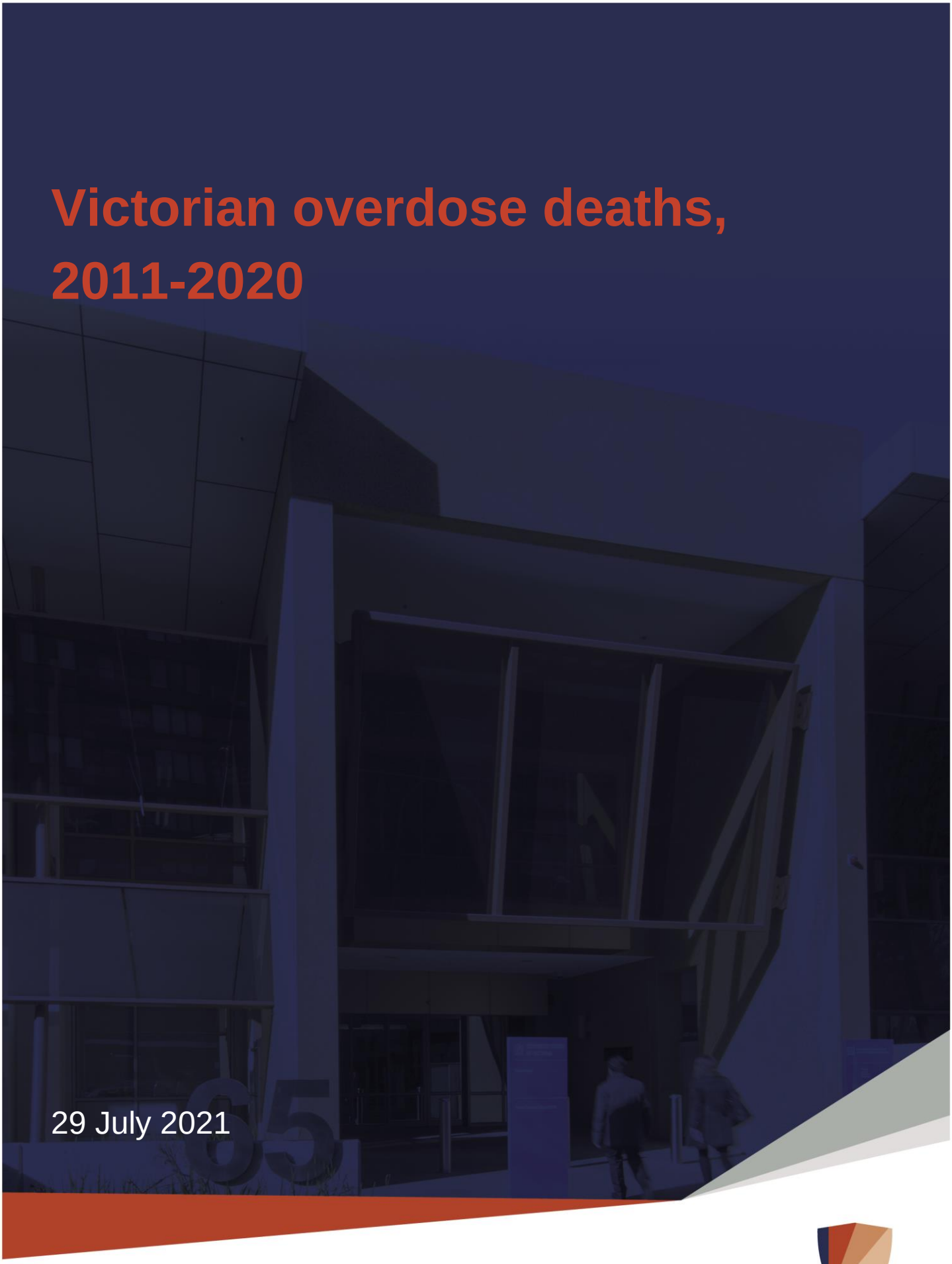
Victorian overdose deaths, 2011-2020



29 July 2021

Coroners Court of Victoria

Contents

Purpose

This report presents the 2020 update to Victorian overdose death statistics.

This is the first in a planned series of regular public reports on overdose deaths data from the Coroners Court of Victoria, aimed at supporting drug harm reduction initiatives in the community.

The report is produced under the Court's initiative to release timely and accessible information on deaths to the Victorian public.

Victorian Overdose Deaths Register

In Victoria, all deaths from suspected non-natural causes, including suspected overdoses, are required to be reported to the Coroners Court of Victoria. These deaths are recorded by the Court in the Victorian Overdose Deaths Register, which is the data source for this report.

The Register is implemented consistently with the United States Substance Abuse and Mental Health Services Administration (SAMHSA) Consensus Panel recommendations for determining and documenting drug poisoning deaths.[1] Regular searches are conducted across coronial databases to identify Victorian overdose deaths. Any such death is added to the Register and information is recorded including the following:

- Deceased's age
- Deceased's sex
- The specific drug or drugs that the expert death investigators identified as playing a contributory role. (Only contributing drugs are coded, not all drugs detected.)
- The location of fatal incident and location where the deceased usually resided.
- Whether the death was drug induced (an overdose death in the absence of any non-drug contributing factors) or drug related (an overdose death where factors unrelated to drug toxicity also played a contributory role, such as cardiomegaly or respiratory disease).[2]

Definition of overdose

The term "overdose" is used throughout this data summary to describe any death where the expert death investigators (the coroner, forensic pathologist and forensic toxicologist) determined the

---

1 Goldberger BA, Maxwell JC, Campbell A, Wilford BB, "Uniform Standards and Case Definitions for Classifying Opioid-Related Deaths: Recommendations by a SAMHSA Consensus Panel", *Journal of Addictive Diseases*, 2013;32(3): 231-243.

2 For more on the Overdose Deaths Register design, definitions, case inclusion criteria and coding process see Dwyer J, Ogeil O, Bugeja L, Heilbronn C, Lloyd B, *Victorian Overdose Deaths: The Role of Pharmaceutical Drugs and Drug Combinations*, Richmond: Turning Point, February 2017.

acute toxic effects of a drug or drugs played a contributory role. This usage is consistent with the definition of a 'drug poisoning death' recommended by SAMHSA.

Deaths associated with the behavioural effects of drug taking (for example, a fatal motor vehicle collision while affected by drugs and alcohol) or its chronic effects (for example, alcoholic liver disease) are excluded from the Register. Likewise, deaths resulting from allergic reactions to drugs are excluded, and deaths caused by injuries during drug administration.

The definition of the term "drug" largely reflects the SAMHSA definition:

> *Any chemical compound that may be used by or administered to humans or animals as an aid in the diagnosis, treatment, or prevention of disease or injury; for the relief of pain or suffering; to control or improve any physiologic or pathologic condition; or for the feeling it causes.*

However, in this data summary alcohol is also included as a drug, whereas it is explicitly excluded under the SAMHSA definition.

Considerations when interpreting the data

There is substantial variation over time in the Victorian overdose death data, including the annual frequency of overdose deaths among particular cohorts defined by age and sex; the annual frequency in particular locations; and the annual frequency involving specific contributing drugs and drug combinations.

Caution should be exercised in interpreting this variation. In some instances, an observed increase or decrease may reflect underlying trends and patterns in drug-related harms; but in other instances it might result from random factors. Particular care is required when considering any apparent increase or decrease that involves low frequencies (for example 20 or fewer deaths per year), because the influence of random factors is far greater at lower frequencies and can create the illusion of a trend where there is none.

Changes in reported frequencies over time

The contents of the Register are regularly revised and updated as coronial investigations progress. Through the coroner’s investigation, an overdose death initially characterised as involving one drug might be determined to have involved two other drugs; or a death initially thought to be unrelated to drug consumption might be found to be a fatal overdose.

Another type of revision that might take place is in how drugs are grouped and categorised for analysis. This can occur when the Court revises its approach to understanding and describing drug-related harms, usually in response to expert advice and feedback.

Therefore, overdose deaths data reported from the Register can change over time.

1. Overdose deaths, Victoria 2011-2020

There were 4551 overdose deaths in Victoria between 2011 and 2020. This section provides an overview of basic frequencies and the socio-demographics of the deceased.

