MONASH University

ACCIDENT RESEARCH CENTRE

INJURIES DURING AND AFTER THE COVID-19 PANDEMIC IN VICTORIA

Final Bulletin (2021/22)

The following has been prepared by the Victorian Injury Surveillance Unit (VISU), Monash University Accident Research Centre (MUARC)

Final Bulletin: July 2021 to June 2022 Summary

Key Injury Groups	2017/18 & 2018/19 (BASELINE)	2019/20 & 2020/21	2021/22	Rate Difference compared to Pre-COVID (baseline) rates	
	Pre- COVID RATE*	During COVID RATE*	Post- COVID RATE*	During COVID	Post COVID
All ED presentations (not limited to injury)	27,294	25,940	27,273	NS	NS
Unintentional home injury	2068	**2140**	**2165**	↑	↑
Unintentional work-related injury	437.1	**403.6**	431.8	↓	NS
Unintentional farm injury	50.1	52.2	49.6	NS	NS
Sports injury	998.9	**787.0**	**857.3**	↓	↓
Intentional Self-harm injury	147.1	150.8	156.8	NS	NS
Intentional Assault (home) injury	29.4	**32.0**	30.9	↑	NS
Transport injury	331.1	350.7	348.2	NS	NS
Motor vehicle	150.8	**132.7**	**125.8**	↓	↓
Motor cycle	74.7	77.9	77.0	NS	NS
Pedal cycle	74.1	**106.6**	**107.1**	↑	↑
Pedestrian	19.9	**18.1**	18.5	↓	NS

**Emergency Department (ED) annual presentation rates per 100,000 population; NS – Not statistically significant*

VICTORIA State Government | Department of Health

Background

In response to the global COVID-19 pandemic, Australia, including Victoria, implemented social restrictions and distancing to limit transmission of the coronavirus. For most Victorians, in 2020 the physical restrictions and extensive period of lockdown had a marked impact on the pattern of exposure to the workplace, road network, sport and leisure activities and exposure to the home environment. The Victorian Injury Surveillance Unit responded to this in 2020 by increasing injury surveillance and producing focused data reports on injuries during COVID ("the bulletins").

Initially, in 2020, monthly bulletins (editions #1 to #9) reported on injuries in the home (including DIY injuries), farm, transport, self-harm and assault related injuries. The pandemic has also had a profound effect on use of health services, with Emergency Department (ED) attendances well below the level expected for the time of year, during periods of lockdown. Injury statistics were therefore provided not only in absolute terms but also *relative to overall ED use*. Edition #9 of the bulletin presented injury statistics for November and December 2020 during Victoria's stepwise "reopening" and easing of social restrictions.

In 2021, the bulletins were quarterly editions, reflecting stabilisation of Victoria's emergency response to COVID-19. The focus of the quarterly bulletins shifted to: injuries in the home; work-related injuries; farm injuries; sports injuries; intentional injuries (self-harm; assault) and transport injuries. In the 2021 quarterly bulletins, injury statistics were no longer presented *relative to ED service use*, as ED utilisation use was no longer (well) below the expected levels for the time of year.

In line with Victorian government's reduced frequency of COVID-19 reporting, this final edition of the series provides an overview of injury in 2021/22 (post-COVID), which is the most recent year of consolidated Victorian Emergency Minimum Dataset (VEMD) data currently available. Comparison periods for this bulletin are 2017/18-2018/19 (baseline, pre-COVID) and 2019/20-2020/21 (during COVID). This bulletin continues to focus on key injury groups of Home; Work; Farm; Self-harm; Assault; Transport; and Sports. To account for demographic shifts, all presented rates have been age-standardised. To provide context for the presented injury data, references to relevant websites providing key dates of the social restrictions in metropolitan and regional Victoria in 2020 are provided in the Appendix.

Method

Data used to compile this bulletin were extracted from the VEMD, which holds de-identified clinical records of presentations at Victorian public hospitals with designated 24-hour emergency departments (EDs) (currently 39 hospitals). ED presentations from 1 July 2017 to 30 June 2022 were analysed for this bulletin. A detailed outline of the methods used for case selection are provided in the Appendix section of this report. For more information on methods used by the Victorian Injury Surveillance Unit see here and background information and pre-COVID statistics see here.

1. CONTEXT: OVERALL EMERGENCY DEPARTMENT PRESENTATIONS (2021/22)

In 2017/18-2018/19, 2019/20-2020/21 and 2021/22 there were 1,778,135, 1,734,062 and 1,812,837 ED presentations annually in Victoria. Of these ED presentations, 905,021 (50.9%), 889,629 (51.3%) and 933,975 (51.5%) were female, and 872,921 (49.1%), 843,996 (48.7%) and 877,775 (48.4%) were male. The remaining 194 (0.01%), 437 (0.03%) and 1087 (0.06%) ED presentations in 2017/18-2018/19, 2019/20-2020/21 and 2021/22 (respectively) were recorded as sex other than male or female. For the remainder of this report, only ED presentations by persons with sex recorded as male or female are represented, as the selection of injury cases and further injury specification leads to case numbers that are too small to report without potentially compromising data confidentiality.

The age-standardised ED presentation rates in 2017/18-2018/19, 2019/20-2020/21 and 2021/22 were 27,294, 25,940 and 27,273 per 100,000 population. Overall, ED rates per population in the latter two periods (2019/20-2020/21 and 2021/22) were not statistically significantly different to the rate in the baseline period (2017/18-2018/19).

An overview of ED presentations in the two most recent time-periods (2019/20-2020/21 and 2021/22) compared with baseline (2017/18-2018/19) is shown in Figure 1 below, by diagnostic group. The two most commonly occurring diagnostic groups were *Injury and Poisoning* and *Signs and Symptoms*. In 2021/22, the most common diagnoses in the 'Signs and Symptoms' category were *chest pain, unspecified* (25.3%); *other and unspecified abdominal pain* (15.7%); and *unknown and unspecified causes of morbidity* (8.6%).

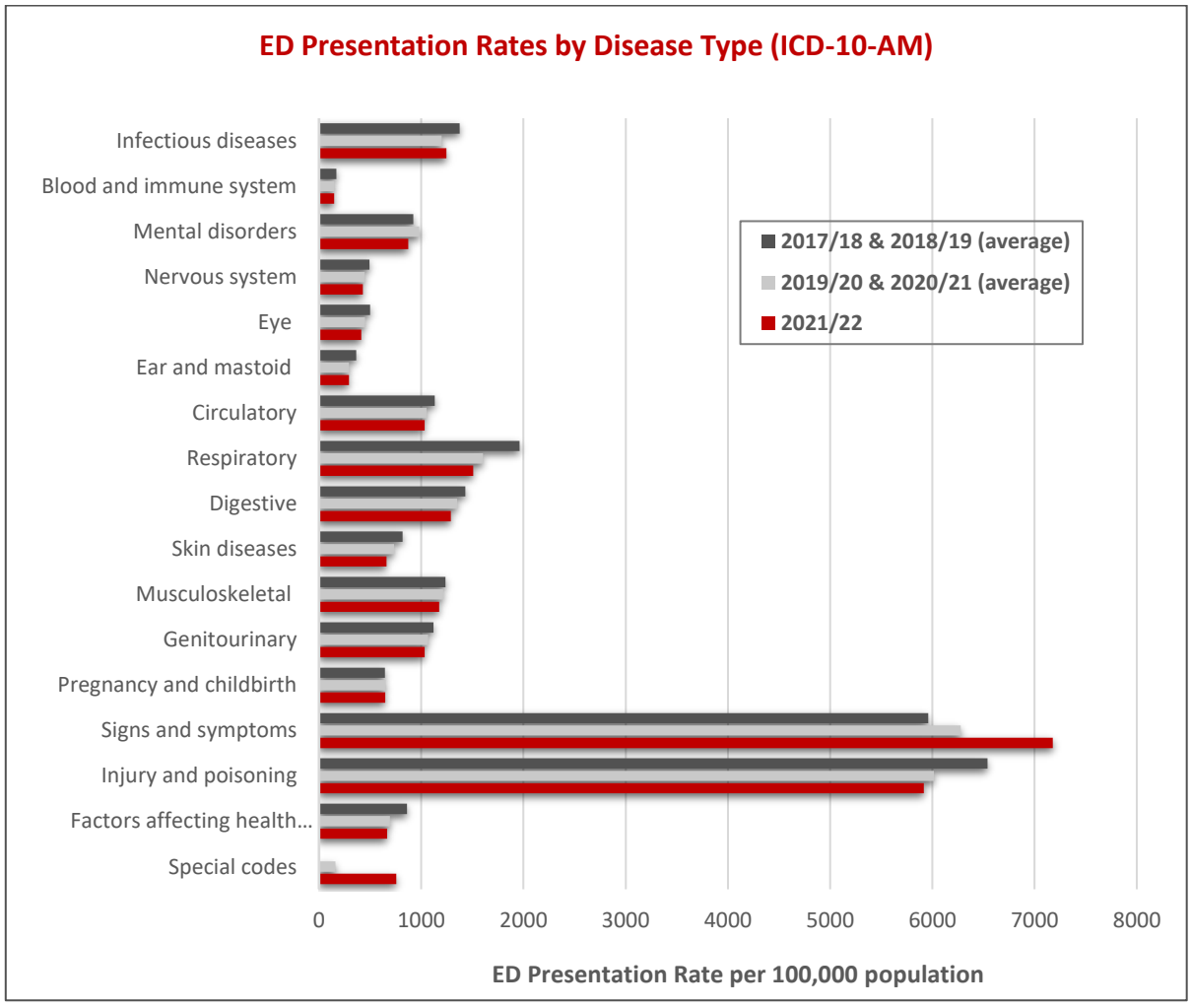

Figure 1: Emergency Department presentation rates by disease type (based on ICD-10-AM headings) in Victoria, July 2017 to June 2022

An overview of specific interest areas: viral illnesses, respiratory illnesses and adverse effects of COVID-19 vaccines are shown in the table below. The rate of ED presentations for viral infections and upper respiratory infections fluctuated during COVID-19, as summarised in previous editions of the COVID-19 Injury Bulletin[1]. Averaged over 2019/20-2020/21, however, these rates were not statistically different to baseline (2017/18-2018/19). Similarly, rates of ED presentations for viral infections and upper respiratory infections were not significantly different in 2021/22 compared with baseline. ED presentation rates for pneumonia, however, were significantly lower in 2019/20-2020/21 compared to baseline (2017/18-2018/19) and the pneumonia-related ED presentation rate decreased further in 2021/22. Asthma rates were lower in 2019/20-2020/21 compared to baseline, with no statistically significant difference in rates in 2021/22. There were 4426 ED presentations for adverse effects of COVID-19 vaccines[2] recorded in the VEMD in 2021/22.

