MONASH University

INJURY DEATHS VICTORIA 2017-2019

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CONTENTS

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SUMMARY OF INJURY DEATHS, VICTORIA 2017-2019

ALL AGES

- In the three-year period 2017-2019, 8609 Victorians died as a result of injury. Seventy-two percent of these deaths were unintentional (n=6198, 72.0%), 26.5% were intentional (n=2282: suicide=2116 & homicide=166) and the remaining 1.5% were classified as undetermined intent (n=129).
- The overall average annual injury death rate was 44.4 per 100,000 population.
- Males were overrepresented accounting for 57.0% (n=3532) of unintentional injury deaths, 73.6% (n=1680) of intentional injury deaths and 55.8% (n=72) of undetermined intent injury deaths.
- Three causes: falls (n=3435, 39.9%), suicide (n=2116, 24.6%) and unintentional poisoning (n=1188, 13.8%) combined accounted for approximately three-quarters of injury deaths.

CHILDREN (0-14 YEARS)

- In the period 2017-2019, 71 Victorian children died as a result of injury. More than three-quarters of these deaths were unintentional (n=55, 77.5%) and 22.5% were intentional (n=16).
- The overall average annual injury death rate was 2.0 per 100,000 children.
- Boys were overrepresented among all injury (67.6%) and unintentional injury (67.3%) deaths.
- The annual all injury and unintentional injury death rates were highest among children aged 0-4 years (2.8 & 2.4/100,000 respectively) and lowest among those aged 5-9 years (0.9 & 0.8/100,000 respectively).
- The leading causes of child injury death were transport (43.7%, mainly as car occupants and pedestrians), and suicide (12.7%).

ADOLESCENTS AND YOUNG ADULTS (15-24 YEARS)

- In the period 2017-2019, 522 Victorian adolescents and young adults died as a result of injury. More than half of these deaths were intentional (n=288, 55.2%) and 42.5% were unintentional (n=222).The remaining 2.3% of deaths were of undetermined intent.
- The overall average annual injury death rate was 20.3 per 100,000 adolescents and young adults.
- Males were overrepresented, accounting for 75.7% of unintentional and 72.9% of intentional injury deaths.
- Suicide (52.9%) and transport incidents (27.5%) were the leading causes of injury deaths among adolescents and young adults (n=270 and n=140, respectively).

ADULTS (25-64 YEARS)

- In the period 2017-2019, 3670 Victorian adults died as a result of injury. More than half of these deaths were unintentional (n=1905, 51.9%), 45.1% were intentional (n=1657) and the remaining 2.9% were classified as undetermined intent (n=108).
- The overall average annual injury death rate was 35.7 per 100,000 adults.
- Males were overrepresented accounting for approximately three-quarters of unintentional (74.4%) and intentional (74.5%) injury deaths.
- Suicide accounted for 41.8% of injury deaths (most commonly by hanging). Other common causes of injury death were unintentional poisoning (28.8%) and transport incidents (13.3%, most commonly car occupants).

OLDER ADULTS (65+ YEARS)

- In the period 2017-2019, 4346 Victorian older adults died as a result of injury. Ninety-two percent of these deaths were unintentional (n=4016), and 7.4% were intentional (n=321). Less than one percent of older adult deaths were of undetermined intent (n=9).
- The overall average annual injury death rate was 146.6 per 100,000 older adults.
- Females were slightly overrepresented in unintentional injury deaths (n=2106, 52.4%), while males accounted for 70% of intentional injury deaths (n=225).
- Falls accounted for three-quarters of injury deaths among older persons (n=3258), followed by suicide (n=302, 7.0%) and transport incidents (n=269, 6.2%). A high proportion of the fall deaths were coded to ‘unspecified fall’ (n=2547, 78.2%) but of those with a specified fall mechanism (n=711), more than half were falls on the same level from slipping, tripping or stumbling (n=385, 54.1%).

INTRODUCTION

This E-bulletin provides a detailed overview of Victorian injury deaths in the three-year period 2017-2019: the latest available cause of death data held by the Victorian Injury Surveillance Unit (VISU). The E-bulletin shows trends in injury deaths for the period 2007-2019, although the focus is the latest three-year period.

METHODS

DATA SOURCE

Data have been extracted from the VISU-held Cause of Death (COD) dataset supplied by the Australian Coordinating Registry (ACR) and based on the Australian Bureau of Statistics (ABS) cause of death data.

DATA SELECTION

Inclusions:

- Main section: deaths recorded for Victorian residents with a reference year of 2017-2019, coded according to the WHO International Classification of Diseases 10th revision (ICD-10).
- Trends section: deaths recorded for Victorian residents with a reference year of 2007-2019.
- Deaths must have an ICD-10 underlying cause of death code in the range V00–Y36 (unintentional, intentional and undetermined intent injury deaths).

Exclusions:

- Deaths resulting from medical causes (adverse events and medical misadventure) have been excluded (ICD-10 codes in the range Y40–Y84).
- Deaths for Victorian residents coded as 'undetermined intent' were removed from various analyses for reasons of confidentiality. Deaths of undetermined intent among children (0-14) (<6 deaths over the 3-year period) were excluded from the entire analysis. Similarly, deaths coded as 'undetermined intent' were removed from the analyses in the adolescents and young adult section (15-24 years) (n=12 deaths over the 3-year period), as well as the section describing deaths among older adults (65+ years) (n=9 deaths over the 3-year period).
- When examining trends from 2007-2019 only child 'undetermined intent' deaths were excluded.
- For reasons of confidentiality deaths coded to 'intentional self-harm' were not broken down by age and sex in the section describing child deaths (0-14 years).
- State of residence rather than registration was chosen considering that population rates were to be calculated (see Appendix 2 Table 22 for the influence of this on the data selected). Reference year rather than year of death was chosen, to be consistent with ABS publications of COD data (see Appendix 2 Table 23 for the influence of this on the data selected).
- For the reference year 2019, deaths among Victorian residents were included that had been registered in 2017, 2018 and 2019 but had not previously been provided to the ABS. Inclusion of these additional registrations has resulted in increased counts of deaths by particular causes in 2019 when compared to 2017 and 2018. See Appendix 3 for more details.

DATA ISSUES

To improve the quality of ICD coding, the ABS introduced a revisions process for all coroner certified deaths registered after 1 January 2006. The process means data are preliminary when published for the first time, revised when published the following year and final when published two years after initial publication. For more detailed information regarding the ABS causes of death coding and revisions processes, readers are directed to the ABS website and in particular:

http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/3303.0Technical+Note12012

As a result of the revisions process, the current release of data from the ACR contains final data for the period 2006 to 2017, revised data for 2018 and preliminary data for 2019. Data for the 2006 reference year has not been included in this E-bulletin because the revisions process was different to that of the 2007-2018 reference years.

Data for main analysis covers the 3-year period 2017-2019 and as a result of the revisions process, the numbers for two of the three years are subject to revision and will likely change in future E-bulletin editions. Consequently, only eleven of the thirteen years presented in trend figures are final and statistical analysis of trends has not been conducted. However, trend figures have been provided to give an indication of current trends in Victorian injury deaths. The following symbols have been used throughout this report to distinguish between the data at different stages of the revisions process:

- Frequency (final) (◆)
- Frequency (revised) (◈))
- Frequency (preliminary) (◇)
- Rate (final) (●))
- Rate (revised) (⊕))
- Rate (preliminary) (○)

The age groups used in this E-bulletin (0-14, 15-24, 25-64, 65+ years) have been selected to match those in the *National Injury Prevention and Safety Promotion Plan: 2004 - 2014* (NIPSPP Plan) and will be maintained for consistency.

STATISTICAL ANALYSIS

Age specific rates per 100,000 population have been calculated for all years. The denominators used for calculating rates were June population estimates from the Australian Bureau of Statistics (Source: 3101.0 Australian Demographic Statistics. TABLE 52. Estimated Resident Population by Single Year Of Age, Victoria). Age standardisation of the rates was considered unnecessary for the purpose of this report, as the shifts in the Victorian age distribution over the period 2007-2019 were minor (Appendix 2, Figure 26). Age-group specific rates are presented throughout this report. Where direct comparisons between groups are made, differences in rate have been tested using chi-square tests (results not shown); P-values of <0.05 were considered statistically significant.

ALL AGES

An overview of injury deaths in Victoria over the 3-year period 2017-2019 is provided in Appendix 1 (Table 20). Due to the preliminary/revised nature of the 2018 & 2019 data held by VISU, the most recent three years of data will be presented in this E-bulletin. Any differences between these three years as presented in Table 20 (Appendix 1) should be interpreted with caution: these can be indicative of an underlying trend in injury deaths, an artefact of the step-wise data revisions process, or both. However, overall injury intent proportions did not differ significantly between the year that is final (2017), that which is revised (2018) and the year that is preliminary (2019), with more than 70% of deaths being unintentional in all years of the period (72.6% in 2017, 72.8% in 2018 and 71.0% in 2019); more than a quarter being intentional (26.3% in 2017, 25.5% in 2018 and 27.3% in 2019); and less than 2% coded as undetermined (1.1% in 2017, 1.6% in 2018 and 1.7% in 2019); (chi-square test p=0.11). Overall, males accounted for sixty-one percent of injury deaths (n=5284, 61.4%). Around one quarter of injury deaths were due to suicide (24.6%): 2116 Victorians died by suicide in the period 2017-2019.

Overall, there were 8609 injury deaths recorded for Victoria over the period 2017-2019: an average annual rate of 44.4 deaths per 100,000 Victorians (Table 1).

- All intents annual injury death rates were highest in older adults (146.6 per 100,000 older adults) and lowest in children (2.0 per 100,000 children).
- The all ages unintentional annual injury death rate was 32.0 per 100,000 Victorians; rates were highest in older adults (135.5 per 100,000 older adults) and lowest in children (1.5 per 100,000 children).
- The all ages intentional annual injury death rate was 11.8 per 100,000 Victorians (comprising a 10.9/100,000 suicide rate and a 0.9/100,000 homicide rate). Intentional death rates were highest in adults (16.1 per 100,000 adults) and lowest in children (0.5 per 100,000 children). Suicide and homicide rates both followed this age pattern.The all ages undetermined intent annual injury death rate was 0.7 per 100,000 Victorians.

Over the period 2017-2019, the male average annual age-specific unintentional injury death rate was higher than the female rate in all 5-year age groups. Overall, rates rose after childhood, were fairly stable to age 65 years before increasing dramatically and peaking in the oldest adults (Figure 1).

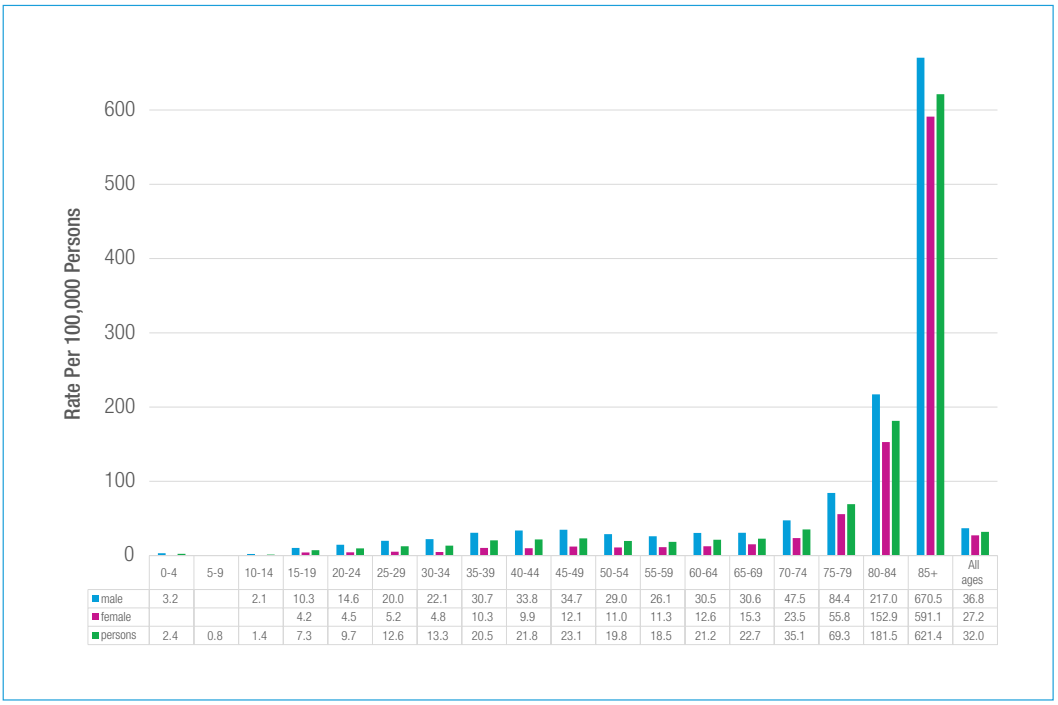
Over the period 2017-2019, the male average annual age-specific intentional injury death rate was higher than the female rate in all 5-year age bands (**where rates could be calculated n=10 or more**). Age-specific intentional injury death rates were lowest in children aged 10-14 years (0-4 years and 5-9 years suppressed in figure) and were highest in adults aged 40-44 years and 45-49 years (Figure 2).