1.1. Annual frequency and rate by sex

Table 1 shows the annual frequency and proportion of Victorian overdose deaths by sex of the deceased person for the period 2011-2020. There was a steady increase in overdose deaths between 2011 and 2018, then a slight decline from the 2018 peak in 2019 and 2020. This pattern generally held true for both males and females. Males consistently accounted for two-thirds of overdose deaths throughout the period.

Table 1: Annual frequency and proportion of overdose deaths by deceased sex, Victoria 2011-2020.

Sex	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Frequency	**362**	**365**	**381**	**387**	**454**	**494**	**523**	**543**	**516**	**526**
Male	245	244	241	253	302	331	336	347	329	339
Female	117	121	140	134	152	163	187	196	187	187
Proportion	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Male	67.7	66.8	63.3	65.4	66.5	67.0	64.2	63.9	63.8	64.4
Female	32.3	33.2	36.7	34.6	33.5	33.0	35.8	36.1	36.2	35.6

Figure A shows the annual overdose death rate per 100,000 males and females in the Victorian population, 2011-2020. There was a slight increasing trend over time among both males and females; the rate for males was nearly double that for females.

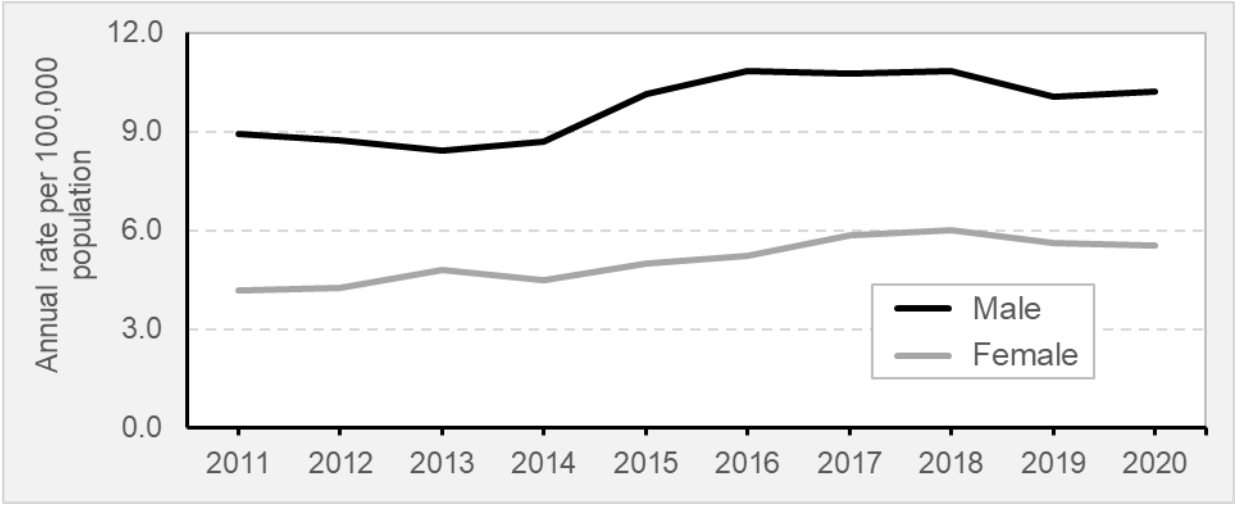


Figure A: Annual overdose death rate per 100,000 population by sex, Victoria 2011-2020.

1.2. Annual frequency by sex and age group

Table 2 shows the annual frequency of Victorian overdose deaths by sex and age group of the deceased person, 2011-2020.

The frequency was generally lowest among the youngest and oldest age groups and peaked among those aged 35 to 54. There was almost no change across the 10-year period in the frequency of overdose death among those aged under 18 years, but an increase of around 50% among those aged 35 to 54, and a 100% or more increase between 2011 and 2020 in annual frequency of overdose deaths among those aged 55 and over.

Table 2: Annual overdose death frequency by deceased sex and age group, Victoria 2011-2020.

Age group by sex	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Male	**245**	**244**	**241**	**253**	**302**	**331**	**336**	**347**	**329**	**339**
Under 18	4	2	1	0	0	3	1	0	4	0
18 to 24	9	17	13	7	12	20	11	16	15	27
25 to 34	74	79	60	52	57	52	69	67	47	57
35 to 44	82	73	74	91	110	111	112	107	92	91
45 to 54	54	39	51	57	84	83	80	99	92	94
55 to 64	11	25	27	32	24	40	36	42	46	43
65 and over	11	9	15	14	15	22	27	16	33	27
Female	**117**	**121**	**140**	**134**	**152**	**163**	**187**	**196**	**187**	**187**
Under 18	0	0	2	1	1	1	3	1	1	0
18 to 24	5	4	5	6	7	6	8	13	8	5
25 to 34	24	19	21	29	15	25	23	28	21	37
35 to 44	22	35	40	27	46	47	44	48	39	52
45 to 54	37	30	32	35	36	39	44	36	54	47
55 to 64	16	21	25	25	27	29	36	41	32	23
65 and over	13	12	15	11	20	16	29	29	32	23
Total	**362**	**365**	**381**	**387**	**454**	**494**	**523**	**543**	**516**	**526**
Under 18	4	2	3	1	1	4	4	1	5	0
18 to 24	14	21	18	13	19	26	19	29	23	32
25 to 34	98	98	81	81	72	77	92	95	68	94
35 to 44	104	108	114	118	156	158	156	155	131	143
45 to 54	91	69	83	92	120	122	124	135	146	141
55 to 64	27	46	52	57	51	69	72	83	78	66
65 and over	24	21	30	25	35	38	56	45	65	50

Figure B shows the sex-specific and age-specific average annual rate of overdose deaths per 100,000 Victorians across the 10-year period. For both males and females, the lowest rate was among those aged under 18 years. The rate then increased steadily to peak in males aged 35-44, and in females aged 35-54, before declining among older Victorians.

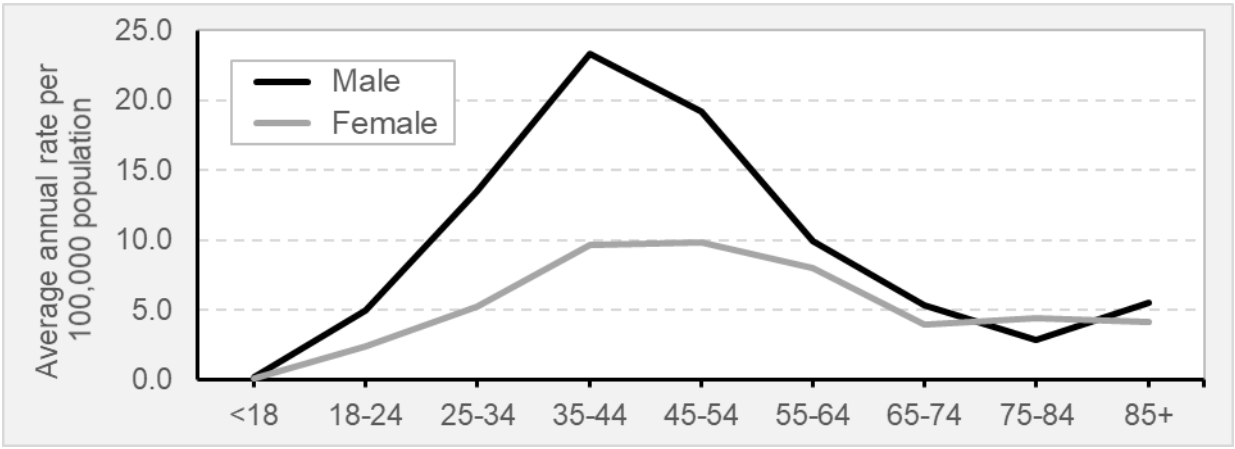


Figure B: Average annual overdose death rate per 100,000 population by sex and age group, Victoria 2011-2020.

1.3. Metropolitan Melbourne and Regional Victoria

Table 3 shows the annual Victorian overdose death frequency and proportion for 2011-2020 by location of fatal incident in Metropolitan Melbourne or Regional Victoria. The annual frequency in both Metropolitan Melbourne and Regional Victoria generally followed the same trend as for all overdose deaths: a steady increase in frequency between 2011 and 2018, then a slight decline from this peak in 2019 and 2020. Just over a quarter of Victorian overdose deaths each year occurred in Regional Victoria, with very little variation in this proportion over the 10-year period.