Table 1: Emergency Department Presentations in Victoria for specific interest areas: viral illnesses, respiratory illnesses and adverse effects of COVID-19 vaccines

Category	2017/18 & 2018/19*		2019/20 & 2020/21*		2021/22	
Respiratory illness or virus-related ED presentations:	**Frequency**	**Rate per 100,000 population**	**Frequency**	**Rate per 100,000 population**	**Frequency**	**Rate per 100,000 population**
Viral infection, unspecified	40,259	640.5	39,536	627.2	39,994	652.7
Upper respiratory infection, unspecified	15,317	241.5	14,878	234.9	14,222	230.6
Pneumonia (broncho- or lobar)	14,212	201.6	12,709	173.3	10,957	145.5
Asthma	18,740	299.5	15,815	249.6	16,323	262.3
Adverse effects of COVID vaccines[2]	-	-	446	6.3	4,426	69.8

*Data selection methods explained in the Appendix section. *Two-year average.*

The number of ED presentations due to injury and poisoning was 416,627 in 2017/18-2018/19 (baseline), 391,969 in 2019/20-2020/21 and 383,066 in 2021/22. This corresponds with age-standardised annual rates of 6541, 6016 and 5917 per 100,000 population, respectively. As in previous bulletins, the focus of this bulletin is on unintentional home injury; work-related injury; farm injury; sports injury; intentional injury and transport injury. First, in Figure 2, an overview is provided of injury related ED presentations for the three time-periods, by *place of injury occurrence*. Home was the most common place of occurrence in all three time-periods, ranging from 49% in the baseline period (2017/18-2018/19) to 55% in 2019/20-2020/21 and 53% in 2021/22. Notably, the proportion of injury related ED presentations with place of occurrence coded to 'unspecified place' decreased from 24% in the baseline period to 21% in 2019/20-2020/21 and 15% in 2021/22.

[1] https://www.monash.edu/muarc/research/research-areas/home-and-community/visu/injuries-during-the-covid-19-pandemic

[2] Diagnostic code U077: Emergency use of U07.7 [COVID-19 vaccines causing adverse effects in therapeutic use]

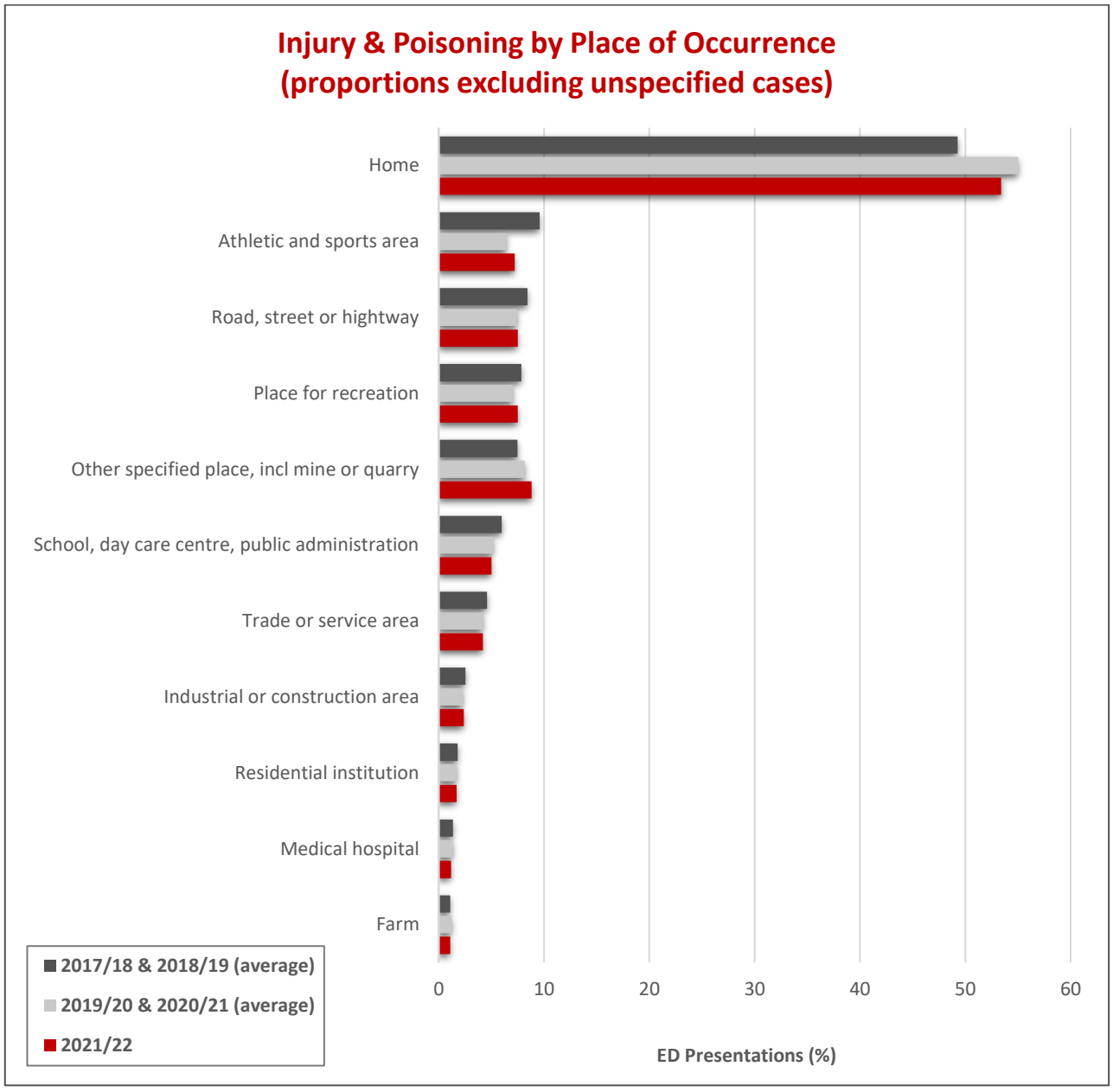

Figure 2: Emergency Department presentations for injury and poisoning by place of occurrence* (%)

*(*Records with unspecified place of occurrence are excluded from the graph.)*

2. SUMMARY: EMERGENCY DEPARTMENT PRESENTATIONS FOR ALL CONDITIONS (VIC)

The rates of ED presentations were 27,294, 25,940 and 27,273 per 100,000 population in 2017/18-2018/19 (baseline), 2019/20-2020/21 (onset of COVID-19 pandemic) and 2021/22, respectively. The latter two overall rates did not differ statistically significantly from the baseline rate.

ED presentations for respiratory diseases showed the greatest difference in rates in 2021/22 vs baseline with a 26% decrease (1509 and 1963 per 100,000 population, respectively).

Rates of ED presentations for viral infections (unspecified), pneumonia and asthma were 641 vs 653; 202 vs 146 and 300 vs 262 per 100,000 population, respectively, in the baseline period (2017/18-2018/19) vs 2021/22.

In 2021/22, 4426 ED presentations were reported to be due to adverse effects of COVID-19 vaccines.

The rates of injury and poisoning-related ED presentations were lower both in 2019/20-2020/21 & 2021/22 compared to baseline (2017/18-2018/19): 6016 and 5917 compared to 6541 per 100,000 (baseline), respectively.

The home was the most commonly recorded place of injury occurrence accounting for 49%, 55% & 53% of injuries in 2017/18-2018/19, 2019/20-2020/21 & 2021/22, respectively.

3. UNINTENTIONAL HOME INJURY

In 2021/22, there were 142,876 ED presentations for unintentional home injuries recorded in the Victorian Emergency Minimum Dataset (VEMD): the age-standardised annual rate was 2165 home injury presentations per 100,000 population. This was higher than the unintentional home injury rate of 2068 per 100,000 in the baseline period 2017/18-2018/19 (p=0.02). The unintentional home injury rate during COVID-19, 2019/20-2020/21 was also above baseline, at 2140 per 100,000 (p=0.04). These patterns are shown in Figure 3 below.

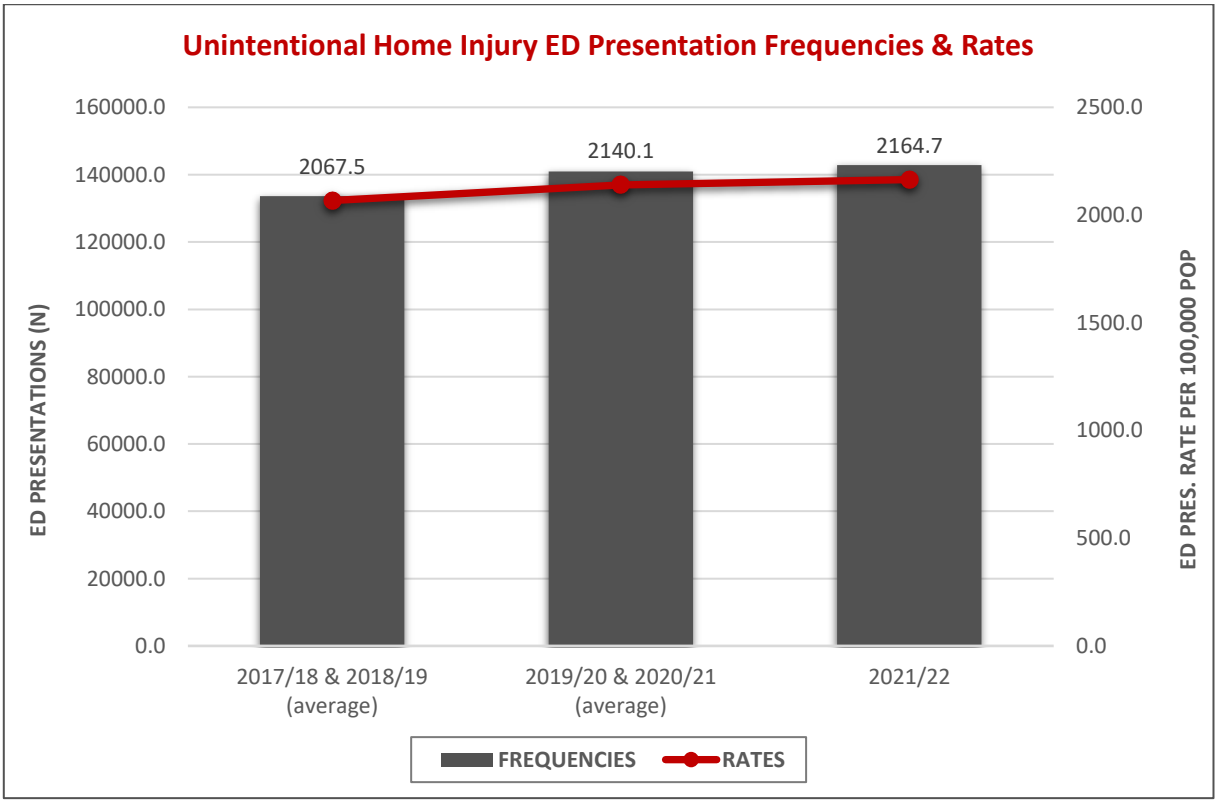

Figure 3: Emergency Department presentation frequencies and rates for unintentional home injury

Unintentional home injury rates by broad age group are shown below, as well as more detailed age-specific rates for people aged 65 years and above. Both Figure 4 and Figure 5 show the rates per 100,000 population at baseline, 2017/18-2018/19 (averaged, dark grey bars), in the years including the onset of the pandemic, (2019/20-2020/21 (averaged, light grey bars); and in 2021/22 (red bars). The COVID-19 period is included for completeness, but a more detailed analysis of this time-period is the focus of earlier editions of this bulletin[3]. In all three time-periods, unintentional home injury rates, as determined from ED presentations, were highest in the 0-14 year age group, followed by the 65+ year age group.