TABLE 1: FREQUENCY AND AVERAGE ANNUAL RATES OF INJURY DEATHS BY INTENT AND BROAD AGE GROUPS, VICTORIA 2017-2019

	CHILDREN (0-14 YEARS)		ADOLESCENTS AND YOUNG ADULTS (15-24 YEARS)		ADULTS (25-64 YEARS)		OLDER ADULTS (65+ YEARS)		ALL AGES	
	n	RATE PER 100,000	n	RATE PER 100,000	n	RATE PER 100,000	n	RATE PER 100,000	n	RATE PER 100,000
Unintentional	55	1.5	222	8.6	1905	18.5	4016	135.5	6198	32.0
Intentional	16	0.5	288	11.2	1657	16.1	321	10.8	2282	11.8
Suicide	9	**	270	10.5	1535	14.9	302	10.2	2116	10.9
Homicide	7	**	18	0.7	122	1.2	19	0.6	166	0.9
Undetermined intent	NA	NA	12	0.5	108	1.0	9	**	129	0.7
Total	71	2.0	522	20.3	3670	35.7	4346	146.6	8609	44.4

*Note: Rates based on frequency less than 10 have been suppressed with "**".*
NA=Deaths among children coded to 'undetermined intent' were deleted from the entire analysis (see methods section).

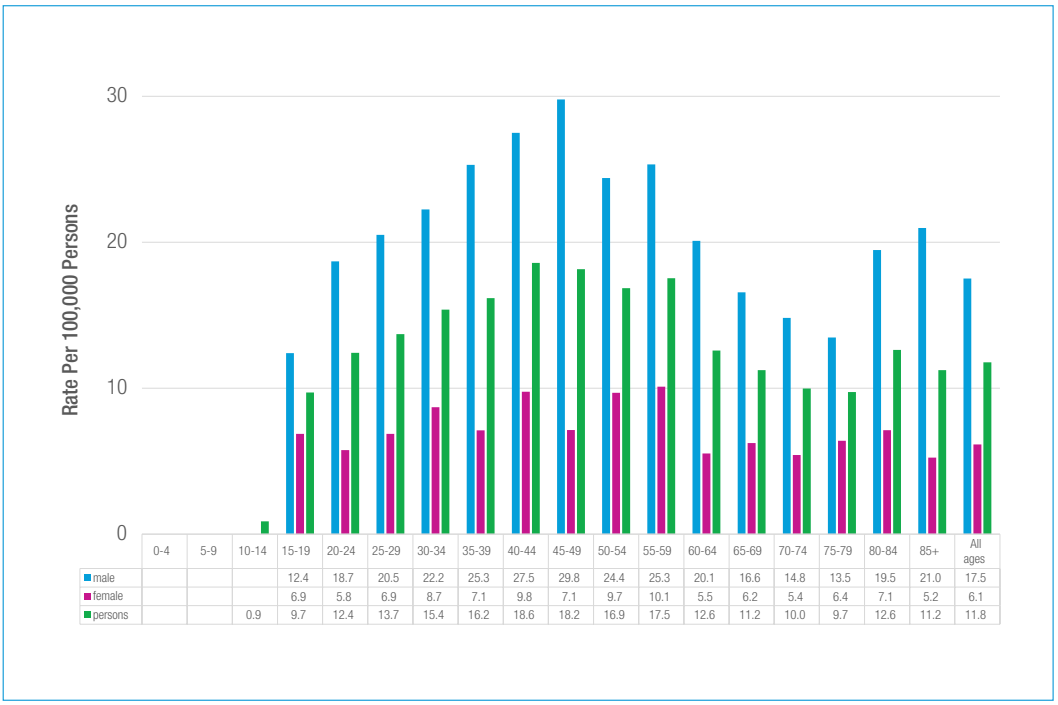
FIGURE 1: AVERAGE ANNUAL UNINTENTIONAL INJURY DEATH RATES BY AGE GROUP AND GENDER, VICTORIA 2017-2019



	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+	All ages
male	3.2		2.1	10.3	14.6	20.0	22.1	30.7	33.8	34.7	29.0	26.1	30.5	30.6	47.5	84.4	217.0	670.5	36.8
female				4.2	4.5	5.2	4.8	10.3	9.9	12.1	11.0	11.3	12.6	15.3	23.5	55.8	152.9	591.1	27.2
persons	2.4	0.8	1.4	7.3	9.7	12.6	13.3	20.5	21.8	23.1	19.8	18.5	21.2	22.7	35.1	69.3	181.5	621.4	32.0

Note: Rates based on frequency less than 10 have been suppressed (appear as blank cells)

FIGURE 2: AVERAGE ANNUAL INTENTIONAL INJURY DEATH RATES BY AGE GROUP AND GENDER, VICTORIA 2017-2019



	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+	All ages
male				12.4	18.7	20.5	22.2	25.3	27.5	29.8	24.4	25.3	20.1	16.6	14.8	13.5	19.5	21.0	17.5
female				6.9	5.8	6.9	8.7	7.1	9.8	7.1	9.7	10.1	5.5	6.2	5.4	6.4	7.1	5.2	6.1
persons			0.9	9.7	12.4	13.7	15.4	16.2	18.6	18.2	16.9	17.5	12.6	11.2	10.0	9.7	12.6	11.2	11.8

Note: Rates based on frequency less than 10 have been suppressed (appear as blank cells)

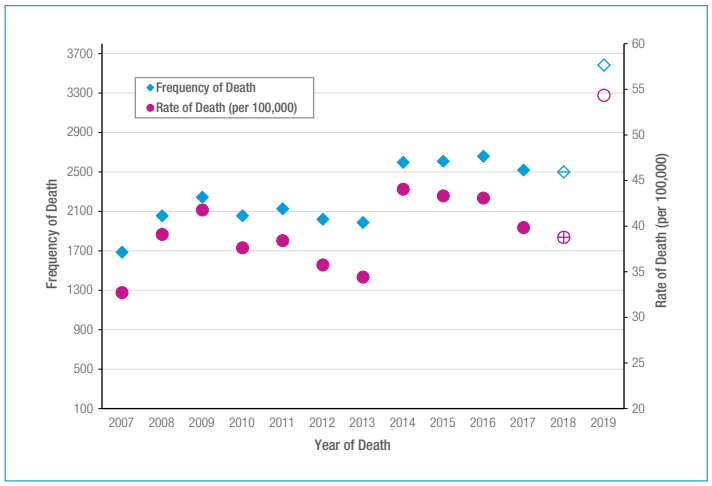
TREND IN INJURY DEATHS (2007-2019)

Data presented for the years 2018-2019 are not final and subject to revision (see page 2 for more information). Consequently, statistical analysis of trends has not been conducted but figures have been provided here to give an indication of current trends in Victorian injury deaths.

For the reference year 2019, deaths among Victorian residents were included that had been registered in 2017, 2018 and 2019 *but had not previously been provided to the ABS.* Inclusion of these additional registrations has resulted in increased counts of deaths by particular causes in 2019 when compared to 2017 and 2018. See Appendix 3 for more details.

ALL INTENTS INJURY DEATHS

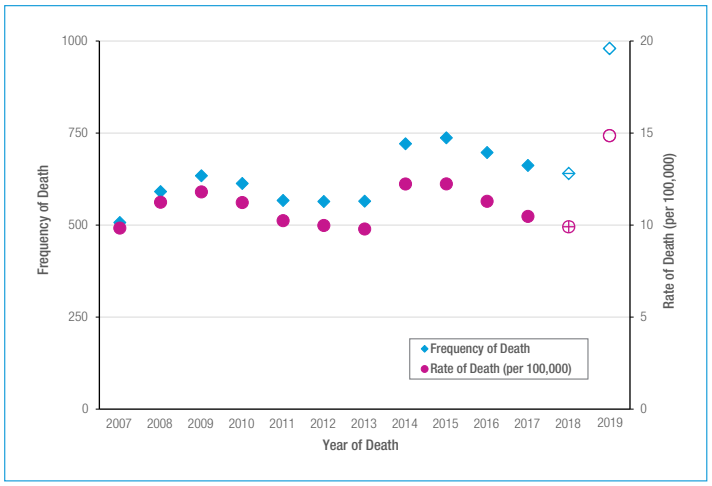
FIGURE 3: TREND IN FREQUENCY AND ANNUAL RATE OF ALL INJURY DEATHS, VICTORIA 2007-2019



Note: An increase in deaths for the 2019 reference year is due to inclusion of deaths that had been registered in 2017, 2018 and 2019. See Appendix 3 for more details.

INTENTIONAL INJURY DEATHS

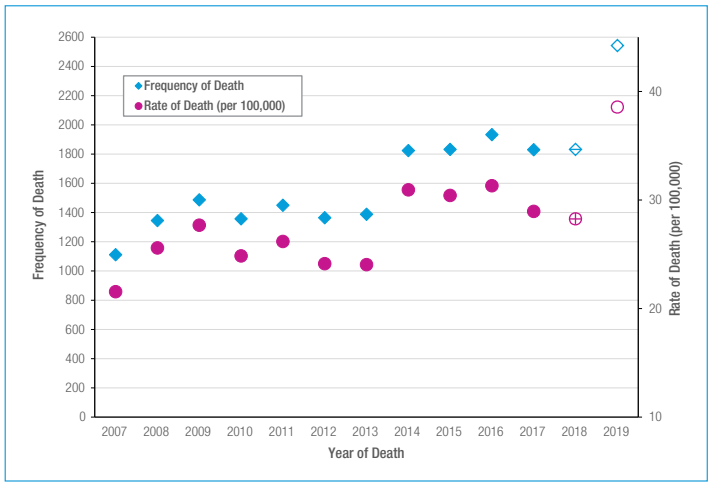
FIGURE 5: TREND IN FREQUENCY AND ANNUAL RATE OF INTENTIONAL INJURY DEATHS, VICTORIA 2007-2019



Note: An increase in deaths for the 2019 reference year is due to inclusion of deaths that had been registered in 2017, 2018 and 2019. See Appendix 3 for more details.

UNINTENTIONAL INJURY DEATHS

FIGURE 4: TREND IN FREQUENCY AND ANNUAL RATE OF UNINTENTIONAL INJURY DEATHS, VICTORIA 2007-2019



Note: An increase in deaths for the 2019 reference year is due to inclusion of deaths that had been registered in 2017, 2018 and 2019. See Appendix 3 for more details.

UNDETERMINED INTENT INJURY DEATHS

FIGURE 6: TREND IN FREQUENCY AND ANNUAL RATE OF UNDETERMINED INTENT INJURY DEATHS, VICTORIA 2007-2019

Note: Undetermined intent injury deaths among children aged 0-14 were excluded from the analysis. An increase in deaths for the 2019 reference year is due to inclusion of deaths that had been registered in 2017, 2018 and 2019. See Appendix 3 for more details.

◆	Frequency (final)	●	Rate (final)
◈	Frequency (revised)	⊕	Rate (revised)
◇	Frequency (preliminary)	○	Rate (preliminary)

PATTERN OF INJURY DEATHS (2017-2019)

GENDER DISTRIBUTION

- Males were overrepresented, accounting for 57.0% of unintentional injury deaths (n=3532), 73.6% of intentional injury deaths (n=1680) and 55.8% of undetermined intent injury deaths (n=72) in Victoria over the period 2017-2019 (Table 2).
- The average annual male injury death rate was 1.6 times higher than the female death rate (55.1/100,000 vs. 34.0/100,000). Men's higher death rates were observed in unintentional, intentional and undetermined intent deaths (by 1.3 times, 2.8 times and 1.3 times, respectively) (Table 2).