Table 3: Annual overdose death frequency and proportion by fatal incident location, Victoria 2011-2020.

Fatal incident location	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Frequency	**362**	**365**	**381**	**387**	**454**	**494**	**523**	**543**	**516**	**526**
Metropolitan Melbourne	277	265	277	290	346	374	391	394	385	388
Regional Victoria	85	100	104	97	108	120	132	149	131	138
Proportion	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Metropolitan Melbourne	76.5	72.6	72.7	74.9	76.2	75.7	74.8	72.6	74.6	73.8
Regional Victoria	23.5	27.4	27.3	25.1	23.8	24.3	25.2	27.4	25.4	26.2

Figures C1 and C2 (over page) show the annual overdose death rate for men and women in Metropolitan Melbourne and Regional Victoria respectively. Again, these annual rates follow the same trend as for all Victorian deaths (Figure A): a gradual increase over the course of the 10-year period. The Regional Victorian rates show slightly more variation from year to year than the Metropolitan Melbourne rates; the reason for this is likely to be that lower frequencies lead to greater random variance in the data.

Most crucially, the annual overdose death rate for males in Metropolitan Melbourne is very similar to males in Regional Victoria, and likewise the annual overdose death rate for females in Metropolitan Melbourne and Regional Victoria is almost identical.

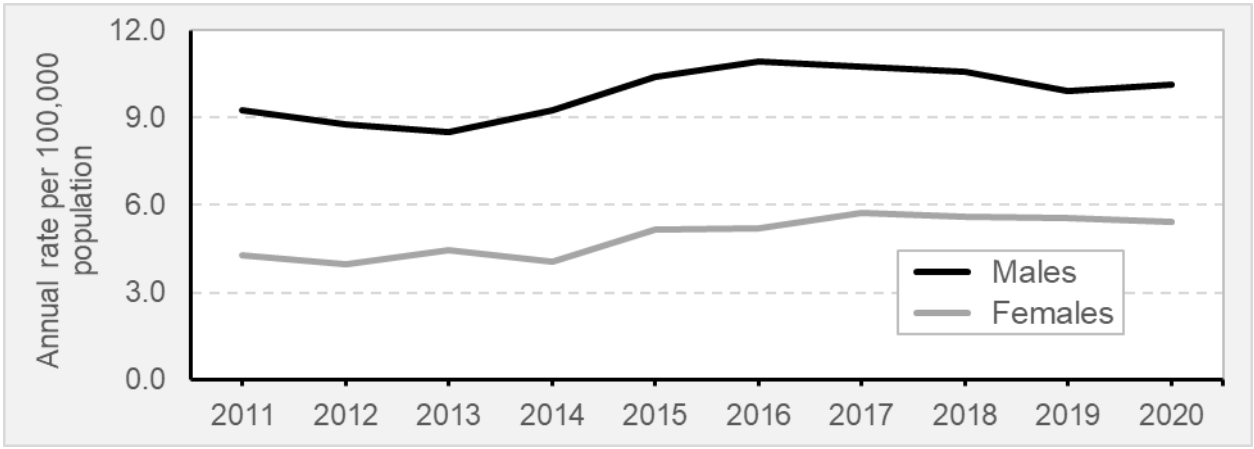


Figure C1: Annual overdose death rate per 100,000 population by sex, Metropolitan Melbourne 2011-2020.

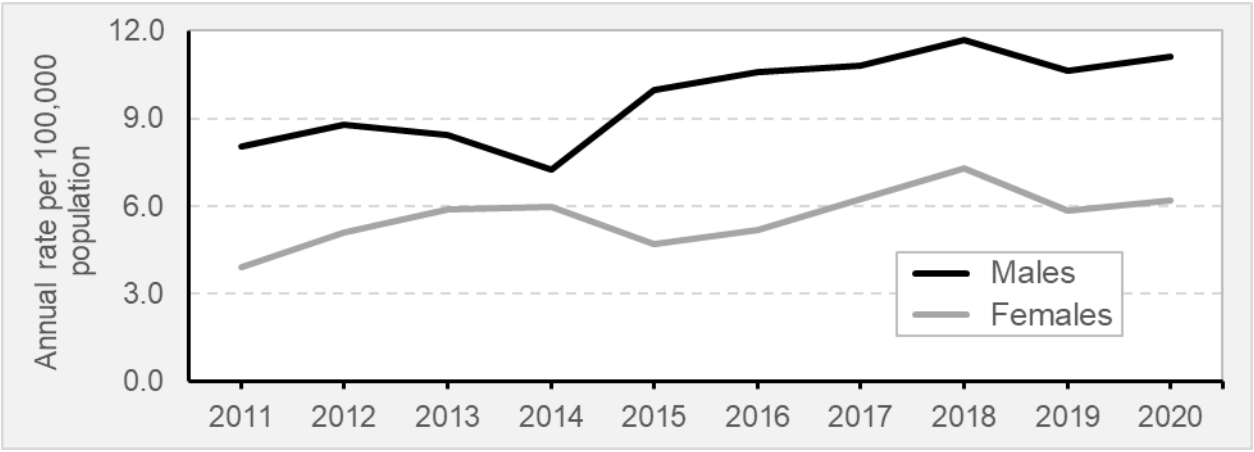


Figure C2: Annual overdose death rate per 100,000 population by sex, Regional Victoria 2011-2020.

Supplementing the tables and figures presented in this section, Attachment A to this data summary shows the annual frequency of overdose deaths by local government area of fatal incident, Victoria 2011-2020.

2. Contributing drugs

This section provides an overview of main drug types, drug groups and individual drugs that contributed to the 4551 overdose deaths in Victoria between 2011 and 2020.

2.1. Single drug and combined drug toxicity

Table 4 shows the annual frequency and proportion of overdose deaths in Victoria for the period 2011-2020, which were due to the acute toxic effects of a single drug versus multiple drugs.

Table 4: Annual frequency of single drug and multiple drug overdose deaths, Victoria 2011-2020.

Contributing drugs	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Frequency	**362**	**365**	**381**	**387**	**454**	**494**	**523**	**543**	**516**	**526**
Single drug	134	114	119	101	131	137	123	133	129	136
Multiple drugs	228	251	262	286	323	357	400	410	387	390
Proportion	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Single drug	37.0	31.2	31.2	26.1	28.9	27.7	23.5	24.5	25.0	25.9
Multiple drugs	63.0	68.8	68.8	73.9	71.1	72.3	76.5	75.5	75.0	74.1

The proportion of Victorian overdose deaths involving multiple drugs increased during the period, from 63.0% of deaths (228 of 362) in 2011 to 74.1% of deaths (390 of 526) in 2020. This underscores the importance of focusing on combinations of drugs used in harm reduction education and other overdose prevention initiatives.

2.2. Contributing drug types

Contributing drugs across all Victorian overdose deaths were classified into three main types for further analysis, being pharmaceutical drugs, illegal drugs and alcohol. Definitions of these drug types are found in Attachment B, together with a discussion of classification challenges.

Table 5 shows the annual frequency and proportion of Victorian overdose deaths involving pharmaceutical drugs, illegal drugs and alcohol. Most overdose deaths were from combined (multiple) drug toxicity, which is why the annual frequencies for each drug type in Table 5 sum to greater than the overall annual frequency.

Table 5: Annual frequency of overdose deaths by contributing drug type, Victoria 2011-2020.

Contributing drugs	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Frequency	**362**	**365**	**381**	**387**	**454**	**494**	**523**	**543**	**516**	**526**
Pharmaceutical	275	304	314	318	358	385	414	427	407	398
Illegal	146	126	157	160	223	264	267	260	274	270
Alcohol	89	80	96	94	106	124	151	161	145	154
Proportion	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Pharmaceutical	76.0	83.3	82.4	82.2	78.9	77.9	79.2	78.6	78.9	75.7
Illegal	40.3	34.5	41.2	41.3	49.1	53.4	51.1	47.9	53.1	51.3
Alcohol	24.6	21.9	25.2	24.3	23.3	25.1	28.9	29.7	28.1	29.3

In 2020, pharmaceutical drugs remained the most frequent contributors to Victorian overdose deaths, playing a role in just over three-quarters of all deaths. Illegal drugs contributed in just over half of overdose deaths, and alcohol in approximately 30%. These proportions are consistent with the years immediately preceding 2020.

