8
Upper Murray exc. Albury	20	42,876	9.3
Armidale	15	38,226	7.8
Inverell - Tenterfield	12	38,874	6.2
Moree - Narrabri	11	26,247	8.4
Tamworth - Gunnedah	28	82,802	6.8
Lake Macquarie - East	27	123,419	4.4
Lake Macquarie - West	31	77,880	8.0
Newcastle	91	171,367	10.6
Richmond Valley - Coastal	28	82,486	6.8
Richmond Valley - Hinterland	33	71,253	9.3
Tweed Valley	36	94,786	7.6
Griffith - Murrumbidgee (West)	17	49,584	6.9
Tumut - Tumbarumba	6	14,604	8.2
Wagga Wagga	28	95,903	5.8
Shoalhaven	41	102,948	8.0
Southern Highlands	21	49,656	8.5
Baulkham Hills	20	151,260	2.6
Dural - Wisemans Ferry	6	27,324	4.4
Hawkesbury	9	25,324	7.1

Data for Section 8.7 – Unintentional drug-induced deaths 2015-2019 (Statistical Area 3), rate per 100,000 population continued

	Number of deaths	Population	Rate per 100,000 population
New South Wales			
Rouse Hill - McGraths Hill	<5	37,042	1.3
Blacktown	56	141,386	7.9
Blacktown - North	10	101,739	2.0
Mount Druitt	46	116,785	7.9
Botany	21	50,651	8.3
Marrickville - Sydenham - Petersham	35	58,328	12.0
Sydney Inner City	184	237,922	15.5
Eastern Suburbs - North	42	137,140	6.1
Eastern Suburbs - South	71	151,545	9.4
Bankstown	66	181,676	7.3
Canterbury	42	143,615	5.8
Hurstville	32	134,656	4.8
Kogarah - Rockdale	39	148,960	5.2
Canada Bay	27	90,871	5.9
Leichhardt	36	59,844	12.0
Strathfield - Burwood - Ashfield	61	162,792	7.5
Chatswood - Lane Cove	26	119,634	4.3
Hornsby	19	84,450	4.5
Ku-ring-gai	18	124,598	2.9
North Sydney - Mosman	24	101,302	4.7
Manly	11	45,269	4.9
Pittwater	20	63,709	6.3
Warringah	49	159,314	6.2
Camden	10	66,733	3.0
Campbelltown (NSW)	64	166,200	7.7

Data for Section 8.7 – Unintentional drug-induced deaths 2015-2019 (Statistical Area 3), rate per 100,000 population continued

Data for Section 8.7 – Unintentional drug-induced deaths 2015-2019 (Statistical Area 3), rate per 100,000 population continued

	Number of deaths	Population	Rate per 100,000 population
New South Wales			
Wollondilly	10	43,226	4.6
Blue Mountains	42	78,841	10.7
Blue Mountains - South	0	4	0.0
Penrith	59	146,805	8.0
Richmond - Windsor	11	37,656	5.8
St Marys	25	56,075	8.9
Auburn	17	97,622	3.5
Carlingford	25	70,992	7.0
Merrylands - Guildford	61	160,959	7.6
Parramatta	52	150,319	6.9
Pennant Hills - Epping	6	50,826	2.4
Ryde - Hunters Hill	44	143,962	6.1
Bringelly - Green Valley	37	112,393	6.6
Fairfield	61	194,340	6.3
Liverpool	44	125,493	7.0
Cronulla - Miranda - Caringbah	33	115,643	5.7
Sutherland - Menai - Heathcote	28	111,621	5.0
Victoria			
Ballarat	41	107,616	7.6
Creswick - Daylesford - Ballan	12	29,007	8.3
Maryborough - Pyrenees	11	25,758	8.5
Bendigo	47	97,507	9.6
Heathcote - Castlemaine - Kyneton	17	48,789	7.0
Loddon - Elmore	5	11,540	8.7
Barwon - West	5	19,763	5.1

Data for Section 8.7 – Unintentional drug-induced deaths 2015-2019 (Statistical Area 3), rate per 100,000 population continued