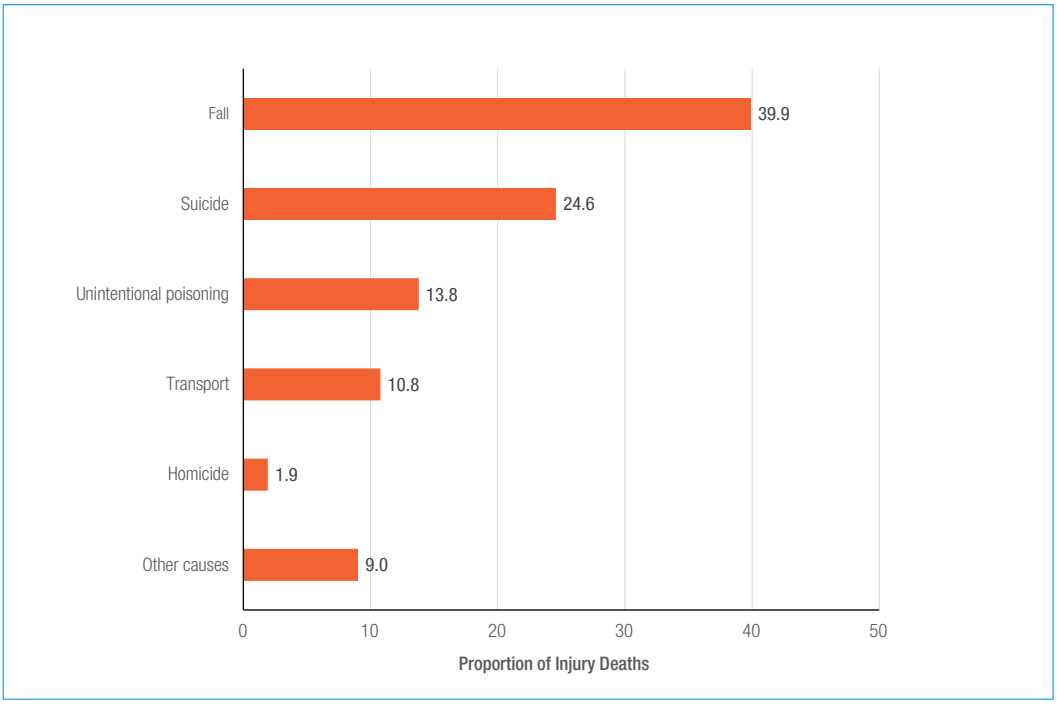
AGE DISTRIBUTION

- Persons aged 65 years and older had the highest annual all injury (146.6/100,000) and unintentional injury death rates (135.5/100,000) whereas children aged 0-14 years had the lowest (2.0 and 1.5/100,000, respectively) (Table 3).
- Adults aged 25-64 years had the highest intentional (16.1/100,000) death rate and children aged 0-14 years had the lowest intentional annual injury death rate (0.5/100,000) (Table 3).

LEADING CAUSES OF INJURY DEATHS

- Figure 7 shows the leading causes of injury deaths. Falls (n=3435, 39.9%), suicide (n=2116, 24.6%) and unintentional poisoning (n=1188, 13.8%) accounted for approximately three-quarters of all injury deaths and transport for a further 10.8% (n=928).
- For more detail on causes of injury deaths see Appendix 1 Table 20.

FIGURE 7: LEADING CAUSES OF INJURY DEATHS, VICTORIA 2017-2019 (N=8609)



Note: The cause categories "other specified unintentional", "unspecified unintentional" and "undetermined intent" were included in the "other causes" category

TABLE 2: FREQUENCY AND AVERAGE ANNUAL RATE OF INJURY DEATHS BY INTENT AND GENDER, VICTORIA 2017-2019

	UNINTENTIONAL			INTENTIONAL			UNDETERMINED INTENT			ALL		
	n	%	RATE PER 100,000	n	%	RATE PER 100,000	n	%	RATE PER 100,000	n	%	RATE PER 100,000
Male	3532	57.0	36.8	1680	73.6	17.5	72	55.8	0.8	5284	61.4	55.1
Female	2666	43.0	27.2	602	26.4	6.2	57	44.2	0.6	3325	38.6	34.0
Persons	6198	100	32.0	2282	100	11.8	129	100	0.7	8609	100	44.4

Note: Child deaths coded to 'undetermined intent' were deleted from the entire analysis (see methods section)

TABLE 3: FREQUENCY AND AVERAGE ANNUAL RATE OF INJURY DEATHS BY INTENT AND AGE GROUP, VICTORIA 2017-2019

	UNINTENTIONAL			INTENTIONAL			UNDETERMINED INTENT			ALL		
	n	%	RATE PER 100,000	n	%	RATE PER 100,000	n	%	RATE PER 100,000	n	%	RATE PER 100,000
0-14	55	0.9	1.5	16	0.7	0.5	NA	NA	NA	71	0.8	2.0
15-24	222	3.6	8.6	288	12.6	11.2	12	9.3	0.5	522	6.1	20.3
25-64	1905	30.7	18.5	1657	72.6	16.1	108	83.7	1.0	3670	42.6	35.7
65+	4016	64.8	135.5	321	14.1	10.8	9	7.0	**	4346	50.5	146.6
All ages	6198	100	32.0	2282	100.0	11.8	129	100.0	0.7	8609	100.0	44.4

Note: NA=child deaths coded to 'undetermined intent' were deleted from the entire analysis (see methods section)

LEADING CAUSES IN MORE DETAIL

- A high proportion of fall deaths were coded to 'unspecified fall' (n=2624, 76.4%). Of those with a specified fall mechanism (n=811), just over half were falls on the same level from slipping, tripping or stumbling (n=417, 51.4%) (Table 4).

TABLE 4: UNINTENTIONAL FALL INJURY DEATHS, VICTORIA 2017-2019

DETAILED CAUSE	n	%
Same level: slipping, tripping, stumbling	417	12.1
Involving bed	115	3.3
On and from stairs and steps	82	2.4
Involving chair	44	1.3
Other fall on same level	34	1.0
From, out of or through building or structure	28	0.8
On and from ladder	28	0.8
Involving wheelchair	27	0.8
Other fall from one level to another	16	0.5
Other specified fall	20	0.6
Unspecified fall	2624	76.4
All falls	3435	100

- Hanging was the most common method of suicide (n=1158, 54.7%), followed by poisoning by pharmaceuticals (n=315, 14.9%) or another substance (n=144, 6.8%) (Table 5).

TABLE 5: SUICIDES, VICTORIA 2017-2019

DETAILED CAUSE	n	%
Hanging, strangulation & suffocation	1158	54.7
Poisoning- pharmaceuticals	315	14.9
Poisoning other substances	144	6.8
Jumping or lying before moving object	132	6.2
Firearms	110	5.2
Jumping from a high place	90	4.3
Sharp object	53	2.5
Crashing of motor-vehicle	36	1.7
Drowning & submersion	36	1.7
Smoke, fire & flames	22	1.0
Other specified means	9	0.4
Unspecified means	11	0.5
All suicides	2116	100

- Narcotics & psychodysleptics (hallucinogens) were the most common specific agents involved in unintentional poisoning deaths (n=204, 17.2%) (Table 6).

TABLE 6: UNINTENTIONAL POISONING DEATHS, VICTORIA 2017-2019

DETAILED CAUSE	n	%
Narcotics & psychodysleptics {hallucinogens} not elsewhere classified	204	17.2
Antiepileptic, sedative-hypnotic, antiparkinsonism & psychotropic drugs, not elsewhere classified	106	8.9
Alcohol	92	7.7
Nonopioid analgesics, antipyretics & antirheumatics	10	0.8
Other specified poisonings	8	0.7
Other & unspecified drugs, medicaments & biological subs	768	64.6
All poisonings	1188	100

- Unintentional transport deaths mostly involved car occupants (n=491, 52.9%), pedestrians (n=151, 16.3%) or motorcycle riders (n=149, 16.1%) (Table 7).

TABLE 7: UNINTENTIONAL TRANSPORT DEATHS, VICTORIA 2017-2019

DETAILED CAUSE	n	%
Car occupant injured in transport incident	491	52.9
Pedestrian injured in transport incident	151	16.3
Motorcycle rider injured in transport incident	149	16.1
Other land transport incident	36	3.9
Pedal cyclist injured in transport incident	33	3.6
Water transport incident	20	2.2
Occupant of heavy transport vehicle	18	1.9
Air and space transport incident	18	1.9
Other specified transport incident	12	1.3
All transport deaths	928	100

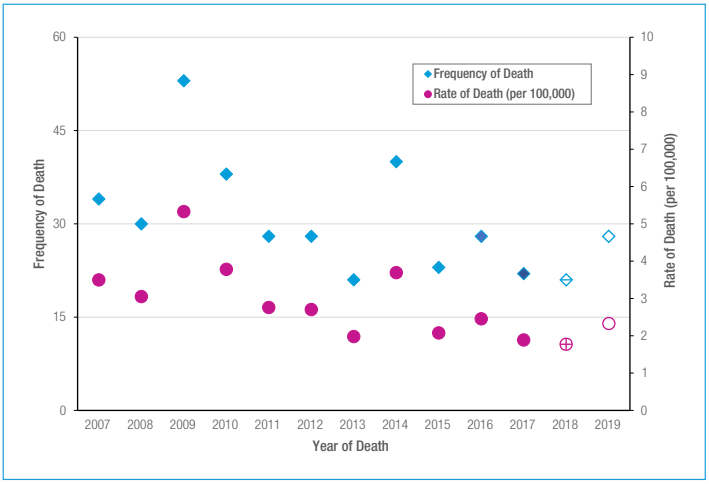
CHILDREN (0-14 YEARS)

TREND IN INJURY DEATHS (2007-2019)

Data presented for the years 2018-2019 are not final and subject to revision (see page 2 for more information). Consequently, statistical analysis of trends has not been conducted but figures have been provided here to give an indication of current trends in Victorian child injury deaths. Trend figures are presented for all injury and unintentional injury deaths only, due to there being less than six intentional deaths among children for most years of the thirteen-year period. (Note: undetermined intent child deaths have been excluded from the entire analysis for reasons of confidentiality).

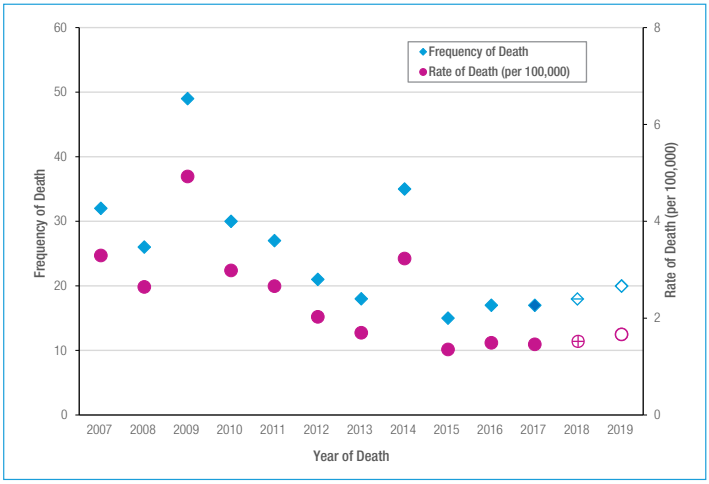
ALL INTENTS INJURY DEATHS

FIGURE 8: TREND IN FREQUENCY AND ANNUAL RATE OF CHILD INJURY DEATHS, VICTORIA 2007-2019



UNINTENTIONAL INJURY DEATHS

FIGURE 9: TREND IN FREQUENCY AND ANNUAL RATE OF CHILD UNINTENTIONAL INJURY DEATHS, VICTORIA 2007-2019



◆ Frequency (final)
◇ Frequency (revised)
◇ Frequency (preliminary)
● Rate (final)
⊕ Rate (revised)
○ Rate (preliminary)

PATTERN OF INJURY DEATHS (2017-2019)

In the period 2017-2019, 71 Victorian children died as a result of injury. More than three quarters of these deaths were unintentional (n=55, 77.5%). There were sixteen intentional deaths among children during the three-year period. Child deaths coded to intentional are not broken down by age and sex in this section for reasons of confidentiality.

GENDER DISTRIBUTION

- Boys were overrepresented among all injury (n=48, 67.6%), and unintentional injury deaths (n=37, 67.3%).
- The annual all injury and unintentional injury death rates were also higher for boys than girls (2.6 & 2.0/100,000 vs. 1.3 & 1.0/100,000 respectively).

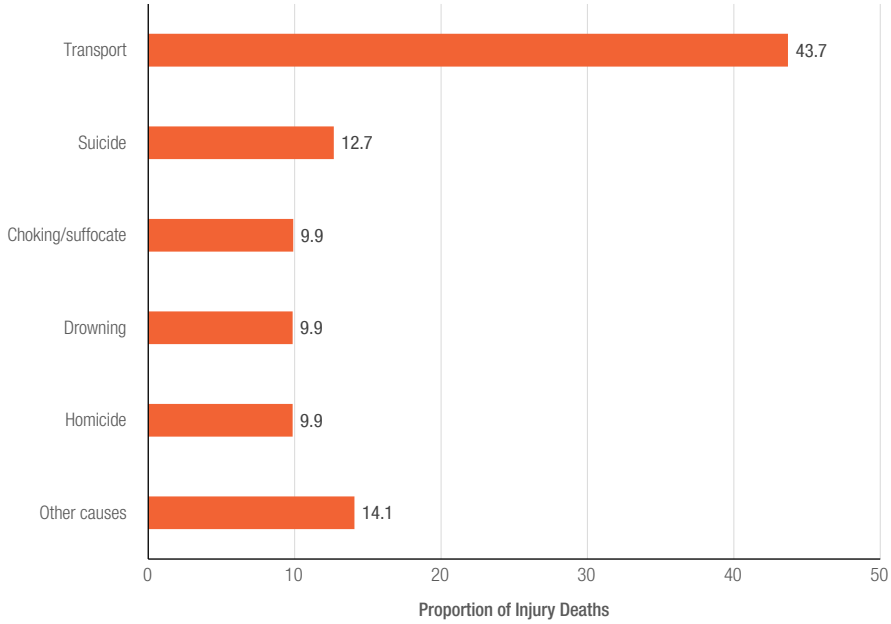
AGE DISTRIBUTION

- The annual all injury and unintentional injury death rates were highest for children aged 0-4 years (2.8 & 2.4/100,000 respectively). This was followed by 10-14 year olds for whom annual all injury and unintentional death rates were 2.3 and 1.4/100,000 respectively). The lowest annual all injury and unintentional death rates were among children aged 5-9 years (0.9 & 0.8/100,000 respectively).