2.3. Combinations of contributing drug types

To explore further how pharmaceutical drugs, illegal drugs and alcohol interacted, each death was classified according to the combination of drug types that contributed to the fatal overdose. The seven mutually exclusive combinations were:

- Pharmaceutical drugs only (no contributing illegal drugs or alcohol).
- Pharmaceutical and illegal drugs (no alcohol).
- Illegal drugs only (no pharmaceutical drugs or alcohol).
- Pharmaceutical drugs and alcohol (no illegal drugs).
- Pharmaceutical and illegal drugs and alcohol.
- Alcohol only (no contributing pharmaceutical or illegal drugs).
- Illegal drugs and alcohol (no contributing pharmaceutical drugs).

Table 6 shows the annual frequency and proportion of Victorian overdose deaths for each combination of contributing drugs.

Table 6: Annual frequency of overdose deaths by contributing drug type, Victoria 2011-2020.

Contributing drugs	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Frequency	**362**	**365**	**381**	**387**	**454**	**494**	**523**	**543**	**516**	**526**
Pharm only	151	173	154	163	156	154	168	177	152	153
Pharma + illegal	61	73	77	90	124	146	136	133	160	143
Illegal only	61	39	54	40	68	70	68	71	59	76
Pharma + alcohol	46	47	58	46	53	47	62	72	54	63
Pharma + illegal + alc	17	11	25	19	25	38	48	45	41	39
Alcohol only	19	19	12	18	22	29	26	34	36	40
Illegal + alcohol	7	3	1	11	6	10	15	11	14	12
Proportion	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Pharm only	41.7	47.4	40.4	42.1	34.4	31.2	32.1	32.6	29.5	29.1
Pharma + illegal	16.9	20.0	20.2	23.3	27.3	29.6	26.0	24.5	31.0	27.2
Illegal only	16.9	10.7	14.2	10.3	15.0	14.2	13.0	13.1	11.4	14.4
Pharma + alcohol	12.7	12.9	15.2	11.9	11.7	9.5	11.9	13.3	10.5	12.0
Pharma + illegal + alc	4.7	3.0	6.6	4.9	5.5	7.7	9.2	8.3	7.9	7.4
Alcohol only	5.2	5.2	3.1	4.7	4.8	5.9	5.0	6.3	7.0	7.6
Illegal + alcohol	1.9	0.8	0.3	2.8	1.3	2.0	2.9	2.0	2.7	2.3

The two clearest trends in this data were the decline over the 10-year period in the frequency and proportion of Victorian overdose deaths involving only pharmaceutical drugs, and the concomitant rise in overdose deaths involving pharmaceutical and illegal drugs in combination. It is not possible

to discern whether there are any other trends, because of the low frequencies and substantial year-to-year variability in the data.

2.4. Contributing drug groups

Pharmaceutical drugs were further disaggregated into drug groups for more detailed analysis, using a slightly modified version of the US Drug Abuse Warning Network (DAWN) Drug Vocabulary level two groupings.[3]

Table 7 shows the annual frequency of Victorian overdose deaths 2011-2020 involving each of the major contributing pharmaceutical drug groups, with illegal drugs and alcohol included for context. Most overdose deaths were from combined drug toxicity, which is why the annual frequencies for each drug group in Table 7 sum to greater than the overall annual frequency.

Table 7: Annual frequency and proportion of contribution to overdose deaths, among major contributing pharmaceutical drug groups plus alcohol and illegal drugs, Victoria 2011-2020.

Drug type	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Frequency	**362**	**365**	**381**	**387**	**454**	**494**	**523**	**543**	**516**	**526**
Benzodiazepines	180	199	213	215	238	263	303	304	285	281
Illegal drugs	146	126	157	160	223	264	267	260	274	270
Pharmaceutical opioids	165	188	176	182	185	183	198	207	207	189
Antidepressants	101	141	135	144	161	165	196	196	170	179
Alcohol	89	80	96	94	106	124	151	161	145	154
Antipsychotics	65	78	76	81	91	107	136	109	103	113
Anticonvulsants	13	10	37	45	51	54	75	87	85	92
Non-benzo anxiolytics	33	38	56	48	60	40	56	47	54	51
Non-opioid analgesics	30	44	39	49	46	35	38	40	50	38
Proportion	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Benzodiazepines	49.7	54.5	55.9	55.6	52.4	53.2	57.9	56.0	55.2	53.4
Illegal drugs	40.3	34.5	41.2	41.3	49.1	53.4	51.1	47.9	53.1	51.3
Pharmaceutical opioids	45.6	51.5	46.2	47.0	40.7	37.0	37.9	38.1	40.1	35.9
Antidepressants	27.9	38.6	35.4	37.2	35.5	33.4	37.5	36.1	32.9	34.0
Alcohol	24.6	21.9	25.2	24.3	23.3	25.1	28.9	29.7	28.1	29.3
Antipsychotics	18.0	21.4	19.9	20.9	20.0	21.7	26.0	20.1	20.0	21.5
Anticonvulsants	3.6	2.7	9.7	11.6	11.2	10.9	14.3	16.0	16.5	17.5
Non-benzo anxiolytics	9.1	10.4	14.7	12.4	13.2	8.1	10.7	8.7	10.5	9.7
Non-opioid analgesics	8.3	12.1	10.2	12.7	10.1	7.1	7.3	7.4	9.7	7.2

Benzodiazepines were the most frequent contributing pharmaceutical drug group, playing a role in an average 54.5% of overdose deaths annually across the period. The next most frequent pharmaceutical drug groups were opioids (an average 41.3% of overdose deaths each year), antidepressants (annual average 34.9%) and antipsychotics (annual average 21.1%).

3 The main modifications were that the DAWN 'anxiolytics' group was divided into benzodiazepine and non-benzodiazepine anxiolytics, and the DAWN 'analgesics' group was divided into pharmaceutical opioids and non-opioid analgesics.

One notable trend in the data was the rise in anticonvulsant involvement over time. As shown in Table 8, this trend was primarily driven by rising pregabalin involvement in Victorian overdose deaths; this is discussed further below. There was also a gradual increase over time in antidepressant involvement, which may potentially be explained by the increase over time in antidepressant prescribing in Australia.[4]

2.5. Individual contributing drugs

Table 8 shows the annual frequency of overdose deaths, Victoria 2011-2020, involving the most frequent contributing individual drugs. The individual drugs are tabulated by the major drug groups to which they belong.

Table 8: Annual frequency and proportion of contribution to overdose deaths, among most prevalent individual contributing drugs, Victoria 2011-2020.

Drug type	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Benzodiazepines	**180**	**199**	**213**	**215**	**238**	**263**	**303**	**304**	**285**	**281**
Diazepam	124	133	165	169	192	204	242	235	232	217
Alprazolam	43	57	45	28	23	23	27	31	28	29
Clonazepam	14	18	19	25	33	31	48	40	35	43
Oxazepam	44	40	17	19	34	27	23	35	28	18
Temazepam	48	34	22	20	25	26	32	29	20	16
Nitrazepam	11	24	26	13	17	22	11	16	13	14
Illegal drugs	**146**	**126**	**157**	**160**	**223**	**264**	**267**	**260**	**274**	**270**
Heroin	125	107	128	136	171	190	220	203	212	187
Methamphetamine	29	34	51	53	72	120	93	96	111	111
Cocaine	2	3	5	7	15	11	10	17	20	27
NPS	0	0	3	0	2	8	2	8	17	33
MDMA	1	1	3	4	5	12	7	4	13	17
GHB	3	1	0	1	0	4	6	5	7	18
Pharma opioids	**165**	**188**	**176**	**182**	**185**	**183**	**198**	**207**	**207**	**189**
Methadone	72	75	70	67	67	72	71	72	74	65
Oxycodone	46	46	61	46	58	54	66	62	59	61
Codeine	38	55	46	47	48	46	37	34	42	39
Tramadol	15	18	24	23	32	26	32	35	37	28
Morphine	12	13	9	12	9	13	18	19	18	10
Fentanyl	5	17	11	11	23	13	14	18	5	5
Buprenorphine	14	4	3	7	4	2	8	20	11	16

(Table continued over page)

4 See for example Whitely D and Raven M, "1 in 8 (over 3 million) Australians are on antidepressants - Why is the Lucky Country so miserable?", *PsychWatch Australia*, 25 August 2019, <https://www.psychwatchaustralia.com/post/1-in-8-over-3-million-australians-are-on-antidepressants-why-is-the-lucky-country-so-miserable>, accessed 23 July 2021.