[3] https://www.monash.edu/muarc/research/research-areas/home-and-community/visu/injuries-during-the-covid-19-pandemic

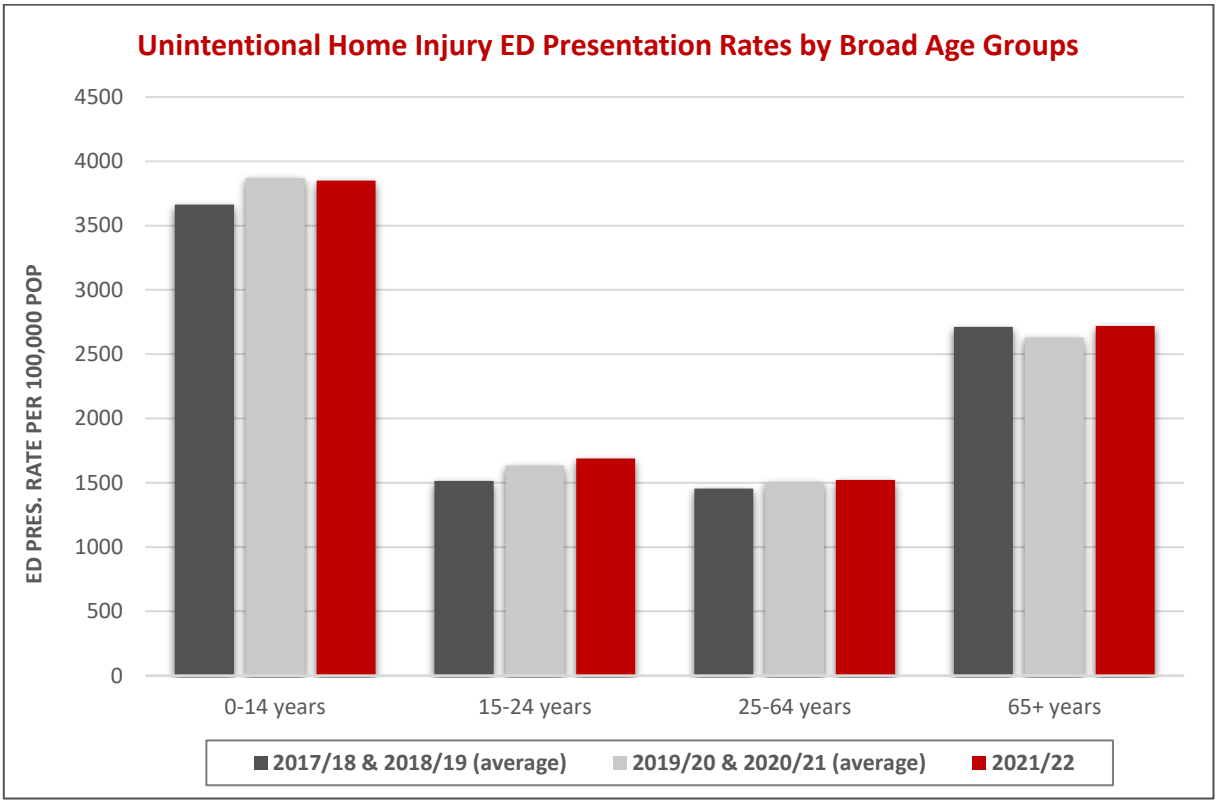

Figure 4: Emergency Department presentation rates for unintentional home injury by broad age groups

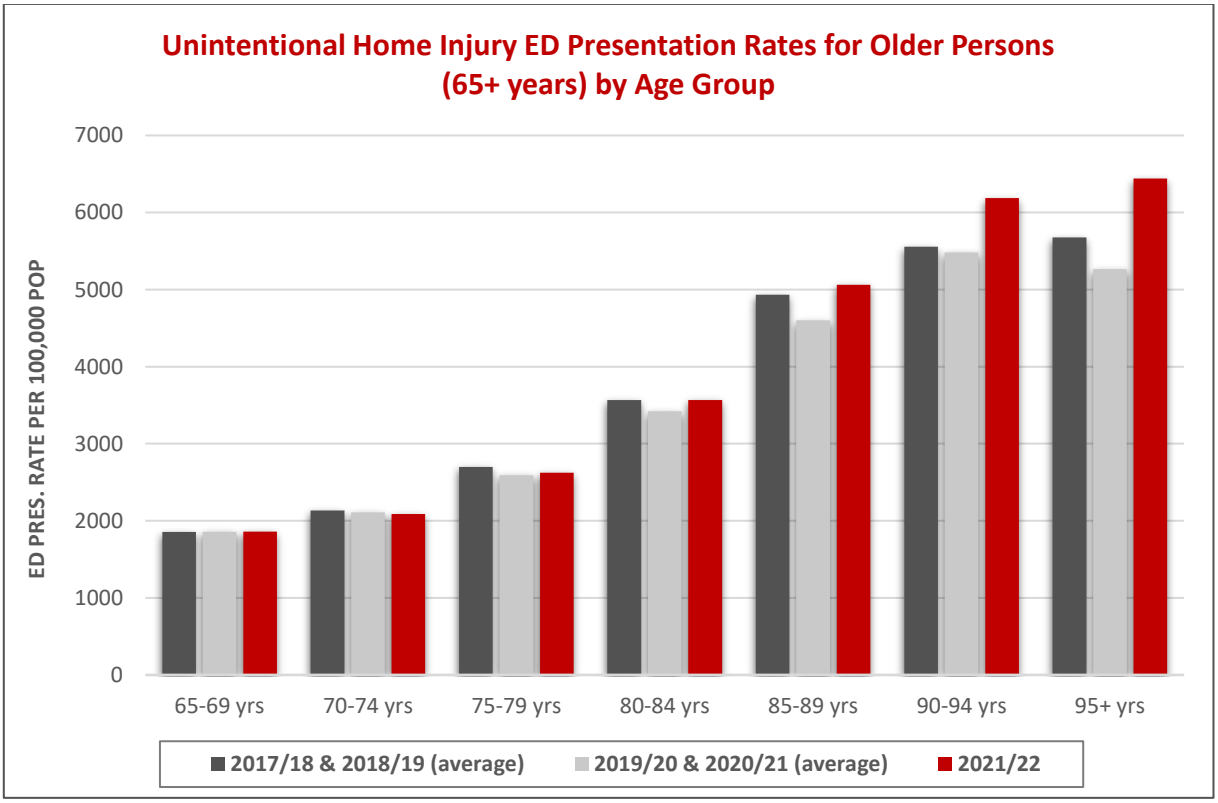

Figure 5: Emergency Department presentation rates for unintentional home injury by age for people aged 65 years and above

ED presentation rates for unintentional home injury, by male and female sex, are shown in Figure 6. Female unintentional home injury rates were lower than male rates in the 2017/18 – 2018/19 (baseline) period, the 2019/20 – 2020/21 period and in 2021/22 period ($p<0.01$ in each period).

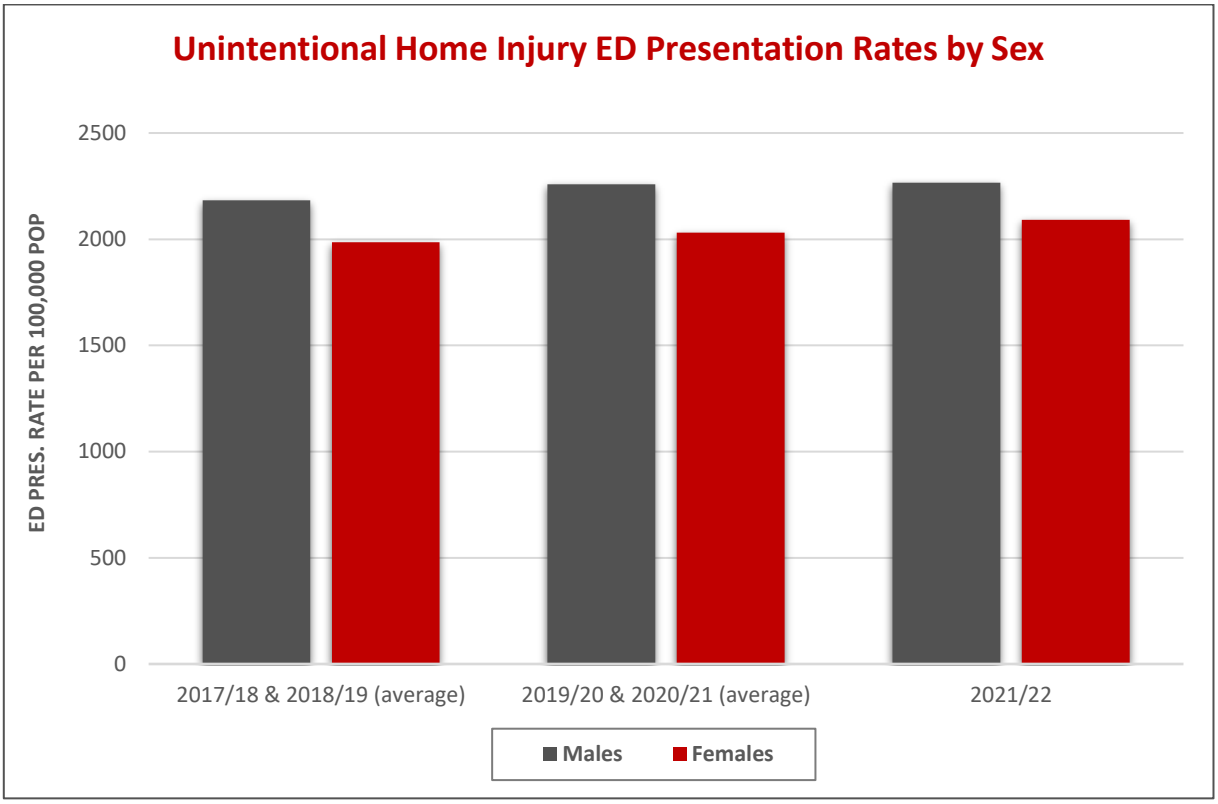

Figure 6: Emergency Department presentation rates for unintentional home injury by sex

The cause of unintentional home injury ED presentations, and the main injury type, as recorded in the VEMD, are summarised in Figure 7. In all three time-periods, the most common cause of injury in the home resulting in ED presentation was **falls**, followed by hit/struck/crush injury. The two most common injury types were open wounds and fractures (Figure 8).