LEADING CAUSES OF CHILD INJURY DEATHS

- Figure 10 shows the leading causes of child injury deaths. Transport accounted for 43.7% of injury deaths (n=31) followed by suicide (n=9, 12.7%).
- Child transport deaths mainly involved car occupants (n=12) and pedestrians (n=12).
- For more detail on causes of injury deaths see Appendix 1 Table 21.

FIGURE 10: LEADING CAUSES OF CHILD INJURY DEATHS, VICTORIA 2017-2019 (N=71)



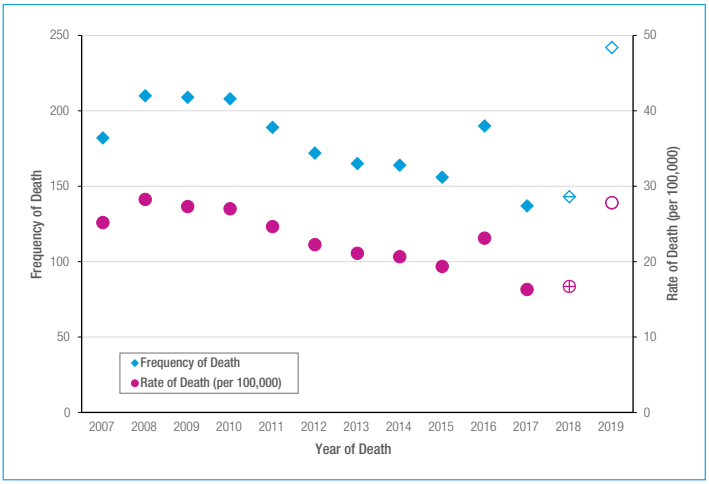
ADOLESCENTS AND YOUNG ADULTS (15-24 YEARS)

TREND IN INJURY DEATHS (2007-2019)

Data presented for the years 2018-2019 are not final and subject to revision (see page 2 for more information). Consequently, statistical analysis of trends has not been conducted but figures have been provided here to give an indication of current trends in Victorian injury deaths among adolescents and young adults.

ALL INTENTS INJURY DEATHS

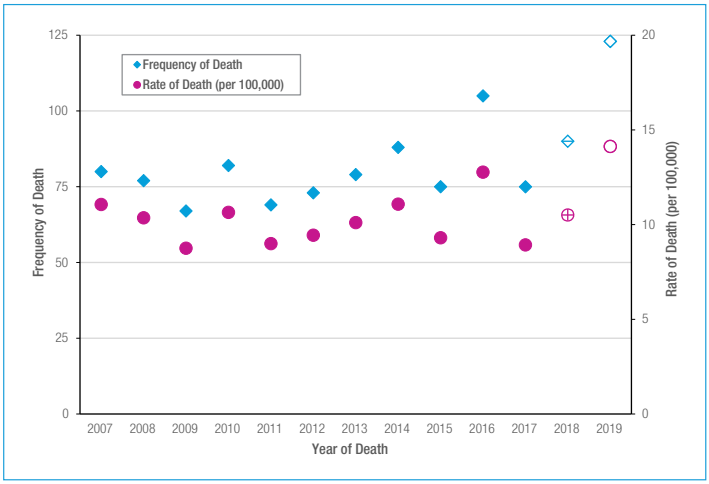
FIGURE 11: TREND IN FREQUENCY AND ANNUAL RATE OF ADOLESCENT AND YOUNG ADULT INJURY DEATHS, VICTORIA 2007-2019



Note: An increase in deaths for the 2019 reference year is due to inclusion of deaths that had been registered in 2017, 2018 and 2019. See Appendix 3 for more details.

INTENTIONAL INJURY DEATHS

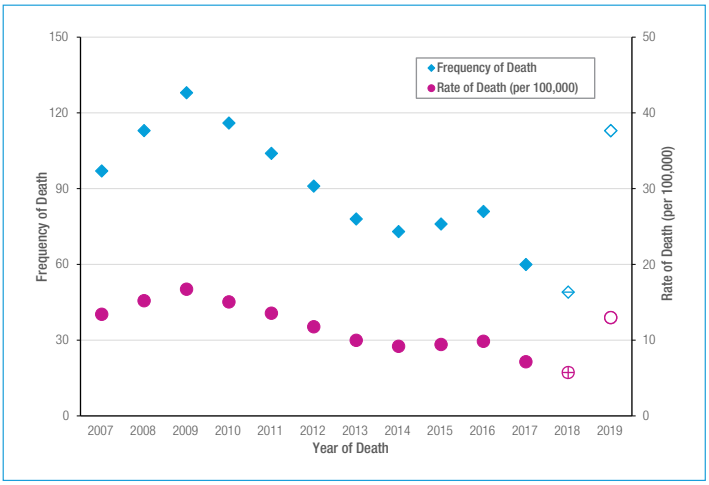
FIGURE 13: TREND IN FREQUENCY AND ANNUAL RATE OF ADOLESCENT AND YOUNG ADULT INTENTIONAL INJURY DEATHS, VICTORIA 2007-2019



Note: An increase in deaths for the 2019 reference year is due to inclusion of deaths that had been registered in 2017, 2018 and 2019. See Appendix 3 for more details.

UNINTENTIONAL INJURY DEATHS

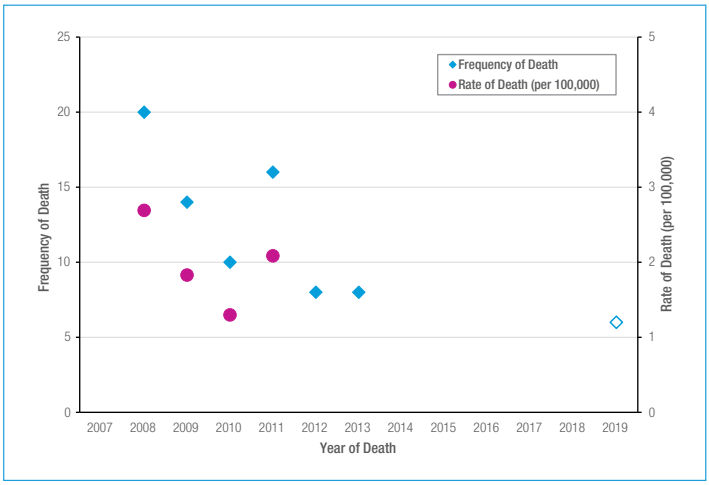
FIGURE 12: TREND IN FREQUENCY AND ANNUAL RATE OF ADOLESCENT AND YOUNG ADULT UNINTENTIONAL INJURY DEATHS, VICTORIA 2007-2019



Note: An increase in deaths for the 2019 reference year is due to inclusion of deaths that had been registered in 2017, 2018 and 2019. See Appendix 3 for more details.

UNDETERMINED INTENT INJURY DEATHS

FIGURE 14: TREND IN FREQUENCY AND ANNUAL RATE OF ADOLESCENT AND YOUNG ADULT UNDETERMINED INTENT INJURY DEATHS, VICTORIA 2007-2019



Note: Frequency of 5 or less and rates based on frequency less than 10 have been suppressed.

◆	Frequency (final)	●	Rate (final)
◈	Frequency (revised)	⊕	Rate (revised)
◇	Frequency (preliminary)	○	Rate (preliminary)

PATTERN OF INJURY DEATHS (2017-2019)

In the period 2017-2019, 510 Victorian adolescents and young adults died as a result of injury. More than half of the deaths were intentional (n=288, 56.5%) and 43.5% were unintentional (n=222) (Table 8). Deaths among adolescents and young adults coded to undetermined intent are not reported in this section for reasons of confidentiality.

GENDER DISTRIBUTION

- Males were overrepresented, accounting for 75.7% of unintentional (n=168) and 72.9% of intentional (n=210) injury deaths among adolescents and young adults (Table 8).
- The corresponding adolescent and young adult unintentional and intentional annual injury death rates were also higher for males than females (12.7 & 15.9/100,000 vs. 4.3 & 6.2/100,000 respectively) (Table 8).

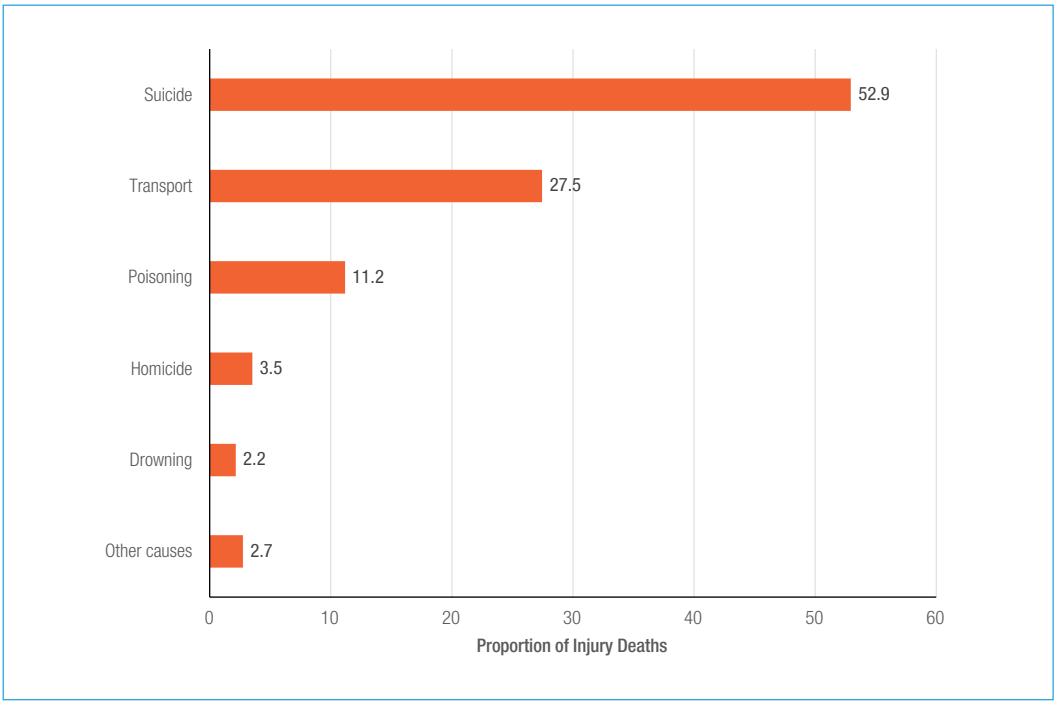
AGE DISTRIBUTION

- Persons aged 20-24 years accounted for 62.2% of all injury deaths (n=317) and 62.6% of unintentional injury deaths (n=139) among adolescents and young adults. Young adults aged 20-24 years accounted for the highest proportion of intentional injury deaths (n=178, 61.8%).
- Intentional annual injury death rates were higher among persons aged 20-24 years than persons aged 15-19 years (12.4/00,000 vs. 9.7/100,000) (Table 9).

LEADING CAUSES OF ADOLESCENT AND YOUNG ADULT DEATH

- Figure 15 shows the leading causes of adolescent and young adult injury deaths. Suicide accounted for 52.9% of injury deaths (n=270), followed by transport incidents (n=140, 27.5%) and unintentional poisoning (n=57, 11.2%).
- For more detail on causes of injury deaths see Appendix 1 Table 21.

FIGURE 15: LEADING CAUSES OF ADOLESCENT AND YOUNG ADULT INJURY DEATHS, VICTORIA 2017-2019 (N=510)



Note: The cause category 'other specified unintentional' was included in the "other causes" category.