(Table continued from previous page)

Drug type	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Antidepressants	**101**	**141**	**135**	**144**	**161**	**165**	**196**	**196**	**170**	**179**
Mirtazapine	23	26	30	29	50	25	42	59	45	54
Amitriptyline	22	32	25	41	28	34	47	40	41	32
Citalopram	21	25	25	25	26	28	35	26	26	34
Venlafaxine	16	15	20	19	10	22	27	18	20	18
Duloxetine	7	14	11	12	12	15	12	19	20	17
Sertraline	4	12	13	9	12	11	18	19	20	13
Desvenlafaxine	3	6	8	11	15	19	15	18	12	15
Fluoxetine	8	13	10	7	12	16	10	12	12	10
Alcohol	**89**	**80**	**96**	**94**	**106**	**124**	**151**	**161**	**145**	**154**
Antipsychotics	**65**	**78**	**76**	**81**	**91**	**107**	**136**	**109**	**103**	**113**
Quetiapine	34	41	41	48	49	57	74	53	50	53
Olanzapine	17	22	16	21	30	36	41	42	33	44
Risperidone	11	8	10	7	9	14	9	13	10	4
Zuclopenthixol	4	6	3	3	5	4	14	4	7	8
Chlorpromazine	4	10	6	3	5	5	5	4	5	4
Clozapine	0	4	6	2	4	5	3	3	3	6
Anticonvulsants	**13**	**10**	**37**	**45**	**51**	**54**	**75**	**87**	**85**	**92**
Pregabalin	0	0	17	27	34	34	52	69	66	69
Valproic Acid	5	6	13	9	9	6	7	5	7	7
Lamotrigine	1	2	2	2	2	3	6	10	7	8
Non-benzo anxiolytics	**33**	**38**	**56**	**48**	**60**	**40**	**56**	**47**	**54**	**51**
Doxylamine	11	21	23	13	14	13	18	18	16	10
Zopiclone	6	13	14	11	17	13	17	13	22	18
Pentobarbitone	11	1	8	15	18	9	10	6	9	4
Zolpidem	5	5	4	6	11	6	8	6	8	8
Diphenhydramine	4	2	7	5	5	4	6	6	7	10
Non-opioid analgesics	**30**	**44**	**39**	**49**	**46**	**35**	**38**	**40**	**50**	**38**
Paracetamol	24	42	37	37	42	30	32	32	47	34
Ibuprofen	4	5	2	7	5	4	1	7	4	2

Some notable findings from inspection of Table 8 are presented in the next section of this data summary.

3. Themes and issues

The following is a selection of the main themes and issues that emerge from consideration of the Victorian overdose deaths data presented above.

3.1. COVID-19 and overdose death

The COVID-19 pandemic was officially declared in Australia on 27 February 2020. Both the pandemic and the government initiatives implemented to halt its spread had tremendous social, health and economic impacts across Victoria throughout 2020.

There were concerns that these impacts - which included unemployment, isolation, and heightened psychological distress - might precipitate changes in drug-related harms, for example through substantially altering drug supply and drug consumption patterns and engagement in drug treatment services.[5] But to date the overall overdose death frequencies presented here show little direct evidence to support such concerns: between 2019 and 2020 there was an increase of only 10 overdose deaths (1.9%).

The finding that the onset of the pandemic was not followed by a notable shift in the overall frequency of fatal overdoses in Victoria appears to be consistent with studies in related areas. In particular, the Australian Institute of Health and Welfare's excellent review of available evidence on alcohol and other drug use shows these have not clearly been impacted (either positively or negatively) during the pandemic.[6]

Table 9: Monthly frequency of overdose deaths, Victoria 2011-2020.

Month	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
January	36	24	36	37	39	35	48	47	32	43
February	24	24	35	32	31	38	33	39	46	48
March	39	25	31	34	45	36	49	44	41	58
April	26	28	36	29	30	40	34	38	36	40
May	25	34	28	41	31	35	47	56	57	42
June	36	36	28	31	37	47	55	36	43	45
July	31	34	20	41	39	47	52	46	29	55
August	28	36	27	29	34	45	46	46	45	41
September	21	33	35	29	40	51	43	52	37	32
October	35	27	34	36	49	36	34	49	57	51
November	31	29	29	23	34	45	40	44	45	36
December	30	35	42	25	45	39	42	46	48	35

5 Dietze P, Peacock A, "Illicit drug use and harms in Australia in the context of COVID-19 and associated restrictions: Anticipated consequences and initial responses", *Drug and Alcohol Review*, 2020;39(4): 297-300.

6 Australian Institute of Health and Welfare, "Impacts of COVID-19 on alcohol and other drug use", updated 28 April 2021, <https://www.aihw.gov.au/reports/alcohol/alcohol-tobacco-other-drugs-australia/contents/impact-of-covid-19-on-alcohol-and-other-drug-use>, accessed 18 June 2021.

Table 9 shows the monthly frequency of overdose deaths in Victoria for the period 2011-2020. There was a potential spike during March 2020, when 58 overdose deaths occurred, which coincided with the declaration that Australia was experiencing a COVID-19 pandemic, as well as the first state and Commonwealth efforts to halt its spread through restrictions on population movement. The significance of this is difficult to interpret given the substantial variation from month to month in frequencies even before the pandemic. Furthermore, 58 deaths in one month is not substantially outside the range of previous monthly frequencies (in 2019 there were two months when 57 overdose deaths occurred).

Overall it is still too early to draw any firm conclusions on how the pandemic might affect overdose deaths in Victoria, and overdose death is only one measure among many of the burden of drug-related harms. However, as discussed below, there may be some evidence of the pandemic's impact on particular types of overdose deaths.

3.2. Illegal drugs including new psychoactive substances (NPS)

Perhaps the most notable developments in drug contribution during 2020 were among the illegal drugs. Heroin involvement declined compared to 2019 (more on this below), and involvement of methamphetamine remained steady, but there were marked increases in cocaine, GHB and MDMA, all of which reached 10-year highs during 2020.

The other illegal drugs that contributed to more overdose deaths in 2020 than in any previous year were new psychoactive substances (NPS). NPS are drugs primarily accessed via unregulated drug markets and used in non-clinical settings for their psychoactive effects. Some NPS are specifically designed to mimic the effects of 'classic' illegal drugs such as cannabis, MDMA and cocaine. Others are illegal forms or analogues of drugs approved for clinical purposes, such as benzodiazepines and opioids.

Many NPS are new (or novel) in a literal sense: they have only appeared in drug markets in recent years or months or even weeks. Any particular NPS may be available only for a short time before it is replaced by others. The ever-increasing range of NPS is in a sense a defining feature; the European Monitoring Centre for Drugs and Drug Addiction (which tracks what is being sold in European drug markets) was monitoring over 800 NPS by 2020.[7]

Given the rapid proliferation of NPS circulating in drug markets, the effects of many NPS (including their toxic effects in humans) have not been well studied, and forensic toxicologists and pathologists may not have a solid scientific basis to conclude that a particular NPS caused or contributed to a death under investigation. Therefore, the practice for coding NPS contribution in the overdose deaths register is somewhat different than for other drugs: NPS are coded as relevant drugs if they are identified to be potential contributors to death, rather than probable or confirmed contributors.

Table 10 shows the annual frequency of Victorian overdose deaths involving NPS, disaggregated by the main categories to which the NPS belonged. There are several different classification systems for NPS, so to assist those who may use other classifications, the following are the specific NPS underpinning each category in table 10:

- **Benzodiazepines**: clonazolam, delorazepam, diclazepam, etizolam, flualprazolam, flubromazolam, lormetazepam.

7 European Monitoring Centre for Drugs and Drug Addiction, *European Drug Report: Trends and Developments*, Luxembourg: Publications Office of the European Union, 2021, p.26.

- **Cannabinoids**: 5F-Cumyl-P7AICA, 5F- Cumyl-PINACA, 5F-MDMB-PICA, AB-CHMINACA, Cumyl-PeGACLONE, WIN55212-2.
- **Dissociatives**: 2-fluorodeschloroketamine, benzylpiperazine.
- **Empathogens**: 6-APB, ethylone, eutylone.
- **Opioids**: butyl fentanyl, ocfentanil.
- **Psychedelics**: 25C-NBOMe, 5-MeO-DMT.
- **Stimulants**: 4-fluoroamphetamine, cathinone, methcathinone, n-ethylhexadrone, n-ethylheptedrone, n-ethylpentylone.