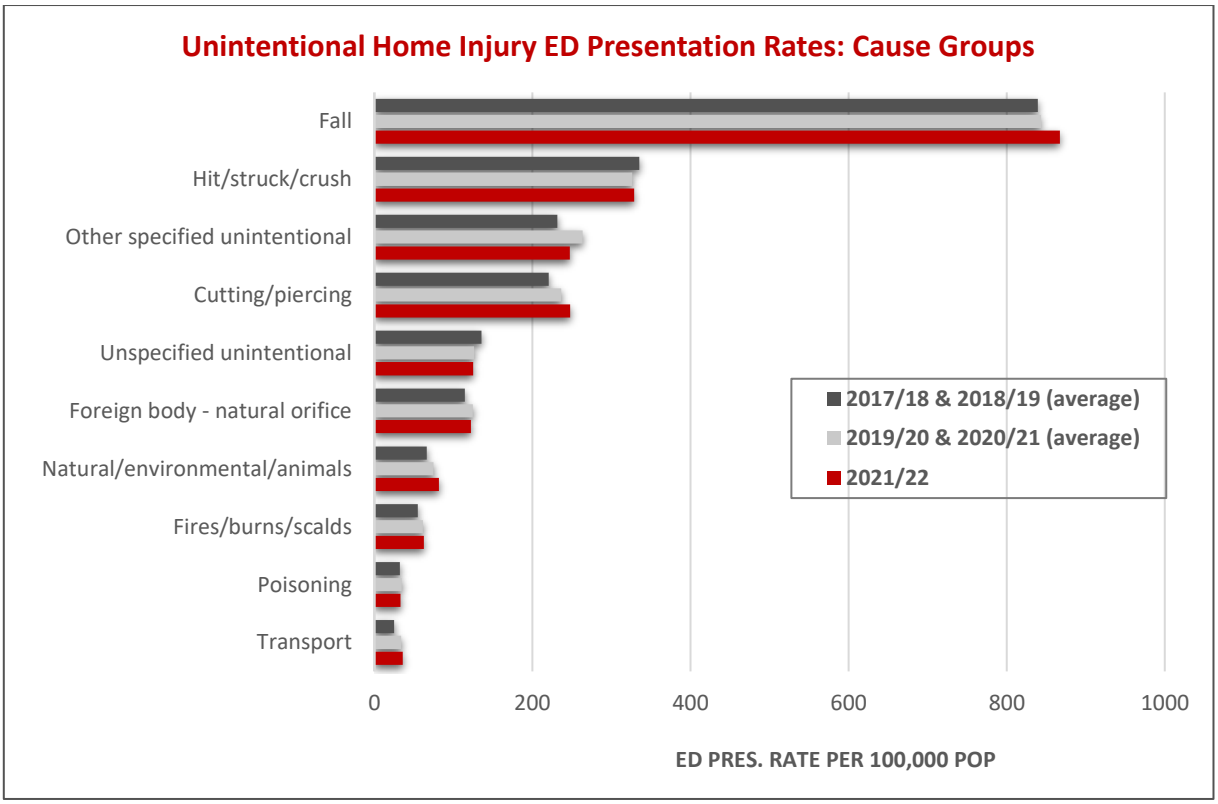

Figure 7: Emergency Department presentation rates for unintentional home injury by cause groups

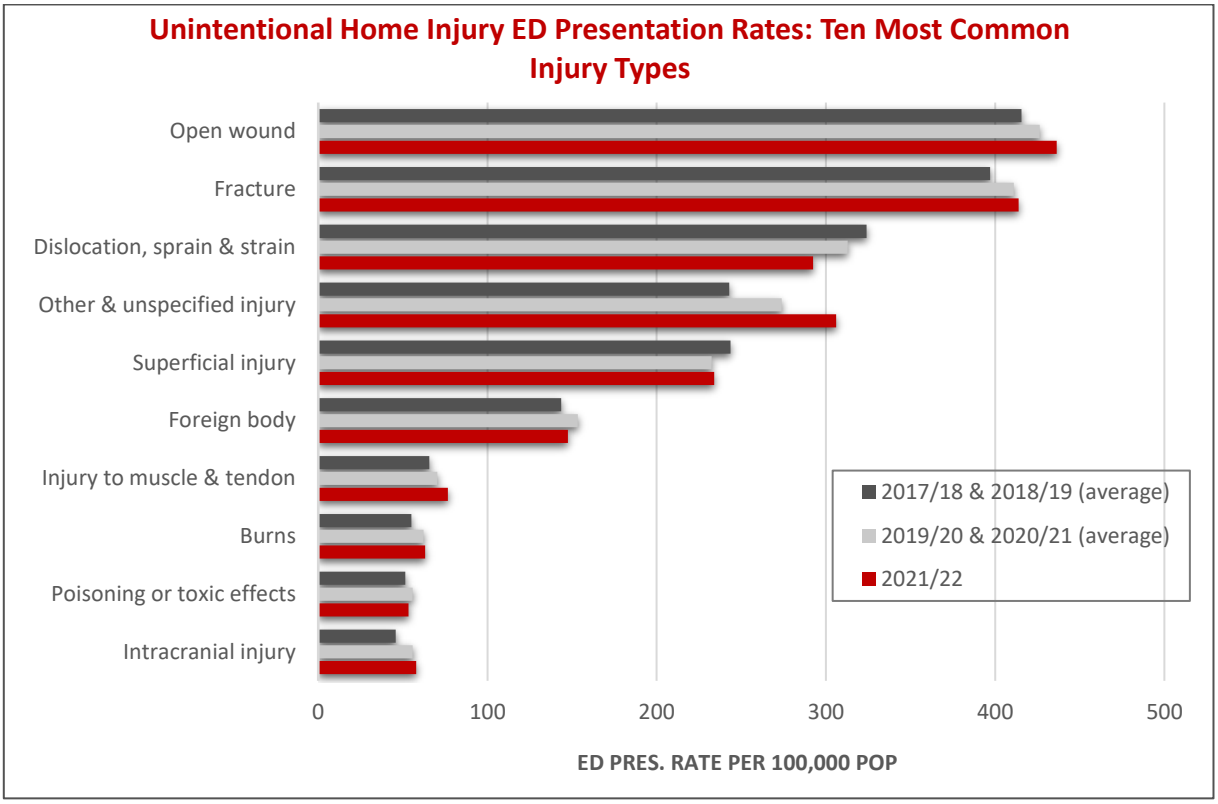

Figure 8: Emergency Department presentation rates for unintentional home injury by the ten most common injury types

Among people aged 75 years and above, the most common causes of unintentional home injury ED presentations are shown in Figure 9. In this age group, 71-74% of unintentional home injuries were caused by falls. Among all-age unintentional home injury ED presentations, this proportion is much smaller, with 41-42% of cases caused by falls.

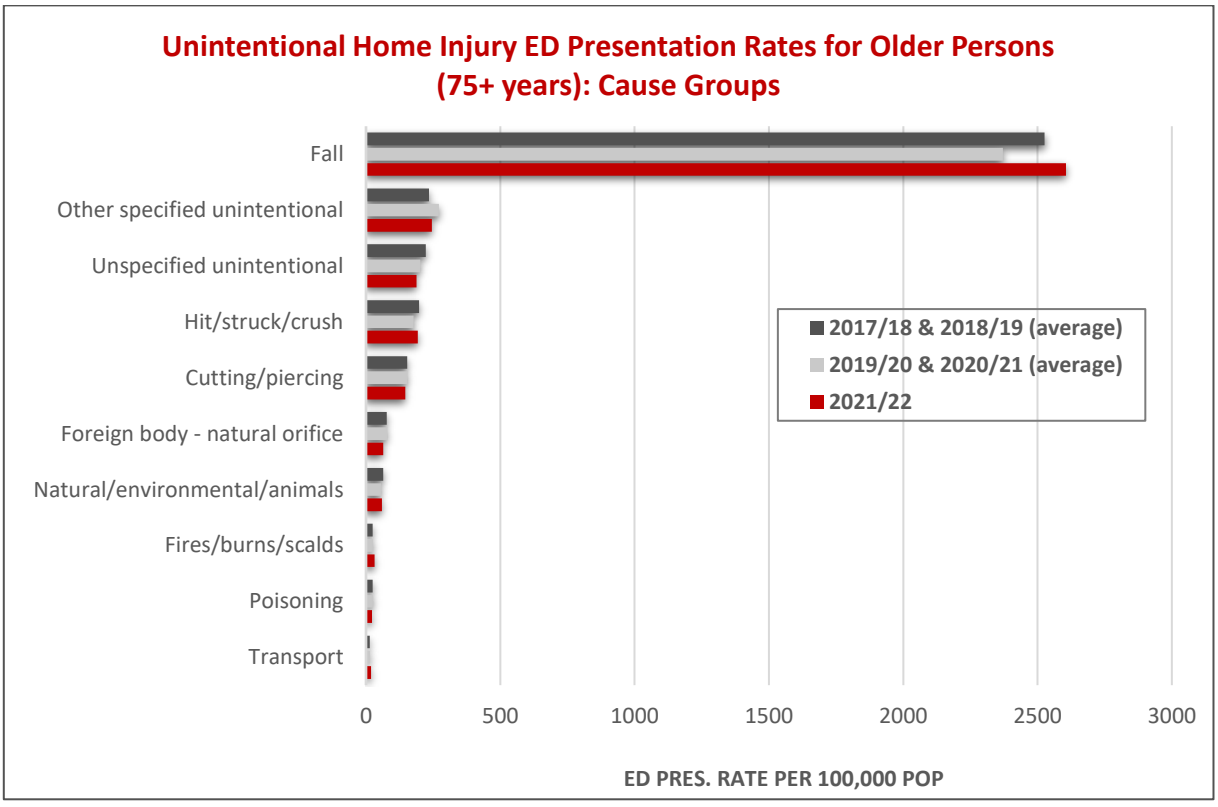

Figure 9: Emergency Department Presentation Rates for Unintentional Home Injury by Cause for Persons aged 75 years and above

SUMMARY: EMERGENCY DEPARTMENT PRESENTATIONS FOR UNINTENTIONAL HOME INJURY (VIC)

- Comparing 2021/22 to the baseline period of 2017/18-2018/19 (average over two years), the rate of ED presentations for unintentional home injury in Victoria increased statistically significantly from 2068 to 2165 (p=0.02).
- The rates of hospital admission subsequent to ED presentation for unintentional home injury were similar at baseline (2017/18-2018/19), in 2019/20-2020/21 and in 2021/22: 20.5%, 20.3% and 21.7%, respectively.
- Unintentional home injury occurred most commonly in the broad age group 0-14 years, followed by ages 65+ years, and relatively less commonly in the age groups 15-24 years and 25-64 years, at all three time-periods.
- Male unintentional home injury rates were higher than female unintentional home injury rates, in all three time periods (2017/18-2018/19, 2019/20-2020/21 and 2021/22).
- Unintentional home injury rates increased with age above 75 years; this increase continued until age 90-94 years. This pattern was observed in all three time-periods.
- The most common cause of unintentional home injury was falls (41-42% of cases): this held true at baseline (2017/18-2018/19), during COVID (2019/20-2020/21) and post-COVID (2021/22). Among people aged 75 years and above, ED injury presentations were due to falls in 71-74% of cases.
- In unintentional home injury ED presentations, the two most common injury types were open wounds and fractures.