TABLE 8: FREQUENCY AND AVERAGE ANNUAL RATE OF ADOLESCENT AND YOUNG ADULT INJURY DEATHS BY INTENT AND GENDER, VICTORIA 2017-2019

	UNINTENTIONAL			INTENTIONAL			ALL*		
	n	%	RATE PER 100,000	n	%	RATE PER 100,000	n	%	RATE PER 100,000
Male	168	75.7	12.7	210	72.9	15.9	378	74.1	28.7
Female	54	24.3	4.3	78	27.1	6.2	132	25.9	10.6
All	222	100.0	8.6	288	100.0	11.2	510	100.0	19.9

*Notes: * Adolescent and young adult deaths coded to 'undetermined intent' were deleted from the analysis (see methods section)*

TABLE 9: FREQUENCY AND AVERAGE ANNUAL RATE OF ADOLESCENT AND YOUNG ADULT INJURY DEATHS BY INTENT AND AGE GROUP, VICTORIA 2017-2019

	UNINTENTIONAL			INTENTIONAL			ALL*		
	n	%	RATE PER 100,000	n	%	RATE PER 100,000	n	%	RATE PER 100,000
15-19	83	37.4	7.3	110	38.2	9.7	193	37.8	17.0
20-24	139	62.6	9.7	178	61.8	12.4	317	62.2	22.1
All	222	100.0	8.6	288	100.0	11.2	510	100.0	19.9

*Notes: * Adolescent and young adult deaths coded to 'undetermined intent' were deleted from the analysis (see methods section)*

LEADING CAUSES IN MORE DETAIL

- Hanging was the most common method of suicide (n=168, 62.2%) (Table 10).

TABLE 10: SUICIDES, VICTORIA 2017-2019

DETAILED CAUSE	n	%
Hanging, strangulation & suffocation	168	62.2
Jumping or lying before moving object	33	12.2
Poisoning- pharmaceuticals	20	7.4
Jumping from a high place	18	6.7
Firearms	9	3.3
Poisoning other substances	8	3.0
Crashing of motor-vehicle	7	2.6
Other specified means	7	2.6
All suicides	270	100

- Unintentional transport deaths mostly involved car occupants (n=100, 71.4%) (Table 11).

TABLE 11: TRANSPORT INJURY DEATHS, VICTORIA 2017-2019

DETAILED CAUSE	n	%
Car occupant	100	71.4
Motorcycle rider	19	13.6
Pedestrian	13	9.3
Other transport	8	5.7
All transport deaths	140	100

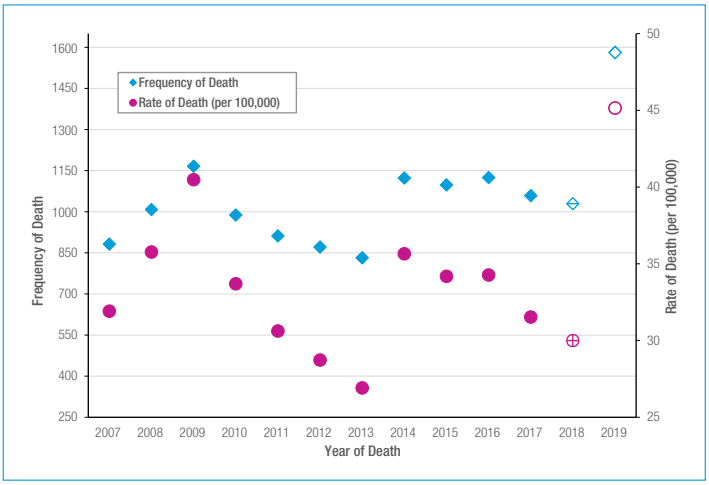
ADULTS (25-64 YEARS)

TREND IN INJURY DEATHS (2007-2019)

Data presented for the years 2018-2019 are not final and subject to revision (see page 2 for more information). Consequently, statistical analysis of trends has not been conducted but figures have been provided here to give an indication of current trends in Victorian adult injury deaths.

ALL INTENTS INJURY DEATHS

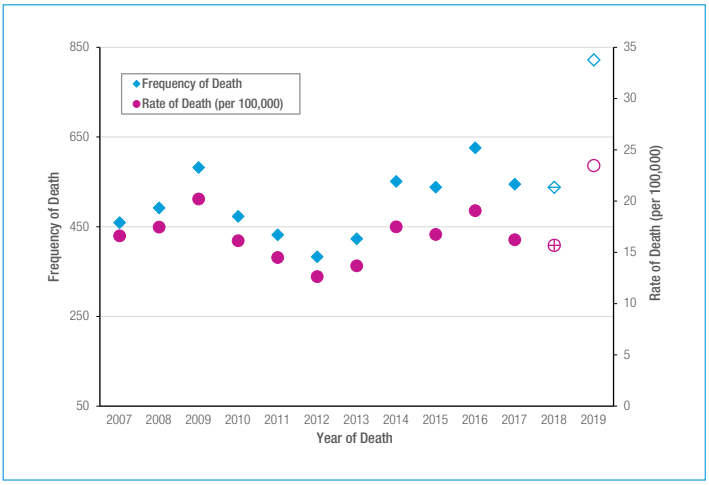
FIGURE 16: TREND IN FREQUENCY AND ANNUAL RATE OF ADULT INJURY DEATHS, VICTORIA 2007-2019



Note: An increase in deaths for the 2019 reference year is due to inclusion of deaths that had been registered in 2017, 2018 and 2019. See Appendix 3 for more details.

UNINTENTIONAL INJURY DEATHS

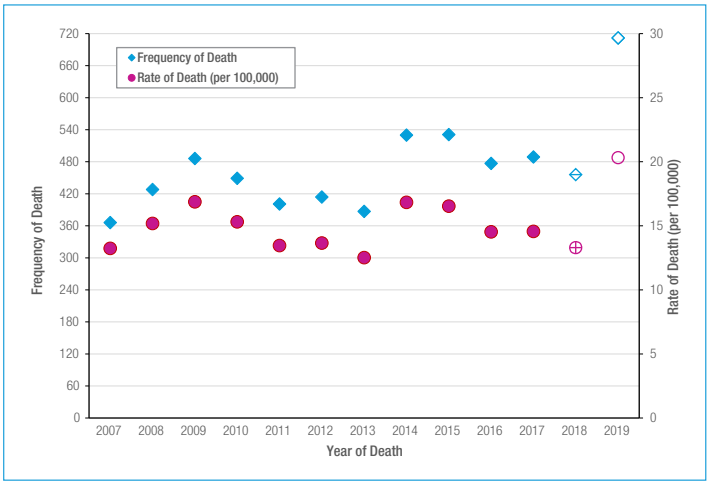
FIGURE 17: TREND IN FREQUENCY AND ANNUAL RATE OF ADULT UNINTENTIONAL INJURY DEATHS, VICTORIA 2007-2019



Note: An increase in deaths for the 2019 reference year is due to inclusion of deaths that had been registered in 2017, 2018 and 2019. See Appendix 3 for more details.

INTENTIONAL INJURY DEATHS

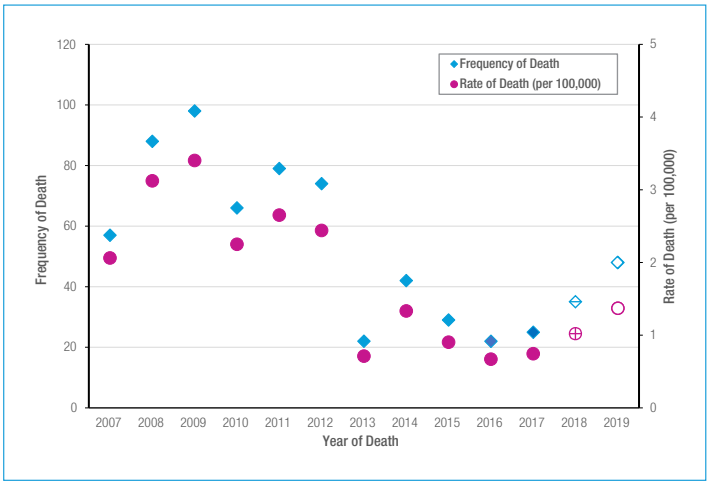
FIGURE 18: TREND IN FREQUENCY AND ANNUAL RATE OF ADULT INTENTIONAL INJURY DEATHS, VICTORIA 2007-2019



Note: An increase in deaths for the 2019 reference year is due to inclusion of deaths that had been registered in 2017, 2018 and 2019. See Appendix 3 for more details.

UNDETERMINED INTENT INJURY DEATHS

FIGURE 19: TREND IN FREQUENCY AND ANNUAL RATE OF ADULT UNDETERMINED INTENT INJURY DEATHS, VICTORIA 2007-2019



Note: An increase in deaths for the 2019 reference year is due to inclusion of deaths that had been registered in 2017, 2018 and 2019. See Appendix 3 for more details.

◆	Frequency (final)	●	Rate (final)
◈	Frequency (revised)	⊕	Rate (revised)
◇	Frequency (preliminary)	○	Rate (preliminary)

PATTERN OF INJURY DEATHS (2017-2019)

In the period 2017-2019, 3670 Victorian adults died as a result of injury. More than half of these deaths were unintentional (n=1905, 51.9%), 45.1% were intentional (n=1657) and the remaining 2.9% were classified as undetermined intent (n=108) (Table 12).

GENDER DISTRIBUTION

- Males were overrepresented in adult injury deaths, accounting for around three-quarters of unintentional (n=1417, 74.4%) and intentional injury deaths (n=1234, 74.5%) (Table 12).
- The unintentional and intentional injury annual death rates were higher for males than females (27.9 & 24.3/100,000 vs. 9.3 & 8.1/100,000, respectively) (Table 12).

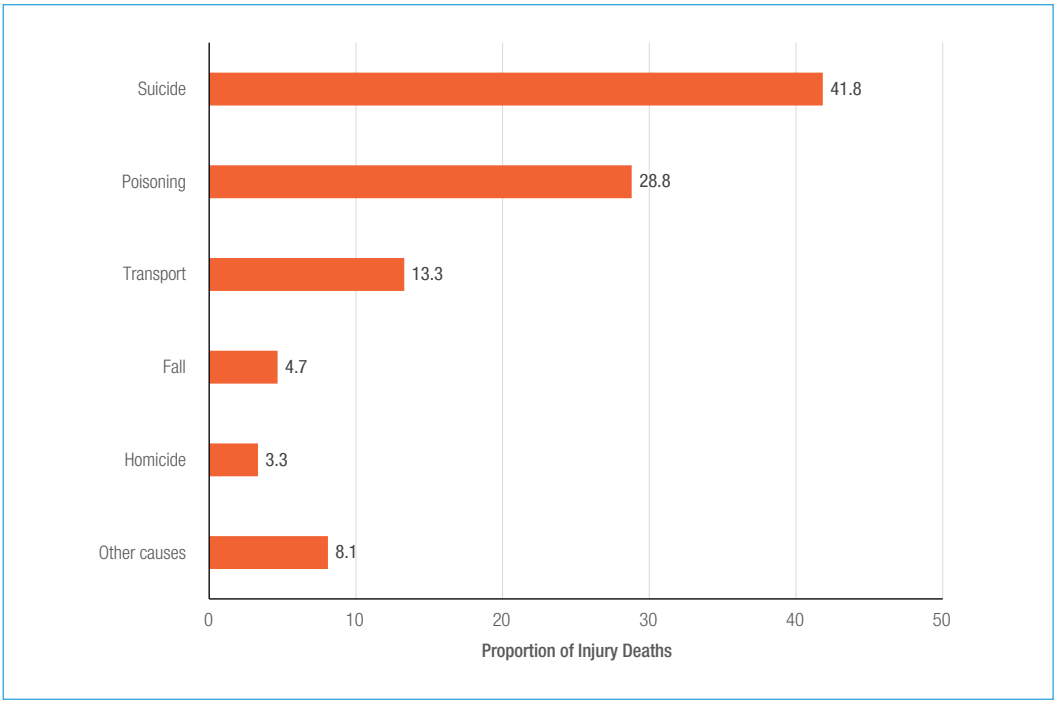
AGE DISTRIBUTION

- Average annual rates for unintentional injury deaths were lower among adults aged 25-34 years. For intentional injury deaths average annual rates were lowest among adults aged 60-64 years and 25-29 year olds respectively (Table 13).

LEADING CAUSES OF ADULT INJURY DEATHS

- Figure 20 shows the leading causes of adult injury deaths. Suicide accounted for 41.8% of injury deaths (n=1535), followed by unintentional poisoning (n=1057, 28.8%) and transport (n=488, 13.3%).
- For more detail on causes of injury deaths see Appendix 1 Table 21.

FIGURE 20: LEADING CAUSES OF ADULT INJURY DEATHS, VICTORIA 2017-2019 (N=3670)



Note: The cause categories "other specified unintentional", "unspecified unintentional" and "undetermined intent" were included in the "other causes" category.