Table 10: Annual frequency of NPS-involved overdose deaths by contributing categories, Victoria 2011-2020.

NPS type	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Any NPS	**0**	**0**	**3**	**0**	**2**	**8**	**2**	**8**	**17**	**33**
Benzodiazepines	0	0	0	0	1	0	0	1	10	28
Cannabinoids	0	0	0	0	1	0	0	6	6	2
Stimulants	0	0	2	0	0	7	2	0	0	4
Psychedelics	0	0	0	0	0	3	2	0	0	1
Empathogens	0	0	0	0	0	0	0	0	0	5
Dissociatives	0	0	1	0	0	0	0	0	0	2
Opioids	0	0	0	0	0	1	0	0	1	0
Other and unknown	0	0	0	0	0	0	0	1	0	0

One likely explanation for the substantial increase in NPS involvement in Victorian overdose deaths during 2020, is improved NPS detection during forensic medical investigation. The forensic toxicologists at the Victorian Institute of Forensic Medicine continually review and refine their processes and practices, and over time have expanded the range of NPS they detect in general toxicological screening and in targeted testing. A related possibility is that, as the understanding of harms associated with NPS has evolved, forensic pathologists may have become more aware of the potential contribution of NPS in deaths they examine.

Another possible explanation is that the increase in NPS involvement might reflect changes in unregulated drug markets, access to and use of illegal drugs during the pandemic. The increase also in cocaine, GHB and MDMA involvement would be consistent with this. Information from other sources, such as drug use surveys and analyses of drug use equipment and engagement with organisations who work with people who use drugs, would be needed to explore further whether this might be the case.

Whatever the explanation, — whether a rise in NPS-related harms, a rise in detection and documentation of harms, or an interplay between these and other factors, — the data highlights the urgent need for appropriate harm reduction interventions to mitigate the risks associated with NPS use. In recent findings for five deaths involving NPS,[8] Coroner Paresa Spanos recommended two

8 The five findings were published on the CCOV website on 31 March 2021. The first of the five cases chronologically is Spanos P, "Finding into death of Jason with inquest", reference COR 2017 0214, Coroners Court of Victoria, delivered 31 March 2021, <https://www.coronerscourt.vic.gov.au/sites/default/files/2021-04/COR%202017%200214%20-%20Jason.pdf>, accessed 23 June 2021.

such evidence-based interventions: a drug early warning network, to alert people who use drugs to potentially risky NPS substances circulating in unregulated drug markets; and a drug checking service, so people who use drugs can learn about the contents of substances they have obtained from unregulated drug markets. The essential points in the Victorian Department of Health response dated 6 July 2021 were that:

> *While there is no active plan for implementation of a drug checking service, the department continues to consider evidence for additional harm reduction approaches that will prevent further deaths and support improved health and social outcomes for people who use drugs. The department is also exploring opportunities to enhance Victoria's drug monitoring systems to protect public health.*

3.3. Heroin

There was a 12% decrease (from 212 to 187) in Victorian heroin-involved overdose deaths between 2019 and 2020. Figure D shows that this decrease occurred across both Metropolitan Melbourne and Regional Victoria.

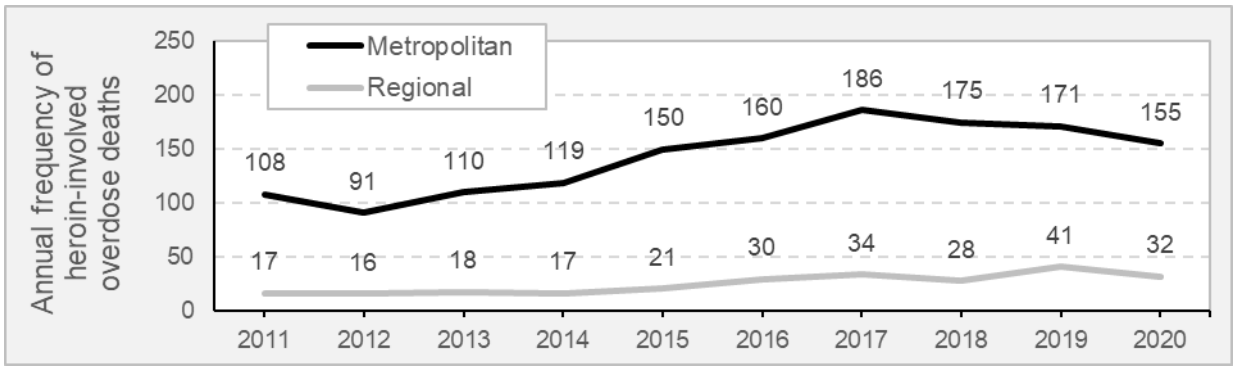


Figure D: Annual frequency of heroin-involved overdose deaths in Metropolitan and regional Victoria, 2011-2020.

Table 11: Annual frequency of heroin-involved overdose deaths in 12 LGAs that were most frequent locations for heroin-involved overdose death, Victoria 2016-2020.

LGA of fatal incident	2016	2017	2018	2019	2020
Yarra	20	16	26	17	9
Brimbank	13	19	10	15	17
Melbourne	7	15	13	10	13
Port Phillip	11	9	18	9	9
Greater Dandenong	11	11	10	14	9
Greater Geelong	12	6	10	12	5
Darebin	9	9	8	7	5
Moreland	4	8	9	8	5
Maribyrnong	5	9	7	5	6
Frankston	4	6	8	9	3
Monash	10	4	3	5	6
Knox	4	6	6	6	4

There is substantial public discussion about the geographical distribution of heroin-related harms in Victoria, primarily driven by the implementation of Victoria's first Medically Supervised Injecting Room (MSIR) in North Richmond and the possible opening of a second MSIR in the Melbourne Central Business District. Table 11 was prepared to inform this discussion. It shows the annual heroin-involved overdose death frequency in the 12 Victorian LGAs that were the most frequent locations for these deaths during the period 2016-2020.

It is noted, however, that heroin-involved overdose deaths taken by themselves are not helpful heuristic for measuring the impact of an MSIR. As Victorian coroners have repeatedly explained, the primary role of an MSIR is not to reduce overdose death (though this is hoped to be a long-term benefit deriving from their operation). An MSIR is a vital public health service because it creates opportunities to engage people who use drugs in wellbeing discussions; to assist them with any medical issues they may be having; to help them connect with housing and Centrelink and other support services they may need; to provide education on safer drug use; and to link them with treatment if they request assistance to manage their drug use.

3.4. Methadone

There were 65 methadone-involved overdose deaths in Victoria in 2020, which was the lowest annual frequency in more than a decade and down from 74 in 2019. This was a very welcome result, because most methadone implicated in Victorian overdose deaths has historically been prescribed and dispensed to treat opioid dependence (rather than to treat pain, which is the other major clinical indication for methadone),[9] and in response to the COVID-19 pandemic some important changes were made to delivery of opioid replacement therapy which potentially could have increased the risks of methadone misuse and associated harms.

The main such change was in opioid replacement therapy patients' access to unsupervised ('takeaway') methadone doses that could be consumed away from the dispensing pharmacy. Before the pandemic, patients were generally restricted to a maximum of four unsupervised methadone doses per week, meaning they needed to attend the pharmacy at least three times per week to consume methadone under supervision.[10] These restrictions were intended to prevent or reduce activities that carry a heightened risk of harm, such as consuming methadone in a manner contrary to clinical direction, or diverting (gifting or selling) the methadone to another person. During the pandemic, to relieve travel requirements associated with regularly attending a pharmacy for methadone, doctors and pharmacists were given discretion to allow the patient to access more unsupervised methadone doses per week if clinically appropriate.[11] There was concern that access to greater quantities of methadone away from the pharmacy might enable more risky activities and lead to more harms including fatal overdoses.[12]

---

9 For data on this see Heffey J, "Inquest into the death of Helen Maree Stagoll," reference COR 2010 1624, Coroners Court of Victoria, delivered 29 October 2013.

10 Department of Health and Human Services, *Policy for maintenance pharmacotherapy for opioid dependence*, 2016, accessed via <https://www2.health.vic.gov.au/public-health/drugs-and-poisons/pharmacotherapy/pharmacotherapy-policy-in-victoria>, accessed 23 June 2021.