	Number of deaths	Population	Rate per 100,000 population
Victoria			
Geelong	91	197,491	9.2
Surf Coast - Bellarine Peninsula	19	76,897	4.9
Upper Goulburn Valley	20	55,417	7.2
Wangaratta - Benalla	26	46,781	11.1
Wodonga - Alpine	25	72,264	6.9
Baw Baw	14	50,761	5.5
Gippsland - East	18	46,265	7.8
Gippsland - South West	31	63,892	9.7
Latrobe Valley	39	74,741	10.4
Wellington	19	43,683	8.7
Brunswick - Coburg	30	94,646	6.3
Darebin - South	19	56,416	6.7
Essendon	22	71,887	6.1
Melbourne City	66	158,323	8.3
Port Phillip	80	110,899	14.4
Stonnington - West	26	68,935	7.5
Yarra	55	96,542	11.4
Boroondara	37	179,240	4.1
Manningham - West	27	96,846	5.6
Whitehorse - West	27	109,405	4.9
Bayside	31	104,214	5.9
Glen Eira	32	159,441	4.0
Kingston	37	124,489	5.9
Stonnington - East	<5	44,435	1.1
Banyule	40	128,948	6.2

Data for Section 8.7 – Unintentional drug-induced deaths 2015-2019 (Statistical Area 3), rate per 100,000 population continued

	Number of deaths	Population	Rate per 100,000 population
Victoria			
Darebin - North	53	101,922	10.4
Nillumbik - Kinglake	11	68,505	3.2
Whittlesea - Wallan	47	232,235	4.0
Keilor	18	62,461	5.8
Macedon Ranges	8	31,226	5.1
Moreland - North	20	81,499	4.9
Sunbury	17	41,919	8.1
Tullamarine - Broadmeadows	31	176,474	3.5
Knox	51	161,728	6.3
Manningham - East	7	27,389	5.1
Maroondah	32	115,644	5.5
Whitehorse - East	27	64,255	8.4
Yarra Ranges	62	155,782	8.0
Cardinia	21	102,544	4.1
Casey - North	29	138,735	4.2
Casey - South	32	187,946	3.4
Dandenong	89	199,433	8.9
Monash	30	188,194	3.2
Brimbank	71	197,004	7.2
Hobsons Bay	30	89,629	6.7
Maribyrnong	49	89,190	11.0
Melton - Bacchus Marsh	50	168,230	5.9
Wyndham	55	246,805	4.5
Frankston	79	140,500	11.2
Mornington Peninsula	56	163,530	6.8

Data for Section 8.7 – Unintentional drug-induced deaths 2015-2019 (Statistical Area 3), rate per 100,000 population continued

	Number of deaths	Population	Rate per 100,000 population
Victoria			
Grampians	34	59,306	11.5
Mildura	16	55,050	5.8
Murray River - Swan Hill	16	37,567	8.5
Campaspe	12	37,752	6.4
Moira	17	29,630	11.5
Shepparton	28	65,382	8.6
Glenelg - Southern Grampians	18	35,883	10.0
Colac - Corangamite	10	37,556	5.3
Warrnambool	15	51,286	5.8
Queensland			
Capalaba	14	74,882	3.7
Cleveland - Stradbroke	26	87,446	5.9
Wynnum - Manly	18	72,310	5.0
Bald Hills - Everton Park	11	43,341	5.1
Chermside	23	72,876	6.3
Nundah	13	41,365	6.3
Sandgate	19	61,018	6.2
Carindale	6	53,396	2.2
Holland Park - Yeronga	42	76,417	11.0
Mt Gravatt	17	76,168	4.5
Nathan	12	41,237	5.8
Rocklea - Acacia Ridge	15	63,394	4.7
Sunnybank	8	52,847	3.0
Centenary	6	34,079	3.5
Kenmore - Brookfield - Moggill	5	47,576	2.1

Data for Section 8.7 – Unintentional drug-induced deaths 2015-2019 (Statistical Area 3), rate per 100,000 population continued