TABLE 12: FREQUENCY AND AVERAGE ANNUAL RATE OF ADULT INJURY DEATHS BY INTENT AND GENDER, VICTORIA 2017-2019

	UNINTENTIONAL			INTENTIONAL			UNDETERMINED INTENT			ALL		
	n	%	RATE PER 100,000	n	%	RATE PER 100,000	n	%	RATE PER 100,000	n	%	RATE PER 100,000
Male	1417	74.4	27.9	1234	74.5	24.3	59	54.6	1.2	2710	73.8	53.4
Female	488	25.6	9.3	423	25.5	8.1	49	45.4	0.9	960	26.2	18.4
All	1905	100.0	18.5	1657	100.0	16.1	108	100.0	1.0	3670	100.0	35.7

TABLE 13: FREQUENCY AND AVERAGE ANNUAL RATE OF ADULT INJURY DEATHS BY INTENT AND AGE GROUP, VICTORIA 2017-2019

	UNINTENTIONAL			INTENTIONAL			UNDETERMINED INTENT			ALL		
	n	%	RATE PER 100,000	n	%	RATE PER 100,000	n	%	RATE PER 100,000	n	%	RATE PER 100,000
25-29	195	10.2	12.6	212	12.8	13.7	10	9.3	0.6	417	11.4	27.0
30-34	203	10.7	13.3	234	14.1	15.4	12	11.1	0.8	449	12.2	29.5
35-39	281	14.8	20.5	222	13.4	16.2	15	13.9	1.1	518	14.1	37.7
40-44	271	14.2	21.8	231	13.9	18.6	18	16.7	1.4	520	14.2	41.8
45-49	297	15.6	23.1	233	14.1	18.2	18	16.7	1.4	548	14.9	42.7
50-54	231	12.1	19.8	197	11.9	16.9	14	13.0	1.2	442	12.0	37.8
55-59	211	11.1	18.5	200	12.1	17.5	14	13.0	1.2	425	11.6	37.3
60-64	216	11.3	21.2	128	7.7	12.6	7	6.5	**	351	9.6	34.5
All	1905	100.0	18.5	1657	100.0	16.1	108	100.0	1.0	3670	100.0	35.7

*Notes: Rates based on frequency less than 10 have been suppressed with "**".*

LEADING CAUSES IN MORE DETAIL

- Hanging was the most common method of suicide (n=881, 57.4%) among adults, followed by poisoning with pharmaceutical substances (n=210, 13.7%) and non-pharmaceutical substances (n=105, 6.8%) (Table 14).

TABLE 14: SUICIDES, VICTORIA 2017-2019

DETAILED CAUSE	n	%
Hanging, strangulation & suffocation	881	57.4
Poisoning- pharmaceuticals	210	13.7
Poisoning- other substances	105	6.8
Jumping or lying before moving object	89	5.8
Firearms	71	4.6
Jumping from a high place	63	4.1
Sharp object	37	2.4
Crashing of motor-vehicle	25	1.6
Drowning and submersion	23	1.5
Smoke, fire & flames	19	1.2
Other specified or unspecified means	12	0.8
All suicides	1535	100

- Narcotics & psychodysleptics (hallucinogens) were the most common specific agents involved in unintentional poisoning deaths among adults (n=191, 18.1%) (Table 15).

TABLE 15: UNINTENTIONAL POISONING DEATHS, VICTORIA 2017-2019

DETAILED CAUSE	n	%
Narcotics & psychodysleptics {hallucinogens} not elsewhere classified	191	18.1
Antiepileptic, sedative-hypnotic, antiparkinsonism & psychotropic drugs, not elsewhere classified	89	8.4
Alcohol	72	6.8
Nonopioid analgesics, antipyretics & antirheumatics	7	0.7
Other gases and vapours	*	*
Other & unspecified chemicals & noxious substances	*	*
Other & unspecified drugs, medicaments & biological subs	693	65.6
All poisonings	1057	100

Note: Frequency of 5 or less has been suppressed with an "".*

- Unintentional transport deaths among adults mostly involved car occupants (n=234, 48.0%) and motorcycle riders (n=116, 23.8%) (Table 16).

TABLE 16: UNINTENTIONAL TRANSPORT DEATHS, VICTORIA 2017-2019

DETAILED CAUSE	n	%
Car occupant injured in transport incident	234	48.0
Motorcycle rider injured in transport incident	116	23.8
Pedestrian injured in transport incident	54	11.1
Pedal cyclist injured in transport incident	23	4.7
Other land transport incident	18	3.7
Occupant of heavy transport vehicle	16	3.3
Water transport incident	11	2.3
Air and space transport incident	9	1.8
Bus occupant injured in transport incident	*	*
Occupant of pick-up truck or van incident	*	*
All transport deaths	488	100

Note: Frequency of 5 or less has been suppressed with an "".*

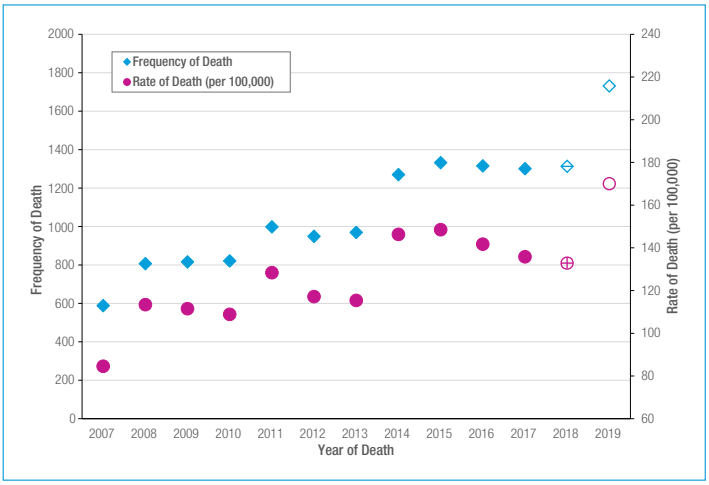
OLDER ADULTS (65 YEARS+)

TREND IN INJURY DEATHS (2007-2019)

Data presented for the years 2018-2019 are not final and subject to revision (see page 2 for more information). Consequently, statistical analysis of trends has not been conducted but figures have been provided here to give an indication of current trends in Victorian injury deaths among older adults.

ALL INTENTS INJURY DEATHS

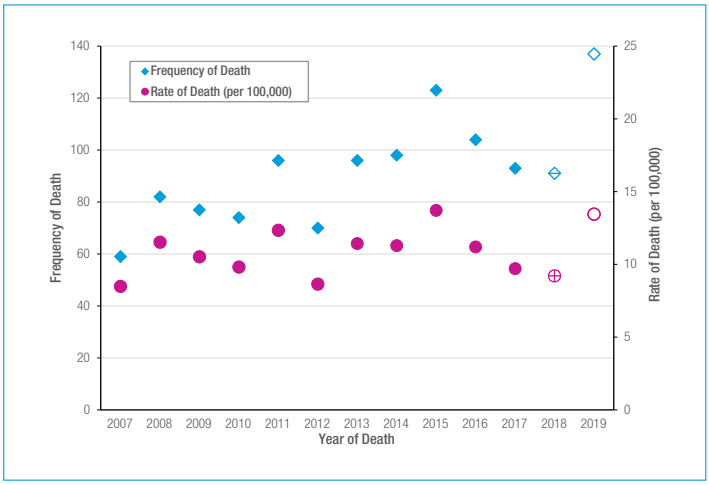
FIGURE 21: TREND IN FREQUENCY AND ANNUAL RATE OF OLDER ADULT INJURY DEATHS, VICTORIA 2007-2019



Note: An increase in deaths for the 2019 reference year is due to inclusion of deaths that had been registered in 2017, 2018 and 2019. See Appendix 3 for more details.

INTENTIONAL INJURY DEATHS

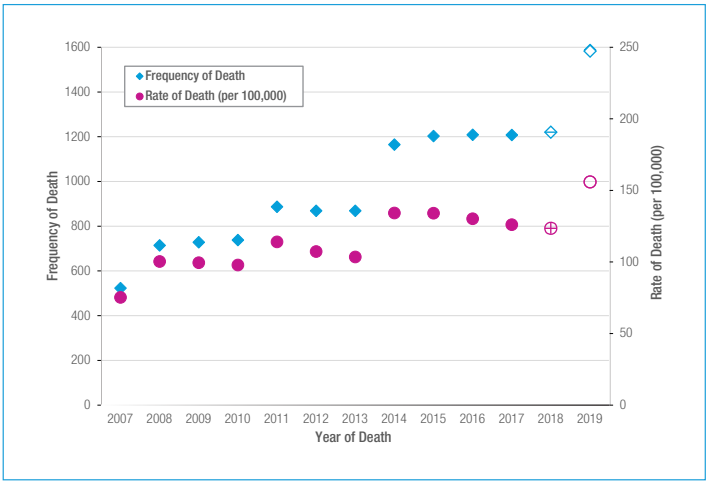
FIGURE 23: TREND IN FREQUENCY AND ANNUAL RATE OF OLDER ADULT INTENTIONAL INJURY DEATHS, VICTORIA 2007-2019



Note: An increase in deaths for the 2019 reference year is due to inclusion of deaths that had been registered in 2017, 2018 and 2019. See Appendix 3 for more details.

UNINTENTIONAL INJURY DEATHS

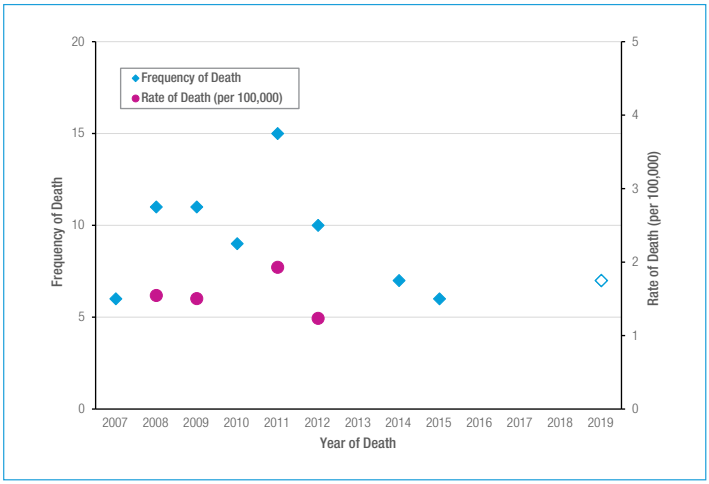
FIGURE 22: TREND IN FREQUENCY AND ANNUAL RATE OF OLDER ADULT UNINTENTIONAL INJURY DEATHS, VICTORIA 2007-2019



Note: An increase in deaths for the 2019 reference year is due to inclusion of deaths that had been registered in 2017, 2018 and 2019. See Appendix 3 for more details.

UNDETERMINED INTENT INJURY DEATHS

FIGURE 24: TREND IN FREQUENCY AND ANNUAL RATE OF OLDER ADULT UNDETERMINED INTENT INJURY DEATHS, VICTORIA 2007-2019



Note: Frequency of 5 or less and rates based on frequency less than 10 have been suppressed.

◆ Frequency (final) ● Rate (final)
◈ Frequency (revised) ⊕ Rate (revised)
◇ Frequency (preliminary) ○ Rate (preliminary)

PATTERN OF INJURY DEATHS (2017-2019)

In the period 2017-2019, 4337 Victorian older adults died as a result of injury. Ninety-three percent of these deaths were unintentional (n=4016, 92.6%) and 7.4% were intentional (n=321) (Table 17). Deaths among older adults coded to undetermined intent are not reported in this section for reasons of confidentiality.

GENDER DISTRIBUTION

- More than half of the unintentional injury deaths were among females (n=2106, 52.4%), while males accounted for 70.1% of intentional injury deaths (n=225) (Table 17).
- The all injury and unintentional injury annual death rates were similar for males (155.5 & 139.1/100,000) and females (138.4 & 132.3/100,000, respectively) (Table 17).
- The intentional injury annual death rates were higher for males (16.4/100,000) compared to females (6.0/100,000) (Table 17).