11 Department of Health and Human Services, "Coronavirus (COVID-19) Response - Pharmacotherapy services: information for prescribers and dispensers", updated 11 April 2020, accessed at <https://www.dhhs.vic.gov.au/sites/default/files/documents/202006/COVID19-pharmacotherapy-services-information-prescribers-dispensers.pdf>, accessed 23 June 2021.

12 Two other relevant changes were that doctors were permitted to provide methadone scripts for longer than normal periods so a patient would not run out of methadone if they could not secure a clinical

To explore further what might have impacted on methadone-involved overdose death during 2020, the circumstances of each death were examined to establish whether a doctor held a valid permit (issued by the Victorian Department of Health) to prescribe methadone or other Schedule 8 opioids to the deceased proximal to death and, if so, whether the permit was for treatment of opioid dependence or treatment of chronic pain. While there are reasons why a patient might legitimately be prescribed methadone in the absence of a valid permit, the permit status of a person is a generally reliable indicator of whether the methadone used in the fatal incident was dispensed to the deceased (permit held) or diverted (no permit held).

Table 12 shows a sharp decline during 2020 in the frequency and proportion of Victorian methadone-involved overdose deaths where no doctor held a permit to prescribe Schedule 8 opioids. This was in the context of a longer-term downward trend in methadone-involved overdose deaths without permit.

Table 12: Annual frequency of methadone-involved overdose deaths by permit status of deceased, Victoria 2011-2020.

Permit status	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Frequency	**72**	**75**	**70**	**67**	**67**	**72**	**71**	**72**	**74**	**65**
Current permit	32	40	28	45	46	49	45	49	56	57
For ORT	*30*	*37*	*25*	*44*	*41*	*44*	*40*	*46*	*51*	*56*
To treat pain	*2*	*3*	*3*	*1*	*5*	*5*	*5*	*3*	*5*	*1*
No current permit	39	35	41	22	21	23	25	23	18	7
Not known	1	0	1	0	0	0	1	0	0	1
Proportion	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Current permit	44.4	53.3	40.0	67.2	68.7	68.1	63.4	68.1	75.7	87.7
For ORT	*41.7*	*49.3*	*35.7*	*65.7*	*61.2*	*61.1*	*56.3*	*63.9*	*68.9*	*86.2*
To treat pain	*2.8*	*4.0*	*4.3*	*1.5*	*7.5*	*6.9*	*7.0*	*4.2*	*6.8*	*1.5*
No current permit	54.2	46.7	58.6	32.8	31.3	31.9	35.2	31.9	24.3	10.8
Not known	1.4	0.0	1.4	0.0	0.0	0.0	1.4	0.0	0.0	1.5

The finding suggests that during 2020 there may have been a substantial reduction in overdose deaths involving diverted methadone. If this is the case, there may be a wide range of explanations. For example:

- Changes made to delivery of opioid replacement therapy during the pandemic (particularly increased access to unsupervised doses) may have reduced methadone diversion.
- People who formerly used diverted methadone may have been encouraged to engage in formal treatment during the pandemic. This may be related to changes in unregulated drug markets and in the availability of other opioids as the pandemic unfolded.
- The lockdowns and curfews and other interventions put in place to manage the spread of coronavirus may have reduced population movement and therefore opportunities for methadone diversion.
- The SafeScript real-time prescription monitoring system, which records prescribing and dispensing of a range of drugs (including methadone) and enables doctors and pharmacists to

consultation for script renewal in time; and a third party was allowed to pick up methadone from the pharmacy on behalf of a patient in certain circumstances.

access this information to make clinically informed decisions about treatment, may have improved safety of opioid replacement therapy delivery.

Consultation with experts in the alcohol and drug sector, as well as consultation with people who use drugs, may assist to understand better the finding.

3.5. SafeScript

In April 2020, it became mandatory in Victoria to check the SafeScript real-time prescription monitoring system prior to prescribing or dispensing a medicine monitored through the system. Prior to this, SafeScript had been available to Victorian medical practices and pharmacies on a voluntary opt-in basis since October 2018.

The target drugs monitored by SafeScript are known to present an elevated risk of misuse and associated fatal and non-fatal harms; they include most opioids, all benzodiazepines, certain stimulants (dexamphetamine, lisdexamfetamine, methylphenidate), zopiclone, zolpidem, quetiapine and ketamine. Through enabling both prescribers and dispensers to access a patient's history of prescribed medications, the SafeScript system is hoped to address pharmaceutical drug-related issues that cause significant harm, including prescription shopping, sub-optimal coordination of care between clinicians, drug dispensing errors, and drug prescribing that is clearly inconsistent with good clinical practice.

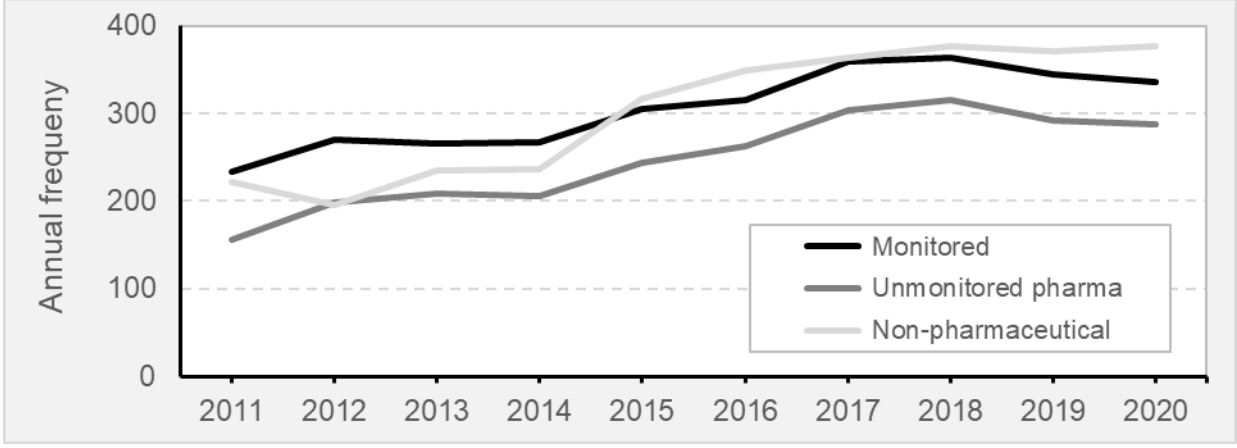


Figure E: Annual frequency of overdose deaths involving drugs monitored by SafeScript, pharmaceutical drugs not monitored by SafeScript, and non-pharmaceutical drugs, Victoria 2011-2020.

Any meaningful evaluation of SafeScript's impact on prescribing, dispensing and drug-related harms will require consultation across multiple sectors, and cross-referencing between a range of data sources. Acknowledging this, the Victorian overdose deaths data was analysed to determine whether it might give any early potential indication of impact. For the analysis, every contributing drug in every overdose death between 2011 and 2020 was classified into one of three groups:

- Monitored drugs, being the target drugs tracked in SafeScript.
- Unmonitored pharmaceutical drugs, being those pharmaceutical drugs not tracked on SafeScript.
- Non-pharmaceutical drugs, being primarily illegal drugs and alcohol.

The annual frequency of Victorian overdose deaths involving monitored drugs, unmonitored pharmaceutical drugs and non-pharmaceutical drugs was then compiled. If a death involved for example both morphine (a monitored drug) and amitriptyline (an unmonitored pharmaceutical), it was counted in both groups for that year.

The results of the analysis are shown in Figure E. For both monitored drugs and unmonitored pharmaceutical drugs, there was a steady increasing trend in the annual number of deaths in which they played a contributory role between 2011 and 2018, then a decline from the 2018 peak in 2019 and a further decline in 2020. By contrast, the annual number of Victorian overdose deaths involving non-pharmaceutical drugs followed an increasing trend across the entire period.

There may be a number of explanations for these findings, but the 2019 and 2020 interruption to the historical increasing trend in overdose deaths involving both monitored and unmonitored pharmaceutical drugs at least coincides with the October 2018 SafeScript implementation, which could cautiously be interpreted as a positive result.