	Number of deaths	Population	Rate per 100,000 population
Queensland			
Sherwood - Indooroopilly	9	54,775	3.3
The Gap - Enoggera	13	52,887	4.9
Brisbane Inner	69	75,941	18.2
Brisbane Inner - East	17	43,851	7.8
Brisbane Inner - North	37	94,243	7.9
Brisbane Inner - West	22	60,161	7.3
Cairns - North	12	55,315	4.3
Cairns - South	48	104,697	9.2
Innisfail - Cassowary Coast	20	35,736	11.2
Port Douglas - Daintree	5	12,044	8.3
Tablelands (East) - Kuranda	9	41,517	4.3
Darling Downs (West) - Maranoa	10	45,012	4.4
Darling Downs - East	9	42,863	4.2
Granite Belt	9	40,737	4.4
Central Highlands (Qld)	<5	29,756	1.7
Rockhampton	43	118,725	7.2
Biloela	<5	14,403	3.5
Gladstone	24	63,177	7.6
Broadbeach - Burleigh	30	64,910	9.2
Coolangatta	18	55,940	6.4
Gold Coast - North	34	69,186	9.8
Gold Coast Hinterland	5	19,331	5.2
Mudgeeraba - Tallebudgera	9	35,113	5.1
Nerang	20	70,217	5.7
Ormeau - Oxenford	32	133,134	4.8

Data for Section 8.7 – Unintentional drug-induced deaths 2015-2019 (Statistical Area 3), rate per 100,000 population continued

	Number of deaths	Population	Rate per 100,000 population
Queensland			
Robina	12	52,518	4.6
Southport	34	61,861	11.0
Surfers Paradise	26	43,778	11.9
Forest Lake - Oxley	20	76,370	5.2
Ipswich Hinterland	10	65,273	3.1
Ipswich Inner	36	109,956	6.5
Springfield - Redbank	27	91,423	5.9
Beaudesert	6	14,472	8.3
Beenleigh	13	43,152	6.0
Browns Plains	18	84,335	4.3
Jimboomba	8	50,299	3.2
Loganlea - Carbrook	17	62,950	5.4
Springwood - Kingston	37	80,302	9.2
Bowen Basin - North	9	34,050	5.3
Mackay	25	117,078	4.3
Whitsunday	<5	22,136	2.3
Bribie - Beachmere	12	34,648	6.9
Caboolture	21	71,371	5.9
Caboolture Hinterland	<5	13,919	3.6
Narangba - Burpengary	13	65,658	4.0
Redcliffe	24	61,985	7.7
The Hills District	10	90,116	2.2
North Lakes	5	78,628	1.3
Strathpine	18	38,858	9.3
Far North	<5	34,193	1.5

Data for Section 8.7 – Unintentional drug-induced deaths 2015-2019 (Statistical Area 3), rate per 100,000 population continued

	Number of deaths	Population	Rate per 100,000 population
Queensland			
Outback - North	9	30,745	5.9
Outback - South	<5	17,787	2.8
Buderim	16	57,537	5.6
Caloundra	22	85,571	5.1
Maroochy	20	59,587	6.7
Noosa	14	43,801	6.4
Sunshine Coast Hinterland	21	51,916	8.1
Nambour	22	44,794	9.8
Noosa Hinterland	5	22,953	4.4
Toowoomba	42	154,866	5.4
Charters Towers - Ayr - Ingham	13	42,672	6.1
Townsville	69	192,722	7.2
Bundaberg	34	89,630	7.6
Burnett	17	49,712	6.8
Gympie - Cooloola	25	50,913	9.8
Hervey Bay	23	58,583	7.9
Maryborough	14	45,742	6.1
South Australia			
Adelaide City	9	24,230	7.4
Adelaide Hills	7	74,054	1.9
Burnside	9	45,439	4.0
Campbelltown (SA)	9	51,828	3.5
Norwood - Payneham - St Peters	15	36,630	8.2
Prospect - Walkerville	8	29,099	5.5
Unley	7	39,044	3.6

Data for Section 8.7 – Unintentional drug-induced deaths 2015-2019 (Statistical Area 3), rate per 100,000 population continued

	Number of deaths	Population	Rate per 100,000 population
South Australia			
Gawler - Two Wells	<5	35,523	1.4
Playford	26	92,761	5.6
Port Adelaide - East	17	70,573	4.8
Salisbury	45	139,908	6.4
Tea Tree Gully	28	95,291	5.9
Holdfast Bay	10	35,091	5.7
Marion	22	92,958	4.7
Mitcham	15	65,529	4.6
Onkaparinga	38	171,841	4.4
Charles Sturt	47	113,126	8.3
Port Adelaide - West	31	59,510	10.4
West Torrens	18	63,074	5.7
Barossa	<5	36,737	1.4
Lower North	<5	23,053	2.2
Mid North	13	27,772	9.4
Yorke Peninsula	9	25,944	6.9
Eyre Peninsula and South West	13	58,126	4.5
Outback - North and East	15	27,184	11.0
Fleurieu - Kangaroo Island	8	52,184	3.1
Limestone Coast	14	66,756	4.2
Murray and Mallee	18	71,922	5.0
Western Australia			
Augusta - Margaret River - Busselton	24	53,541	9.0
Bunbury	51	104,578	9.8
Manjimup	8	23,089	6.9