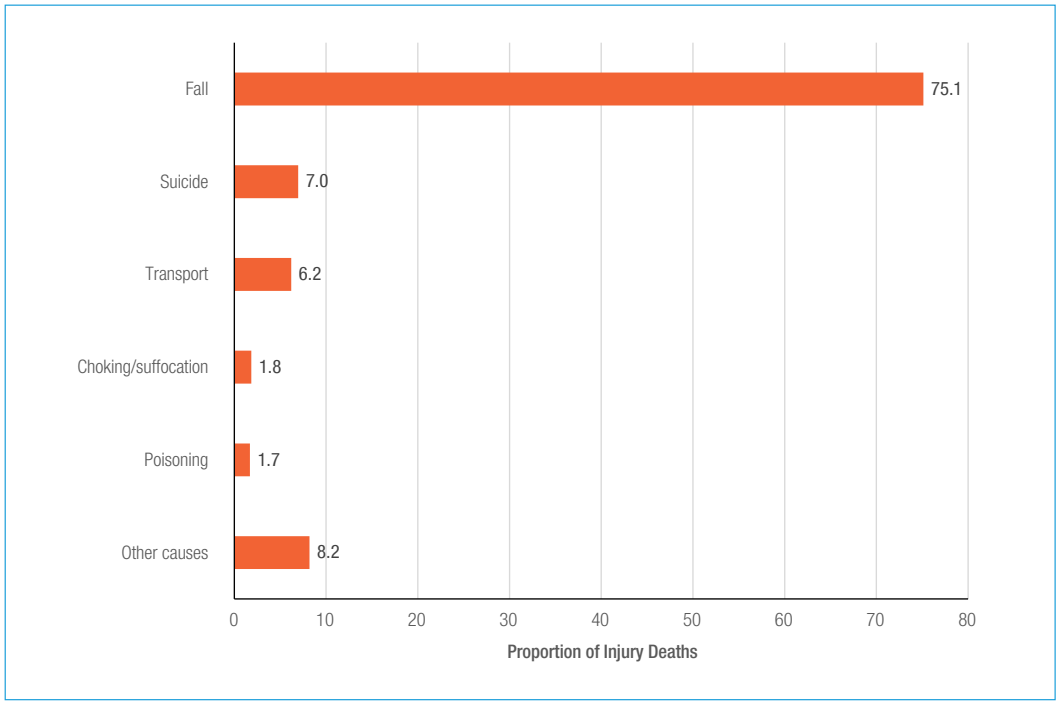
AGE DISTRIBUTION

- Unintentional injury annual death rates increased as age increased, with the highest rates observed in persons aged 85 years and older (621.4/100,000) (Table 18).
- Intentional injury annual death rates were fairly consistent across the older adult age groups, ranging from 9.7/100,000 to 12.6/100,000 (Table 18).

LEADING CAUSES OF OLDER ADULT INJURY DEATHS

- Figure 25 shows the 5 leading causes of older adult injury deaths. Falls accounted for three-quarters of injury deaths (n=3258, 75.1%), followed by suicide (n=302, 7.0%), transport incidents (n=269, 6.2%), choking/suffocation (n=80, 1.8%), and unintentional poisoning (n=74, 1.7%). For more detail on causes of injury deaths see Appendix 1 Table 21.

FIGURE 25: LEADING CAUSES OF OLDER ADULT INJURY DEATHS, VICTORIA 2017-2019 (N=4337)



Note: The cause categories "other specified unintentional" and "unspecified unintentional were included in the "other causes" category

TABLE 17: FREQUENCY AND AVERAGE ANNUAL RATE OF OLDER ADULT INJURY DEATHS BY INTENT AND GENDER, VICTORIA 2017-2019

	UNINTENTIONAL			INTENTIONAL			ALL*		
	n	%	RATE PER 100,000	n	%	RATE PER 100,000	n	%	RATE PER 100,000
Male	1910	47.6	139.1	225	70.1	16.4	2135	49.2	155.5
Female	2106	52.4	132.3	96	29.9	6.0	2202	50.8	138.4
All	4016	100.0	135.5	321	100.0	10.8	4337	100.0	146.3

**Note: Deaths among older adults coded to 'undetermined intent' were deleted from the analysis (see methods section)*

TABLE 18: FREQUENCY AND AVERAGE ANNUAL RATE OF OLDER ADULT INJURY DEATHS BY INTENT AND AGE GROUP, VICTORIA 2017-2019

	UNINTENTIONAL			INTENTIONAL			ALL*		
	n	%	RATE PER 100,000	n	%	RATE PER 100,000	n	%	RATE PER 100,000
65-69	204	5.1	22.7	101	31.5	11.2	305	7.0	33.9
70-74	264	6.6	35.1	75	23.4	10.0	339	7.8	45.1
75-79	370	9.2	69.3	52	16.2	9.7	422	9.7	79.0
80-84	690	17.2	181.5	48	15.0	12.6	738	17.0	194.1
85+	2488	62.0	621.4	45	14.0	11.2	2533	58.4	632.6
All	4016	100.0	135.5	321	100.0	10.8	4337	100.0	146.3

**Note: Deaths among older adults coded to 'undetermined intent' were deleted from the analysis (see methods section)*

LEADING CAUSES IN MORE DETAIL

- A high proportion of fall deaths were coded to 'unspecified fall' (n=2547, 78.2%) (Table 19). Of those with a specified fall mechanism (n=711), more than half were falls on the same level from slipping, tripping or stumbling (n=385, 54.1%).

TABLE 19: UNINTENTIONAL FALL DEATHS, VICTORIA 2017-2019

DETAILED CAUSE	n	%
Same level from slipping, tripping, stumbling	385	11.8
Involving bed	109	3.3
On and from stairs and steps	67	2.1
Involving chair	40	1.2
Other fall on same level	32	1
Involving wheelchair	25	0.8
On and from ladder	20	0.6
From, out of or through building or structure	13	0.4
Other fall from one level to another	7	0.2
On same level - collision w pushing by another person	6	0.2
Involving other furniture	*	*
While being carried or supported by other persons	*	*
Unspecified fall	2547	78.2
All falls	3258	100.0

Note: Frequency of 5 or less has been suppressed with an "".*

APPENDIX 1

TABLE 20: OVERVIEW OF INJURY DEATHS, VICTORIA 2017-2019

		2017[1]		2018[2]		2018 [3]		TOTAL*	
		n	%	n	%	n	%	n	%
	ALL	**2519**	**100.0**	**2506**	**100.0**	**3584**	**100.0**	**8609**	**100.0**
Age	0-14	22	0.9	21	0.8	28	0.8	71	0.8
	15-24	137	5.4	143	5.7	242	6.8	522	6.1
	25-64	1059	42.0	1029	41.1	1582	44.1	3670	42.6
	65+	1301	51.6	1313	52.4	1732	48.3	4346	50.5
Sex	Male	1492	59.2	1533	61.2	2259	63.0	5284	61.4
	Female	1027	40.8	973	38.8	1325	37.0	3325	38.6
Cause	**UNINTENTIONAL**	**1830**	**72.9**	**1825**	**72.8**	**2543**	**71.0**	**6198**	**72.0**
	Fall	1020	40.5	1063	42.4	1352	37.7	3435	39.9
	Poisoning	343	13.6	321	12.8	524	14.6	1188	13.8
	Transport	281	11.2	259	10.3	388	10.8	928	10.8
	Choking/suffocate	33	1.3	35	1.4	50	1.4	118	1.4
	Drowning/near drowning	24	1.0	25	1.0	36	1.0	85	1.0
	Natural/environmental/animals	14	0.6	16	0.6	24	0.7	54	0.6
	Fires/burns/scalds	10	0.4	10	0.4	24	0.7	44	0.5
	Hit/struck/crush	8	0.3	12	0.5	22	0.6	42	0.5
	Machinery	*	*	*	*	6	0.2	10	0.1
	Cutting/piercing	*	*	*	*	*	*	8	0.1
	Overexertion and/or strenuous movements	*	*	*	*	*	*	*	*
	Explosions/firearms	*	*	*	*	0	0.0	*	*
	Foreign body - natural orifice	0	0.0	0	0.0	*	*	*	*
	Other specified unintentional	7	0.3	6	0.2	7	0.2	20	0.2
	Unspecified unintentional	85	3.4	69	2.8	104	2.9	258	3.0
	INTENTIONAL	**662**	**26.3**	**640**	**25.5**	**980**	**27.3**	**2282**	**26.5**
	Suicide	622	24.7	597	23.8	897	25.0	2116	24.6
	Homicide	40	1.6	43	1.7	83	2.3	166	1.9
	UNDETERMINED INTENT*	**27**	**1.1**	**41**	**1.6**	**61**	**1.7**	**129**	**1.5**

Notes: Data for different years are at different stages of the ABS revisions process: (1) Final, (2) Revised & (3) Preliminary.
Frequency of 5 or less has been suppressed with an "".*
**Deaths among children coded to 'undetermined intent' were deleted from the entire analysis (see methods section).*

TABLE 21: RANKING OF CAUSES OF INJURY DEATHS (ALL AGES), VICTORIA 2017-2019

RANK	AGE GROUPS (YEARS)																		
	0-4yrs	5-9yrs	10-14yrs	15-19yrs	20-24yrs	25-29yrs	30-34yrs	35-39yrs	40-44yrs	45-49yrs	50-54yrs	55-59yrs	60-64yrs	65-69yrs	70-74yrs	75-79yrs	80-84yrs	85+ yrs	ALL
1	transport	transport	transport	suicide	suicide	suicide	suicide	suicide	suicide	suicide	suicide	suicide	suicide	suicide	fall	fall	fall	fall	fall
n	10	6	15	107	163	197	214	202	203	213	190	194	122	95	172	275	567	2163	3435
%	29.4%	54.5%	57.7%	55.4%	51.4%	47.2%	47.7%	39.0%	39.0%	38.9%	43.0%	45.6%	34.8%	31.1%	50.7%	65.2%	76.8%	85.4%	40.0%
2	choking/ suffocation	drowning	suicide	transport	transport	poisoning	poisoning	poisoning	poisoning	poisoning	poisoning	poisoning	fall	fall	suicide	transport	suicide	unspec. unintent.	suicide
n	6	*	9	62	78	88	121	189	177	188	143	95	61	81	68	51	48	179	2146
%	17.6%	*	34.6%	32.1%	24.6%	21.1%	26.9%	36.5%	34.0%	34.3%	32.4%	22.4%	17.4%	26.6%	20.1%	12.1%	6.5%	7.1%	24.6%
3	drowning	fall	drowning	poisoning	poisoning	transport	transport	transport	transport	transport	transport	transport	poisoning	transport	transport	suicide	transport	transport	poisoning
n	*	*	*	10	47	75	69	62	61	58	48	59	56	60	39	48	46	73	1188
%	*	*	*	5.2%	14.8%	18.0%	15.4%	12.0%	11.7%	10.6%	10.9%	13.9%	16.0%	19.7%	11.5%	11.4%	6.2%	2.9%	13.8%
4	homicide	choking/ suffocation	homicide	drowning	homicide	homicide	homicide	homicide	homicide	fall	fall	fall	transport	poisoning	poisoning	unspec. unintent.	unspec. unintent.	suicide	transport
n	*	*	*	7	15	15	20	20	28	21	21	36	56	39	15	11	42	43	928
%	*	*	*	3.6%	4.7%	3.6%	4.5%	3.9%	5.4%	3.8%	4.8%	8.5%	16.0%	12.8%	4.4%	2.6%	5.7%	1.7%	10.8%
5	hit/ struck/ crush	homicide		homicide	drowning	drowning	oth. or undet. intent	oth. or undet. intent	oth. or undet. intent	homicide	oth. or undet. intent	oth. or undet. intent	drowning	unspec. unintent.	choking/ suffocation	choking/ suffocation	choking suffocation	choking/ suffocation	unspec. unintent.
n	*	*		*	*	10	12	15	18	20	14	14	12	7	13	9	15	39	258
%	*	*		*	*	2.4%	2.7%	2.9%	3.5%	3.8%	3.2%	3.3%	3.4%	2.3%	3.8%	2.1%	2.0%	1.5%	3.0%
6	fires/ burns/ scalds	oth. unintent.		choking/ suffocation	fall	oth. or undet. intent	fall	fall	fall	oth. or undet. intent	homicide	oth. or undet. intent	unspec. unintent.	drowning	poisoning	poisoning	poisoning	fires/ burns/ scalds	homicide
n	*	*		*	*	10	*	12	10	7	8	6	7	6	9	5	6	11	161
%	*	*		*	*	2.4%	*	2.3%	1.9%	1.5%	1.9%	1.7%	2.5%	2.2%	3.2%	1.3%	0.9%	0.5%	2.1%
6	fall			hit/ struck/ crush	oth. unintent.	fall	drowning	drowning	drowning	oth. or undet. intent	homicide	homicide	choking/ suffocation	homicide	unspec. unintent.	poisoning	poisoning	fires/ burns/ scalds	homicide
n	*			*	*	*	*	6	8	18	7	6	9	6	9	9	7	9	166
%	*			*	*	*	*	1.2%	1.5%	3.3%	1.6%	1.4%	2.6%	2.0%	2.7%	2.1%	0.9%	0.4%	1.9%
7	nat./ envir./ animals			oth. unintent.	choking/ suffocation	oth. unintent.	nat./ envir./ animals	hit/struck/crush	hit/struck/crush	nat./ envir./ animals	choking/ suffocation	nat./ envir./ animals	oth. or undet. intent	nat./ envir./ animals	homicide	fires/ burns/ scalds	nat./ envir./ animals	nat./ envir./ animals	choking/ suffocation
n	*			*	*	*	*	*	*	7	*	*	7	*	7	*	*	9	118
%	*			*	*	*	*	*	*	13%	*	*	2.0%	*	2.1%	*	*	0.4%	1.4%
8					hit/ struck/ crush	fires/ burns/ scalds	hit/ struck/ crush	choking/suffocation	choking/suffocation	drowning	drowning	hit/ struck/ crush	homicide	choking/ suffocation	drowning	nat./ envir./ animals	drowning	hit/ struck/ crush	oth. or undet. intent
n					*	*	*	*	*	6	*	*	6	*	6	*	*	*	108
%					*	*	*	*	*	1.1%	*	*	1.7%	*	1.8%	*	*	*	1.3%
9					nat./ envir./ animals	hit/ struck/ crush		oth. unintent.	fires/burns/scalds	hit/ struck/ crush	fires/ burns/ scalds	fires/ burns/ scalds	fires/ burns/ scalds	drowning	fires/ burns/ scalds	homicide	fires/ burns/ scalds	poisoning	drowning
n					*	*		*	*	*	*	*	6	*	*	*	*	*	85
%					*	*		*	*	*	*	*	1.7%	*	*	*	*	*	1.0%
10						nat./ envir./ animals		strenuous movements	machinery	choking/ suffocation	machinery	choking/ suffocation	nat./ envir./ animals	oth. unintent.	nat./ envir./ animals	drowning	hit/ struck/ crush	drowning	nat./ envir./ animals
n						*		*	*	*	*	*	*	*	*	*	*	*	54
%						*		*	*	*	*	*	*	*	*	*	*	*	0.6%
11						choking/ suffocation		unspec. unintent	machinery	fires/ burns/ scalds	nat./ envir./ animals	unspec. unintent.	hit/ struck/ crush	cutting/ piercing	hit/ struck/ crush	hit/ struck/ crush	strenuous movements	cutting/piercing	fires/ burns/ scalds
n						*		*	*	*	*	*	*	*	*	*	*	*	44
%						*		*	*	*	*	*	*	*	*	*	*	*	0.5%
12									cutting/piercing	strenuous movements	explosions/ firearms	drowning	unspec. unintent	fires/ burns/ scalds	cutting/ piercing	cutting/ piercing		homicide	hit/ struck/ crush
n									*	*	*	*	*	*	*	*		*	42
%									*	*	*	*	*	*	*	**		*	0.5%
13									nat./envir./animals	unspec. unintent	hit/ struck/ crush	machinery	machinery			foreign body		oth. unintent.	oth. unintent.
n									*	*	*	*	*			*		*	20
%									*	*	*	*	*			*		*	0.2%
14										machinery	unspec. unintent	cutting/ piercing	oth. unintent.			oth. unintent.		explosions/ firearms	machinery
n										*	*	*	*			*		*	10
%										*	*	*	*			*		*	0.1%
15										cutting/ piercing	oth. unintent.	oth. unintent.							cutting/ piercing
n										*	*	*							8
%										*	*	*							0.1%
16										explosions/ firearms									strenuous movements
n										*									*
%										*									*
17										oth. unintent.									explosions/ firearms
n										*									*
%										*									*
18																			foreign body
n																			*
%																			*
all	34	11	26	193	317	417	449	518	520	548	442	425	351	305	339	422	738	2533	8588