4. WORK-RELATED INJURY

In 2021/22, there were 27,520 ED presentations for unintentional work-related injuries recorded in the Victorian Emergency Minimum Dataset (VEMD): the age-standardised annual rate was 431.8 work-related injury presentations per 100,000 population. This was not statistically different from the unintentional work-related injury rate of 437.1 per 100,000 in the baseline period 2017/18-2018/19 (p=0.52). The unintentional work-related injury rate during COVID-19 2019/20-2020/21 was lower than at baseline, at 403.6 per 100,000 (p<0.0001). These patterns are shown in Figure 10 below. Throughout this section, age-standardised rates were calculated based on the Victorian population, not based on Victorian workforce full-time equivalents.

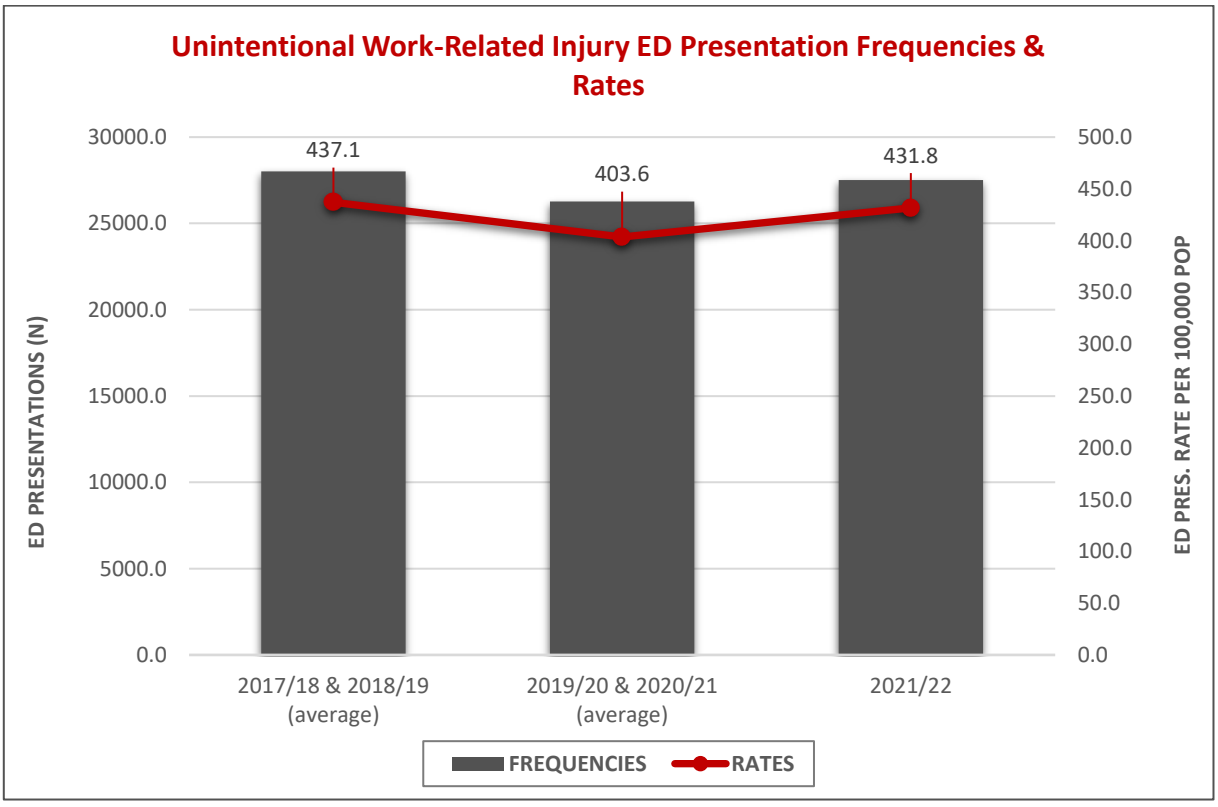

Figure 10: Emergency Department presentation frequencies and rates for unintentional work-related injury

Unintentional work-related injury rates by age group are shown in Figure 11, for ages 15 years and above. As work-related injuries are not relevant to children and less relevant to older age groups, the working age focus range is shown in 5-year age groups. The figure shows the rates per 100,000 population at baseline, 2017/18-2018/19 (averaged; dark grey bars), in the years including the onset of the pandemic, 2019/20-2020/21 (averaged; light grey bars); and in 2021/22 (red bars). The COVID-19 period is included for completeness, but a more detailed analysis of this time period is the focus of earlier editions of this bulletin[4]. In all three time-periods, (general) population-based work-related injury rates were highest in the 20-24 year age group and declined with increasing age through to the 65+ year age category.

[4] https://www.monash.edu/muarc/research/research-areas/home-and-community/visu/injuries-during-the-covid-19-pandemic

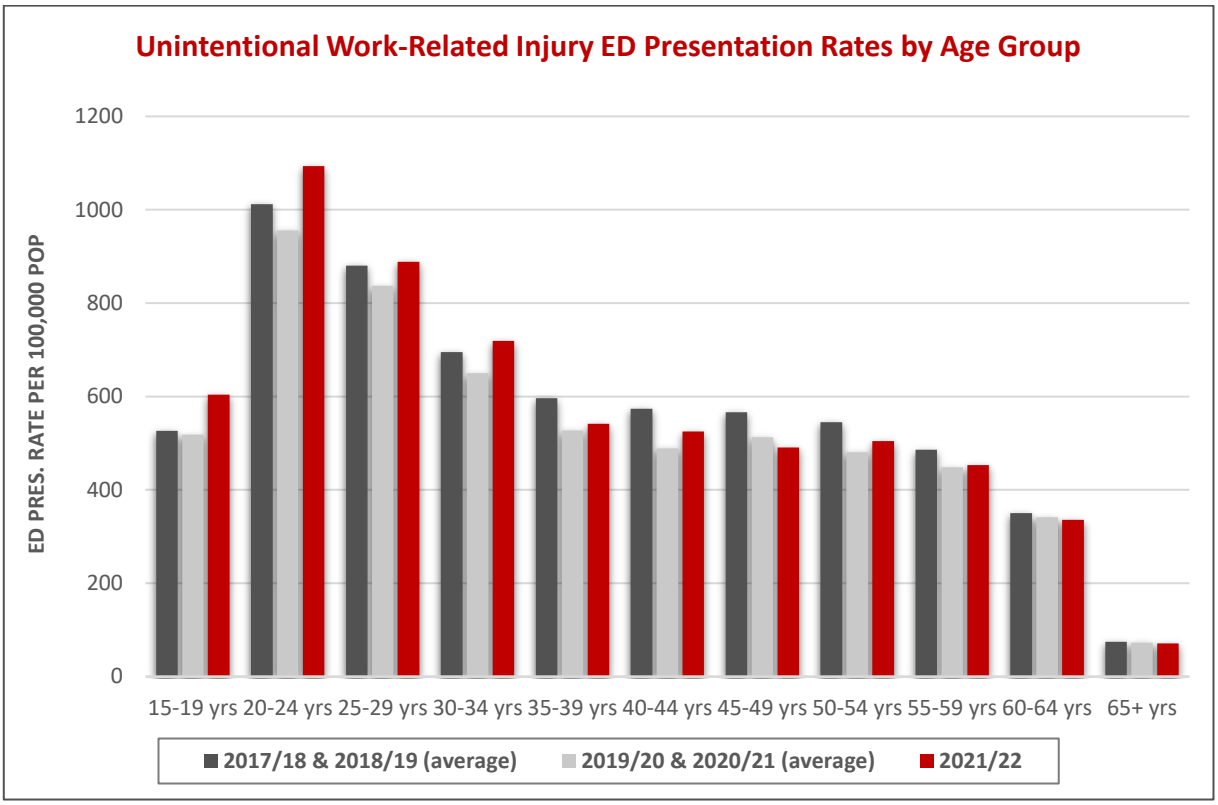

Figure 11: Emergency Department presentation rates for unintentional work-related injury by age group

ED presentation rates for unintentional work-related injury, by male and female sex, are shown in Figure 12. Female unintentional work-related injury rates were lower than male rates in the 2017/18 – 2018/19 (baseline) period, the 2019/20 – 2020/21 period and in 2021/22 period ($p<0.0001$ in each period).

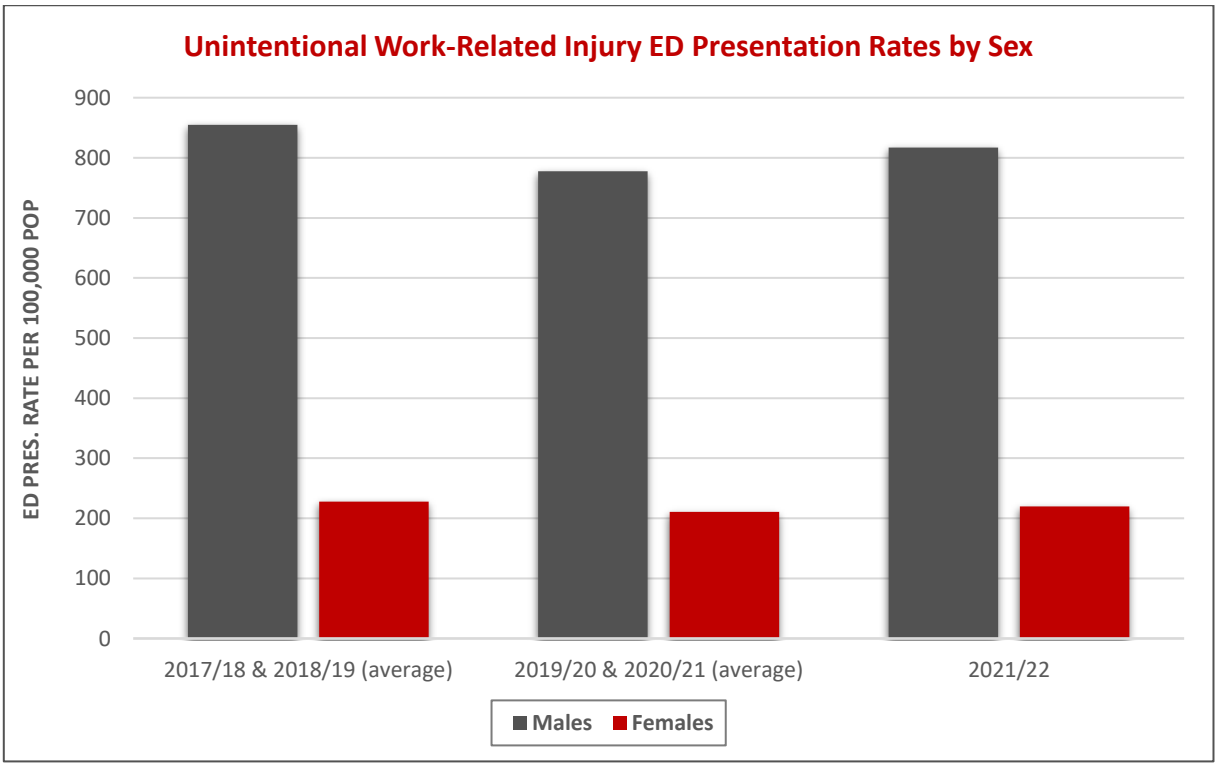

Figure 12: Emergency Department presentation rates for unintentional work-related injury by sex

The place of occurrence of unintentional work-related injury is shown in Figure 13 below: dark grey bars indicate the baseline period (2017/18-2018/19, averaged); light grey bars indicate the COVID-19 period 2019/20-2020/21, averaged) and red bars indicate 2021/22. In all three time-periods, the most common place of occurrence was Trade and service area, followed by Industrial and construction area. Home injury was ranked 6th most common place of occurrence for all three time-periods.