Data for Section 8.7 – Unintentional drug-induced deaths 2015-2019 (Statistical Area 3), rate per 100,000 population continued

	Number of deaths	Population	Rate per 100,000 population
Western Australia			
Mandurah	65	100,800	12.9
Cottesloe - Claremont	24	71,669	6.7
Perth City	59	108,339	10.9
Bayswater - Bassendean	46	83,579	11.0
Mundaring	11	43,134	5.1
Swan	52	135,918	7.7
Joondalup	42	161,087	5.2
Stirling	104	201,781	10.3
Wanneroo	59	198,554	5.9
Armadale	41	84,788	9.7
Belmont - Victoria Park	40	74,096	10.8
Canning	24	96,925	5.0
Gosnells	50	122,784	8.1
Kalamunda	29	59,099	9.8
Serpentine - Jarrahdale	8	29,318	5.5
South Perth	17	43,836	7.8
Cockburn	43	107,765	8.0
Fremantle	43	38,752	22.2
Kwinana	20	41,730	9.6
Melville	33	105,120	6.3
Rockingham	55	131,054	8.4
Albany	31	60,564	10.2
Wheat Belt - North	22	56,525	7.8
Wheat Belt - South	<5	20,451	2.4
Kimberley	10	36,296	5.5

Data for Section 8.7 – Unintentional drug-induced deaths 2015-2019 (Statistical Area 3), rate per 100,000 population continued

	Number of deaths	Population	Rate per 100,000 population
Western Australia			
East Pilbara	8	26,069	6.1
West Pilbara	8	35,861	4.5
Esperance	8	16,156	9.9
Gascoyne	8	9,588	16.7
Goldfields	18	39,977	9.0
Mid West	31	54,482	11.4
Tasmania			
Brighton	10	17,579	11.4
Hobart - North East	20	54,005	7.4
Hobart - North West	27	54,199	10.0
Hobart - South and West	8	34,064	4.7
Hobart Inner	22	53,119	8.3
Sorell - Dodges Ferry	5	16,533	6.0
Launceston	29	83,288	7.0
Meander Valley - West Tamar	<5	22,909	2.2
North East	9	37,942	4.7
Central Highlands (Tas.)	<5	11,391	4.4
Huon - Bruny Island	5	19,987	5.0
South East Coast	5	6,871	14.6
Burnie - Ulverstone	14	48,590	5.8
Devonport	10	45,564	4.4
West Coast	5	17,516	5.7

Data for Section 8.7 – Unintentional drug-induced deaths 2015-2019 (Statistical Area 3), rate per 100,000 population continued

	Number of deaths	Population	Rate per 100,000 population
Northern Territory			
Darwin City	5	28,306	3.5
Darwin Suburbs	15	57,232	5.2
Litchfield	<5	24,991	2.0
Palmerston	15	36,789	8.2
Alice Springs	19	39,388	9.6
Barkly	<5	6,152	8.1
Daly - Tiwi - West Arnhem	<5	17,950	2.8
East Arnhem	<5	14,574	3.4
Katherine	9	20,794	8.7
Australian Capital Territory			
Belconnen	25	98,857	5.1
Canberra East	<5	1,549	32.3
Gungahlin	8	75,828	2.1
North Canberra	28	55,812	10.0
South Canberra	13	28,658	9.1
Tuggeranong	27	85,683	6.3
Weston Creek	<5	23,270	2.1
Woden Valley	14	35,822	7.8
Molonglo	0	5,519	0.0
Urriarra - Namadgi	0	609	0.0

Note: Data are aggregated over the five-year period. For areas with fewer than five deaths, the actual number of deaths has been suppressed to maintain confidentiality. For these areas, the rate has been calculated based on an assigned number of 2.5 deaths.