Note:

Oth/ undet. intent = other or undetermined intent; nat./ envir./ animals = natural/environmental/animals; oth. unintent.= other specified unintentional; unspec.unintent.= unspecified unintentional; strenuous movements= overexertion/strenuous movements.

Frequency of 5 or less has been suppressed with an "". Other cells in the same row and/or column may be suppressed "**" in order to maintain confidentiality.*

** Deaths coded to 'undetermined intent' for children, adolescents/young adults and older adults were deleted from the analysis (see methods section)*

APPENDIX 2

TABLE 22: INJURY DEATHS: STATE OF RESIDENCE VS STATE OF DEATH REGISTRATION, 2017-2019

STATE OF RESIDENCE	REGISTRATION STATE								
	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	Total
NSW	9288	83	93	11	10	7	4	82	9578
VIC	91	8441	35	13	15	*	7	*	8609
QLD	112	29	6549	6	8	*	7	*	6718
SA	20	13	7	2512	6	*	10	*	2570
WA	7	7	8	14	3957	*	10	*	4006
TAS	*	10	*	0	*	864	0	*	886
NT	*	*	7	8	*	0	427	*	**
ACT	39	*	*	0	*	*	*	430	476
Other**	*	0	0	0	0	0	0	*	*
Total	9565	8586	6703	2564	4004	881	466	526	33295

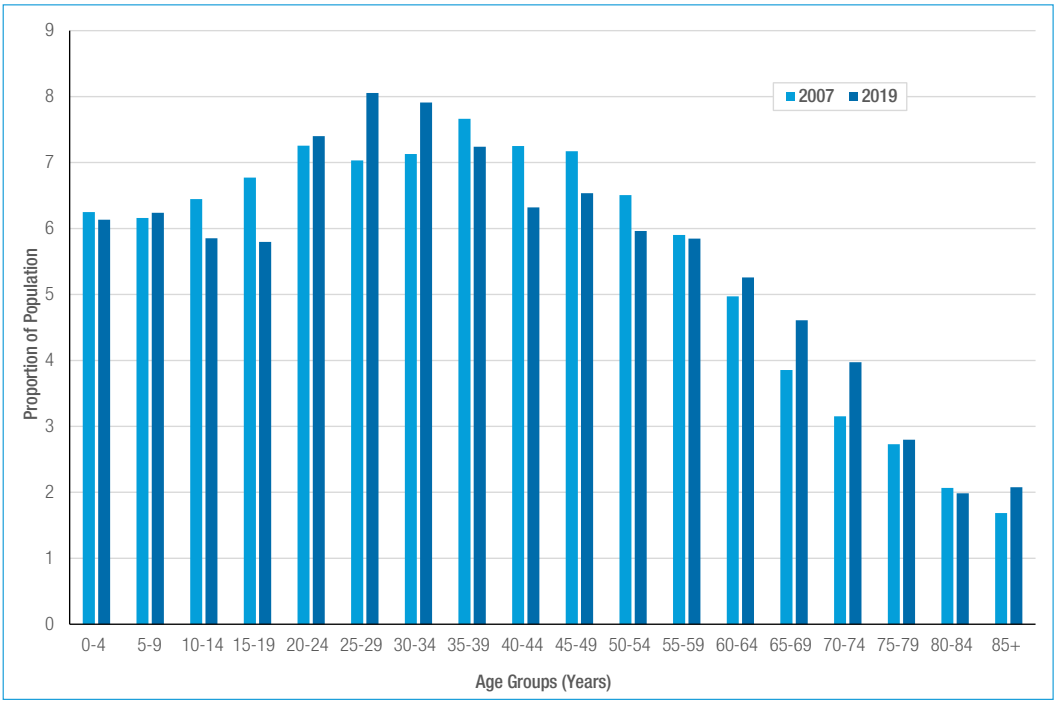
Notes: Excludes medical injury and late effects. Also excludes undetermined intent injury deaths among children aged 0-14 years.
Frequency of 5 or less has been suppressed with an "". Other cells in the same row and/or column may be suppressed "**" in order to maintain confidentiality.*
*** Other Territories (Cocos (Keeling) Islands, Christmas Island, Jervis Bay Territory)*

TABLE 23: REFERENCE YEAR OF INJURY DEATH VS ACTUAL YEAR OF INJURY DEATH FOR VICTORIAN RESIDENTS

DEATH YEAR	REFERENCE YEAR													
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Total
<2005	16	*	*	*	*	*	*	*	*	*	*	*	0	41
2005	11	*	0	*	0	*	0	0	0	*	0	0	0	19
2006	122	*	*	0	0	0	*	0	0	0	0	0	0	127
2007	1537	352	7	*	0	0	*	0	0	0	0	0	0	1899
2008		1692	330	*	*	*	0	*	*	*	0	0	0	2034
2009			1903	319	21	*	*	*	0	*	0	0	0	2248
2010				1724	286	*	*	0	*	0	0	*	0	2016
2011					1814	252	7	*	0	*	*	*	*	2081
2012						1759	334	8	*	*	*	*	*	2112
2013							1640	524	6	*	*	*	*	2178
2014								2060	333	9	*	*	0	2406
2015									2263	320	*	*	0	2584
2016										2319	342	0	24	2685
2017											2165	297	343	2805
2018												2199	645	2844
2019													2569	2569
Total	1686	2055	2244	2055	2127	2020	1987	2597	2609	2659	2519	2506	3584	30648

Notes: Excludes medical injury and late effects. Also excludes undetermined intent injury deaths among children aged 0-14 year. Frequency of 5 or less has been suppressed with an "". An increase in deaths for the 2019 reference year is due to inclusion of deaths that had been registered in 2017, 2018 and 2019. See Appendix 3 for more details.*

FIGURE 26: HISTOGRAM OF AGE DISTRIBUTION OF THE RESIDENT POPULATION OF VICTORIA, 2007-2019



Source: ABS catalogue no: 3101.0 - Australian Demographic Statistics; TABLE 52 - Estimated Resident Population by Single Year of Age, Victoria. Downloaded October 2021.

APPENDIX 3: ABS TECHNICAL NOTE: VICTORIAN ADDITIONAL REGISTRATIONS AND TIME SERIES ADJUSTMENT

Downloaded from: https://www.abs.gov.au/methodologies/causes-death-australia-methodology/2019#technical-note-victorian-additional-registrations-and-time-series-adjustment

Introduction

1. ABS mortality statistics are compiled by reference year. Deaths included in the 2019 reference year include:

- those registered in 2019 and received by the ABS in 2019;
- those registered in 2019 and received by the ABS in the first quarter of 2020; and
- those registered in the years prior to 2019 but not received by the ABS until 2019 or the first quarter of 2020 (provided that these records have not been included in an earlier reference period).

2. The majority of deaths are lodged with the ABS in the year they are registered or in the first quarter of the subsequent year. Over the ten years between 2009 and 2018 less than 0.1% of deaths included in a particular reference year were registered in years prior to that reference year. In 2019, the proportion of total deaths that were registered in a year prior to the reference year was 1.6%. The majority of these deaths were registered in Victoria in years prior to 2019. The remainder of this technical note will focus on these additional death registrations and how they are reflected in published data.

Victorian additional death registrations

3. In the first quarter of 2020, the ABS and the Victorian Registry of Births, Deaths and Marriages (RBDM) undertook a joint investigation aimed at identifying death registrations that had not been submitted to the ABS as part of usual processing procedures. This investigation identified 2,812 deaths that had been registered in 2017, 2018 and 2019 but had not previously been provided to the ABS. These deaths were not reported because of an issue associated with the Registry's previous processing system which was replaced in early 2019.
4. The 2,812 additional deaths were reported to the ABS at the conclusion of this investigation, accounting for 6.4% of total registrations (43,882) received for Victoria in 2019. 40.4% of these additional deaths were registered in 2017, 57.0% in 2018 and the remainder in 2019 (2.6%).
5. The 2,812 Victorian deaths are in scope of the 2019 reference year and are therefore included in 2019 counts of total deaths in both the Deaths Australia, 2019 and Causes of Death, Australia datasets. The inclusion of these additional registrations has resulted in increased counts of deaths by particular causes in 2019 when compared to 2017 and 2018.
6. Of the 2,739 deaths that were registered in 2017 and 2018 and submitted to the ABS for the 2019 reference year, 63% were certified by a coroner with the remaining 37% certified by a doctor. Deaths from external causes (accidents, assaults and suicides) are more likely to be coroner referred, so the impact of the additional registrations on counts of deaths for those causes is greater.

Effects on time series

7. There are generally four ways in which causes of death output can change over time:

- Changes in the prevalence of diseases or external causes of death;
- Changes associated with the administrative system through which data is sourced (these may include certification changes or registration delays);
- Updates to the classification underpinning cause of death data (the International Classification of Diseases) by the World Health Organization; and,
- Changes to data processing at the ABS (i.e. system changes or scope changes).

8. The provision of the additional 2,739 deaths which were registered in 2017 and 2018 but reported and included in the 2019 reference year impacts both the Victorian and the national time series. This time series change is associated with an administrative processing issue rather than a true change in the prevalence of diseases or deaths from external causes. This should be taken into account when conducting time series analysis on the 2019 Victorian and national mortality datasets.

MONASH University

ACCIDENT RESEARCH CENTRE

How to Access VISU Data

VISU collects and analyses information on injury problems to underpin the development of prevention strategies and their implementation. VISU analyses are publicly available for teaching, research and prevention purposes. Requests for information can be lodged via the data request form on the VISU website (**monash.edu/muarc/visu)** or by contacting the VISU office by phone (03 9905 1805).

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The Victorian Injury Surveillance Unit (VISU) is a research unit within the Monash University Accident Research Centre (MUARC). VISU is supported by the Victorian Government.

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