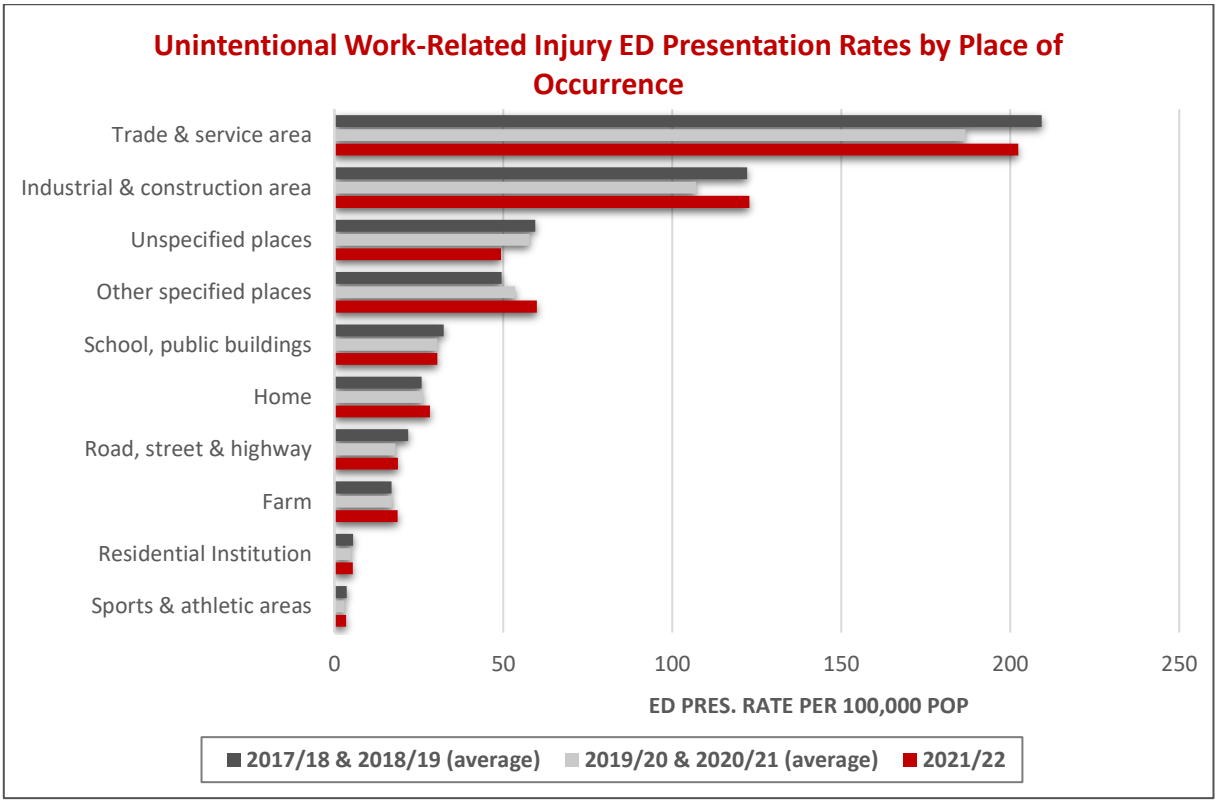

Figure 13: Emergency Department presentation rates for unintentional work-related injury by place of occurrence

The cause of unintentional work-related injury ED presentations, and the main injury type, as recorded in the Victorian Emergency Minimum Dataset, are summarised in the graphs below (Figure 14, Figure 15). In the baseline period (2017/18-2018/19), the most common cause of unintentional work-related injury was hit/struck/crush, followed by cutting/piercing, and falls. In the COVID-19 period (2019/20-2020/21) as well as in 2021/22, the two most common causes were hit/struck/crush and cutting piercing, followed by falls. In all three time-periods, the most common work-related injury type was open wounds.

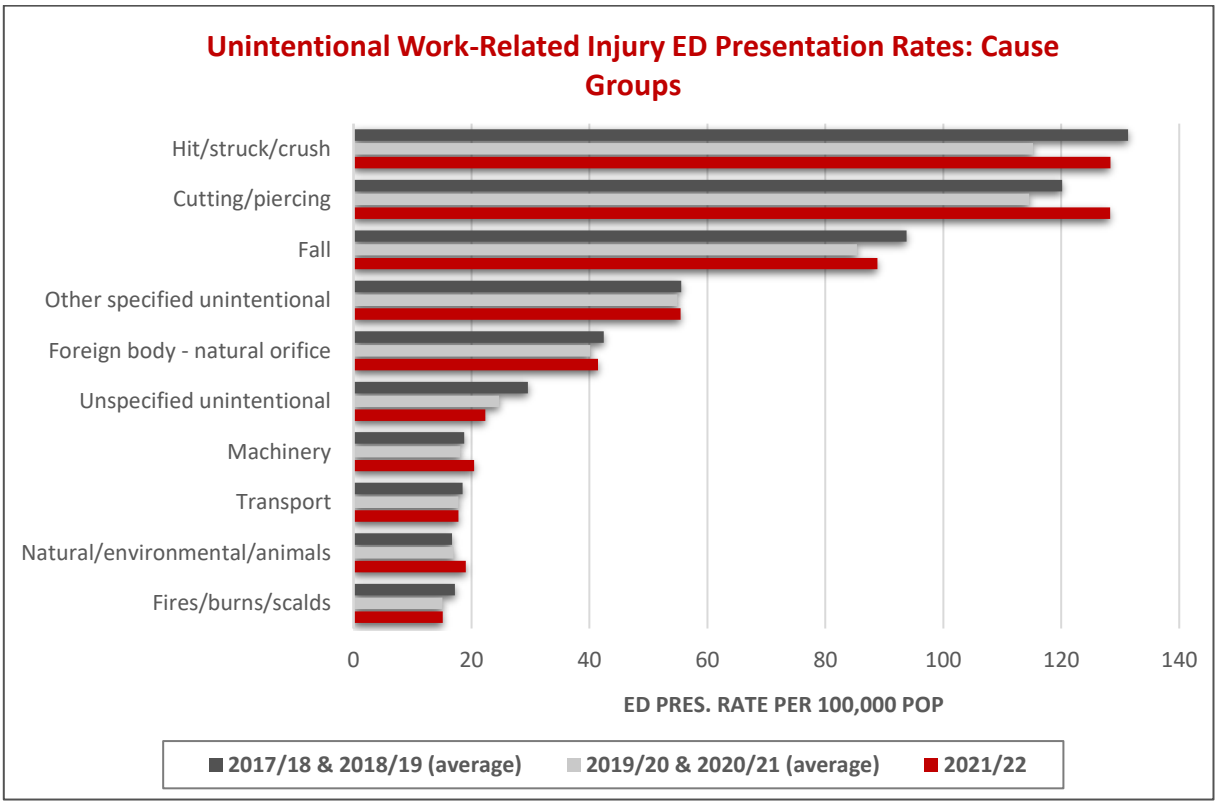

Figure 14: Emergency Department presentation rates for unintentional work-related injury by cause groups

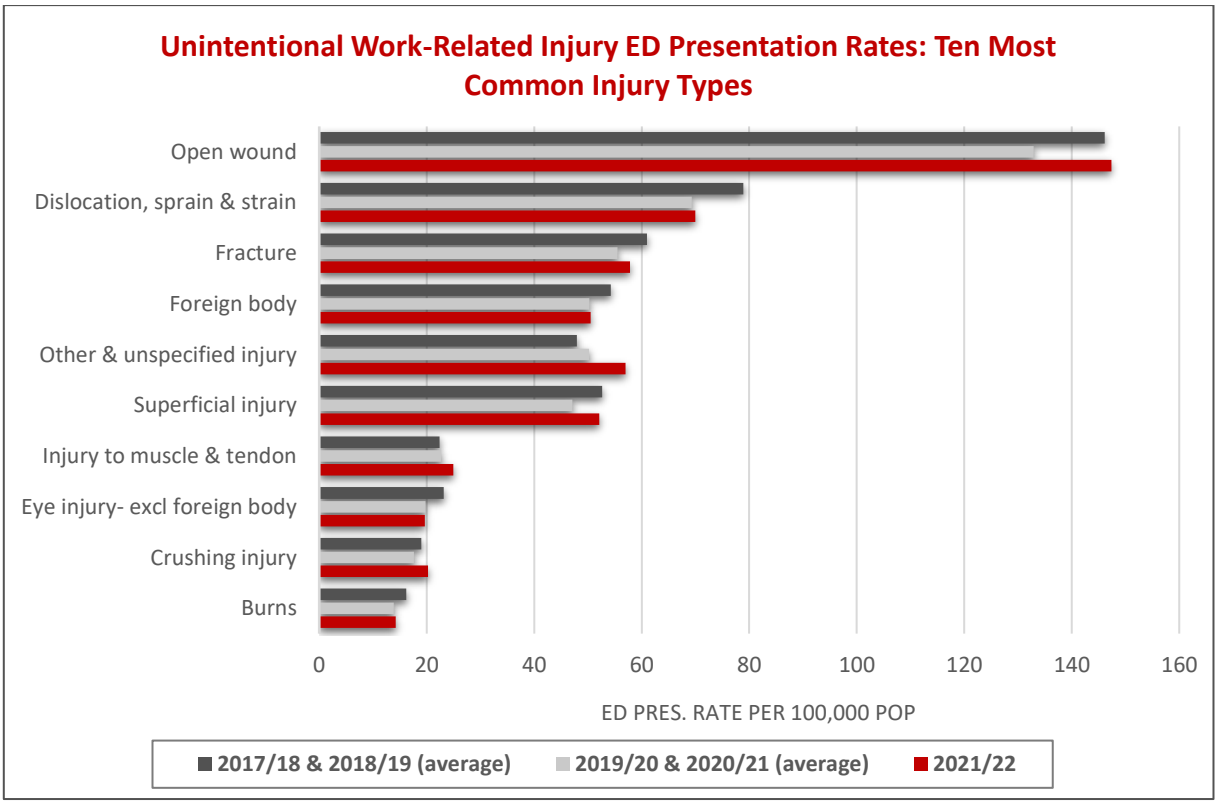

Figure 15: Emergency Presentation rates for unintentional work-related injury by the ten most common injury types