3.6. Pregabalin

Pregabalin is a pharmaceutical drug not monitored in the SafeScript system. Pregabalin misuse and acute toxic effects feature in a substantial number of deaths investigated by Victorian coroners each year, and 2020 was no exception: there were 69 pregabalin-involved overdose deaths last year, the equal highest annual frequency in the past decade. Pregabalin was the fifth most frequent contributing drug to Victorian deaths in 2020 after diazepam, heroin, alcohol and methamphetamine.

For nearly two years Victorian coroners have been calling for the Victorian Department of Health to include pregabalin among the SafeScript target drugs.[13] The 2020 Victorian overdose deaths data provides further support for the coroners' position on this issue.

13 For the most recent findings see Bracken D, "Finding into death of Sharni Dee Connolly without inquest," reference COR 2018 5312, Coroners Court of Victoria, delivered 1 May 2021.

Attachment A

Annual frequency of overdose deaths by local government area of fatal incident, Victoria 2011-2021.

Local government area	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Alpine	-	-	-	-	1	-	-	1	-	-
Ararat	1	1	-	1	1	-	3	2	2	1
Ballarat	9	3	4	7	1	6	12	7	14	10
Banyule	8	6	6	9	8	12	9	5	14	9
Bass Coast	2	1	3	2	3	6	5	4	7	4
Baw Baw	3	7	3	3	3	4	5	3	2	4
Bayside	6	3	6	5	3	8	6	12	8	14
Benalla	1	-	-	1	1	1	1	-	-	1
Boroondara	8	9	11	4	15	8	8	6	10	10
Brimbank	15	10	19	17	17	15	24	16	22	28
Buloke	-	-	-	1	-	1	1	1	-	-
Campaspe	1	3	2	2	2	4	3	2	3	6
Cardinia	5	4	3	9	2	8	5	5	7	7
Casey	6	10	5	12	15	9	19	10	18	18
Central Goldfields	1	1	-	2	1	2	2	2	1	2
Colac Otway	-	-	1	4	1	2	-	-	-	1
Corangamite	2	-	-	-	1	-	1	2	2	-
Darebin	10	8	11	16	15	18	17	13	14	14
East Gippsland	1	2	1	2	2	4	3	2	6	6
Frankston	13	15	12	17	24	20	17	26	21	17
Gannawarra	1	-	-	-	1	-	-	-	-	-
Glen Eira	6	5	10	4	7	5	12	7	8	9
Glenelg	3	5	2	1	7	2	2	2	1	1
Golden Plains	1	1	-	2	3	1	-	2	-	1
Greater Bendigo	8	10	9	7	13	6	17	13	9	10
Greater Dandenong	12	16	11	8	16	16	19	17	24	18
Greater Geelong	19	19	20	17	13	20	23	26	23	21
Greater Shepparton	4	6	8	4	11	5	3	7	7	7
Hepburn	1	1	1	1	1	-	3	1	-	-
Hindmarsh	-	-	-	-	-	-	-	-	1	-
Hobsons Bay	4	10	4	7	3	5	7	7	6	8
Horsham	4	1	-	-	-	3	1	-	1	1
Hume	5	10	11	5	10	11	10	11	13	7
Indigo	-	1	1	1	1	2	1	1	3	-

(Continued over page)

(Continued from previous page)

Local government area	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Kingston	5	7	5	6	6	5	16	9	8	10
Knox	14	6	15	8	11	7	15	17	15	12
Latrobe	4	7	10	10	4	10	8	12	6	12
Loddon	-	-	-	1	2	1	1	1	-	-
Macedon Ranges	1	1	3	3	1	2	-	3	5	2
Manningham	3	3	4	1	8	4	3	8	4	4
Mansfield	1	1	2	-	-	-	1	1	2	2
Maribyrnong	10	11	4	12	15	6	14	12	10	12
Maroondah	10	4	7	6	10	13	8	7	15	4
Melbourne	20	20	15	23	24	22	25	25	19	23
Melton	-	5	3	6	5	12	9	10	14	13
Mildura	4	4	7	3	4	4	5	7	4	10
Mitchell	1	3	4	4	2	3	2	2	2	4
Moira	2	2	1	-	3	2	4	1	4	1
Monash	14	4	7	10	6	20	9	10	11	16
Moonee Valley	4	3	4	9	3	12	8	8	7	12
Moorabool	2	1	2	1	1	3	2	5	1	2
Moreland	11	12	3	10	9	17	13	23	13	13
Mornington Peninsula	12	11	21	5	14	16	12	11	9	13
Mount Alexander	-	1	1	1	-	1	-	3	3	2
Moyne	-	1	-	1	1	1	-	1	-	-
Murrindindi	-	1	1	-	3	1	1	2	2	3
Nillumbik	-	3	-	1	5	4	3	3	3	3
Northern Grampians	2	-	3	-	1	-	-	1	1	1
Port Phillip	14	16	15	19	23	21	22	32	15	25
Pyrenees	-	2	-	1	-	-	1	1	-	-
Queenscliffe	1	1	-	-	-	-	-	-	-	2
South Gippsland	2	1	3	1	2	2	2	1	3	1
Southern Grampians	-	-	-	-	-	1	2	2	-	1
Stonnington	11	5	8	3	5	7	12	10	4	12
Strathbogie	-	-	1	-	2	-	-	-	1	1
Surf Coast	-	1	1	1	-	2	1	3	4	3
Swan Hill	-	1	1	1	1	1	1	1	2	1
Towong	1	-	1	-	-	1	1	2	-	1
Wangaratta	-	2	2	2	1	5	3	4	3	6
Warrnambool	-	2	1	2	3	2	3	4	1	2
Wellington	1	2	-	2	6	2	5	4	2	4

(Continued over page)

(Continued from previous page)

Local government area	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
West Wimmera	-	-	-	-	1	2	-	-	1	1
Whitehorse	7	13	11	10	18	12	16	10	9	9
Whittlesea	3	4	8	10	7	10	8	3	12	12
Wodonga	1	3	5	4	3	4	3	9	1	-
Wyndham	4	9	11	8	10	12	11	11	13	12
Yarra	26	11	19	22	23	27	20	32	25	17
Yarra Ranges	11	11	7	8	9	11	11	17	12	7
Yarriambiack	-	-	-	1	-	-	-	1	-	-

Attachment B

To explore this in more detail, contributing drugs across all Victorian overdose deaths were classified into three main types, being:

- **Pharmaceutical drugs**, defined as drugs that have approved clinical uses and can be accessed through the health system in Australia.
- **Illegal drugs**, defined as drugs that are prohibited from manufacture, sale or possession in Australia.
- **Alcohol.**

While most contributing drugs fitted within this classification system, a small number could have been both pharmaceutical and illegal. These included:

- **Ketamine**, which is approved for anaesthesia and (less commonly) to manage symptoms of opioid withdrawal, but is also illegally imported and sold in unregulated drug markets. Ketamine was classified as a pharmaceutical drug because it can be obtained legally in Australia, while recognising that in many cases it was probably not sourced via the health system.
- **Amphetamines**, which are approved for treatment of conditions such as narcolepsy and attention deficit disorders but are also illegally imported and sold in unregulated drug markets. These presented a substantial challenge. The following approach was adopted:

    a. Amphetamine that contributed in the absence of methamphetamine detection was classified as a pharmaceutical drug. The reason was, in most cases where the amphetamine source was identified, it was a pharmaceutical preparation such as dexamphetamine or lisdexamfetamine.

    b. Methamphetamine was classified as an illegal drug. A review of Victorian overdose deaths identified no instances where it was clearly prescribed.

    c. Amphetamine detected in the presence of methamphetamine was assumed to be a metabolite of methamphetamine (rather than present in its own right) unless there was positive evidence of separate pharmaceutical amphetamine consumption.

- **Pentobarbitone**, which is approved for sedation and euthanasia of animals in Australia, and is also distributed for assisted dying in Victoria, but is very often found to have been imported illegally in Victorian deaths. Pentobarbitone was classified as a pharmaceutical drug because it can be obtained legally in Australia, while recognising that (like ketamine) the health system was probably not the source in most Victorian overdose deaths.
- **Etizolam**, which is a legal benzodiazepine in some countries but has no approved clinical use (and therefore is illegal) in Australia. Etizolam was classified as an illegal drug for this reason.
- **Cocaine**, which has clinical uses as well as being a major illegal drug imported into Australia. Cocaine was classified as an illegal drug because there were no clear examples in the Victorian overdose deaths of clinical cocaine being used.