SUMMARY: ED PRESENTATIONS FOR UNINTENTIONAL WORK-RELATED INJURY (VIC)

- Comparing 2021/22 to the baseline period of 2017/18-2018/19 (average over two years), the rate of ED presentations for unintentional work-related injury in Victoria did not change statistically significantly.
- Rates are based on the general Victorian population by age group, not specified to workforce participation or full-time equivalents.
- The rates of hospital admission subsequent to ED presentation for unintentional work-related were 15.8% in 2017/18-2018/19 (baseline), 15.4% in 2019/20-2020/21 and 14.4% in 2021/22.
- Unintentional work-related injury was most common in the age group 20-24 years, and rates decreased with increasing age through to the 65+ year age group, in all three time periods.
- Male unintentional work-related injury rates were higher than female unintentional work-related injury rates, in all three time periods (2017/18-2018/19, 2019/20-2020/21 and 2021/22).
- The most common two causes of unintentional work-related injury were hit/struck/crush and cutting/ piercing, in all three time-periods.
- In unintentional work-related injury ED presentations, the two most common injury types were open wounds and dislocation, sprain & strain, at baseline, during the COVID-19 period and in 2021/22.

5. FARM INJURY

In 2021/22, there were 3243 ED presentations for farm injuries recorded in the Victorian Emergency Minimum Dataset (VEMD): the age-standardised annual rate was 49.6 farm injury presentations per 100,000 population. This was not statistically significantly different from the farm injury rate of 50.1 per 100,000 in the baseline period 2017/18-2018/19 (p=0.86). The farm injury rate during COVID-19, 2019/20-2020/21, was also not significantly different from the baseline rate, at 52.2 per 100,000 (p=0.40). These patterns are shown in Figure 16 below.

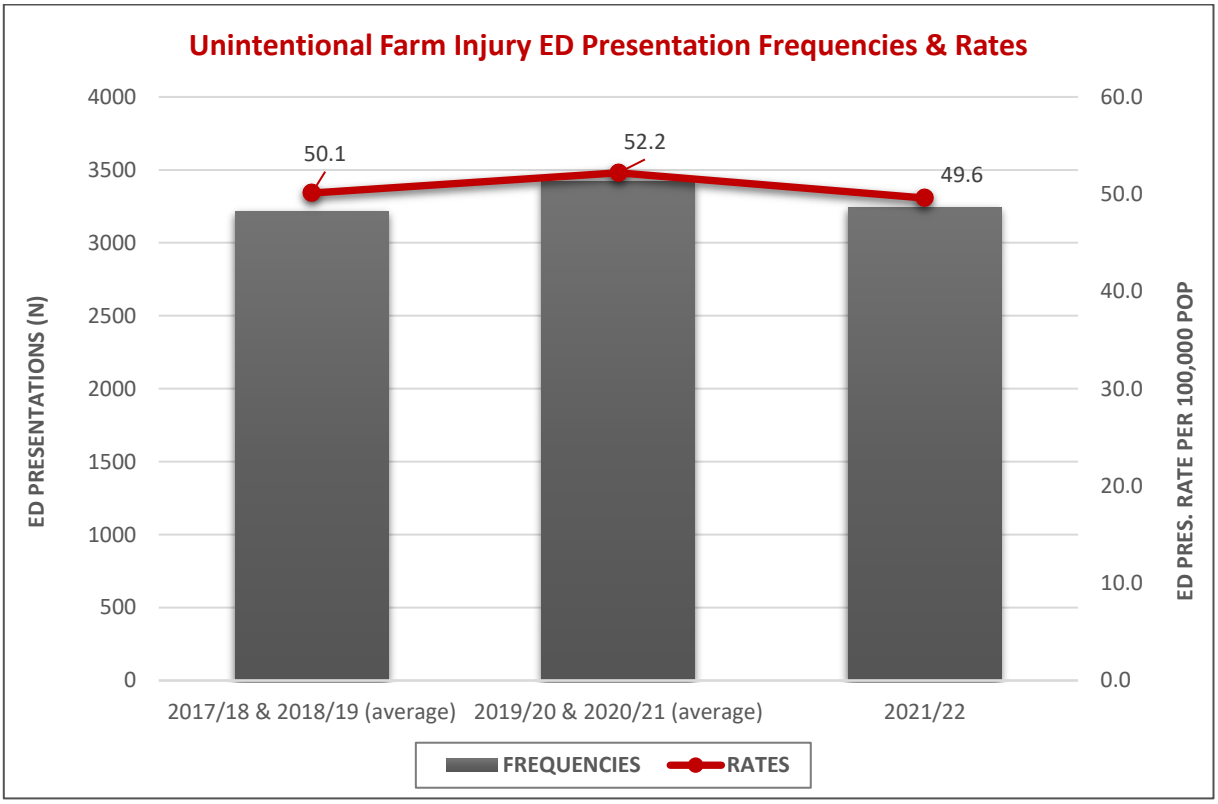

Figure 16: Emergency Department presentation frequencies and rates for unintentional farm injury

Unintentional farm injury rates by broad age groups are shown in Figure 17. The figure shows the rates per 100,000 population at baseline, 2017/18-2018/19 (averaged; dark grey bars), in the years including the onset of the pandemic, 2019/20-2020/21 (averaged; light grey bars); and in 2021/22 (red bars). The COVID-19 period is included for completeness, but a more detailed analysis of this time period is the focus of earlier editions of this bulletin[5]. In all three time-periods, unintentional farm injury rates were highest in the 15-24 year age group and lowest in the 0-14 year age group. Notably, rates were calculated based on the general Victorian population, and not based on the population residing on farms in Victoria.

[5] https://www.monash.edu/muarc/research/research-areas/home-and-community/visu/injuries-during-the-covid-19-pandemic

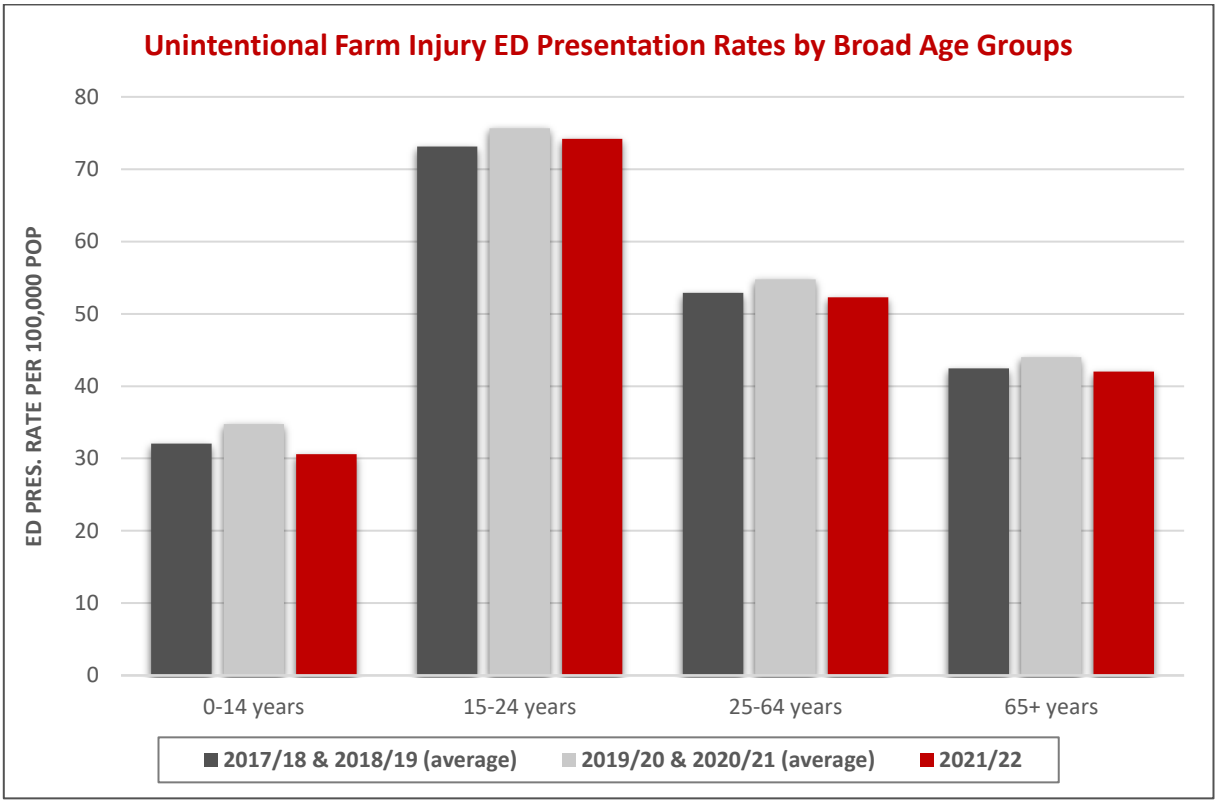

Figure 17: Emergency Department presentation rates for unintentional farm injury by broad age group

ED presentation rates for unintentional farm injury, by male and female sex, are shown in Figure 18Figure *6*. Female unintentional farm injury rates were lower than male rates in the 2017/18 – 2018/19 (baseline) period, the 2019/20 – 2020/21 period and in 2021/22 period ($p<0.0001$ in each period).

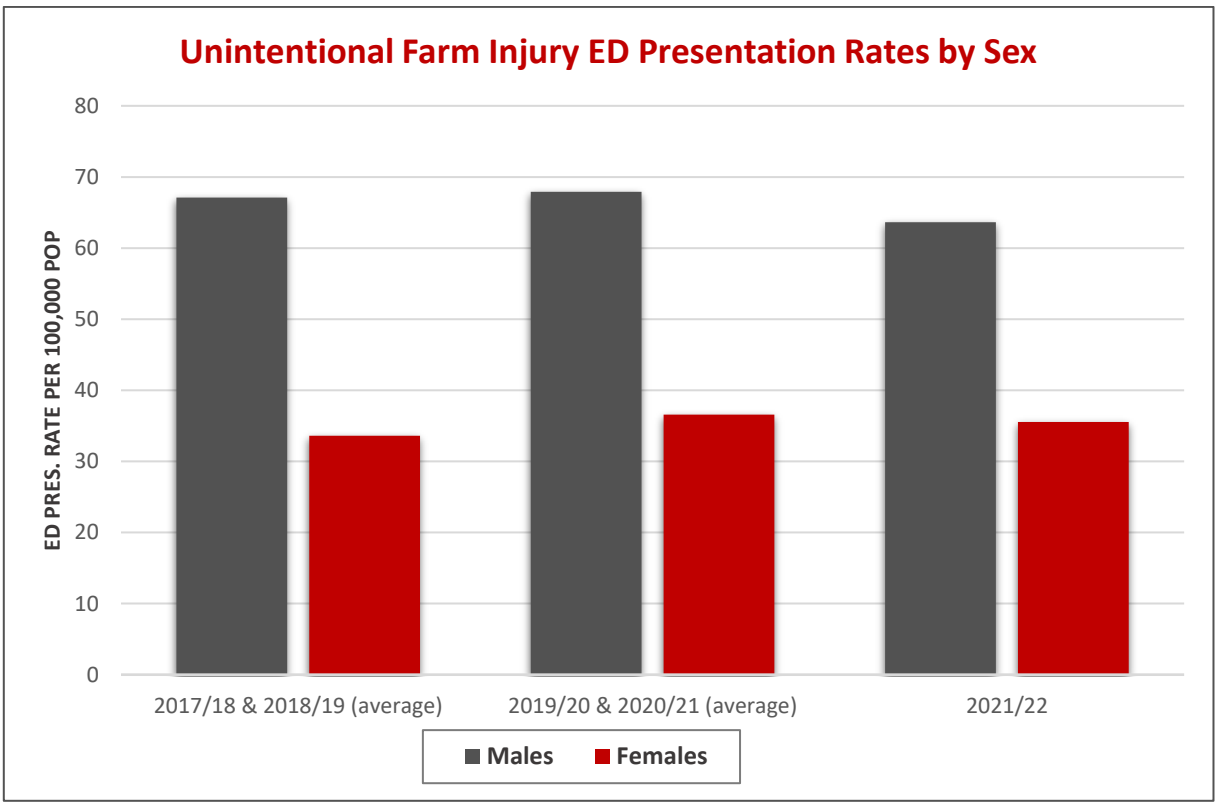

Figure 18: Emergency Department presentation rates for unintentional farm injury by sex

The cause of unintentional farm injury ED presentations, and the main injury type, as recorded in the Victorian Emergency Minimum Dataset, are summarised in Figure 19 and Figure 20. In all three time-periods, the most common cause of farm injury resulting in ED presentation was transport, followed by fall-related injuries. The most common injury type, in both time-periods under comparison, was fracture, followed by open wounds.

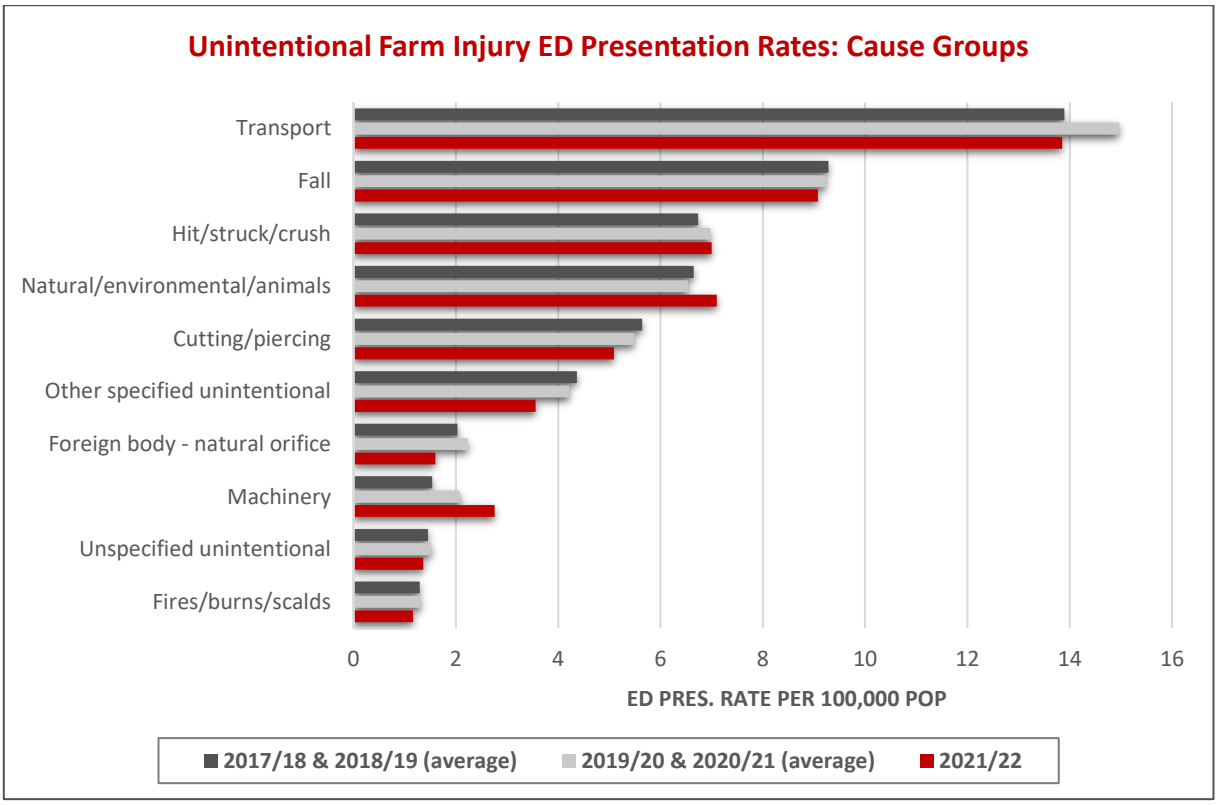

Figure 19: Emergency Department presentation rates for unintentional farm injury by cause groups

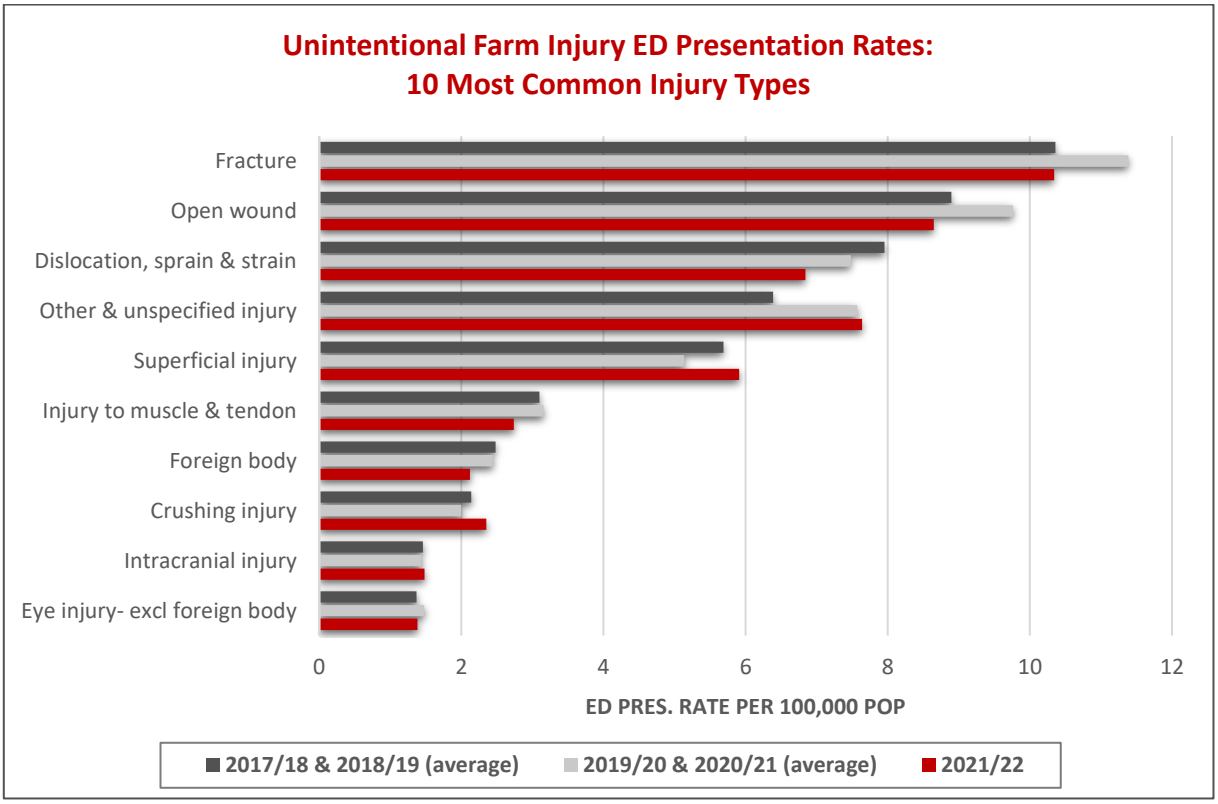

Figure 20: Emergency Department presentation rates for unintentional farm injury by the ten most common injury types

SUMMARY: ED PRESENTATIONS FOR UNINTENTIONAL FARM INJURY (VIC)

- Comparing 2021/22 to the baseline period of 2017/18-2018/19 (average over two years), the rate of ED presentations for unintentional farm injury in Victoria did not significantly change.
- The rates of hospital admission subsequent to ED presentation for farm injury were 20.9% in 2017/18-2018/19 (baseline), 21.7% in 2019/20-2020/21 and 22.1% in 2021/22.
- Unintentional farm injury was most common in the broad age group 15-24 years, followed by ages 25-64 years, at all three time-periods.
- Male unintentional farm injury rates were higher than female unintentional farm injury rates, in all three time periods (2017/18-2018/19, 2019/20-2020/21 and 2021/22).
- Notably, farm injury rates were calculated based on the general Victorian population, not based on the population residing on farms in Victoria.
- The most common cause of unintentional farm injury was transport, followed by falls: this held true at baseline (2017/18-2018/19), during COVID-19 (2019/20-2020/21) and in 2021/22.
- In unintentional farm injury ED presentations, the two most common injury types were fractures and open wounds, in all three time-periods.

6. SPORTS INJURY

In 2021/22, there were 51,872 ED presentations for sports injuries recorded in the Victorian Emergency Minimum Dataset (VEMD): the age-standardised annual rate was 857.3 sports injury presentations per 100,000 population. This was still lower than the sports injury rate of 998.9 per 100,000 in the baseline period 2017/18-2018/19 (p<0001). The sports injury rate during COVID-19, 2019/20-2020/21 was well below baseline, at 787.0 per 100,000 (p<0001). These patterns are shown in the Figure 21 below.

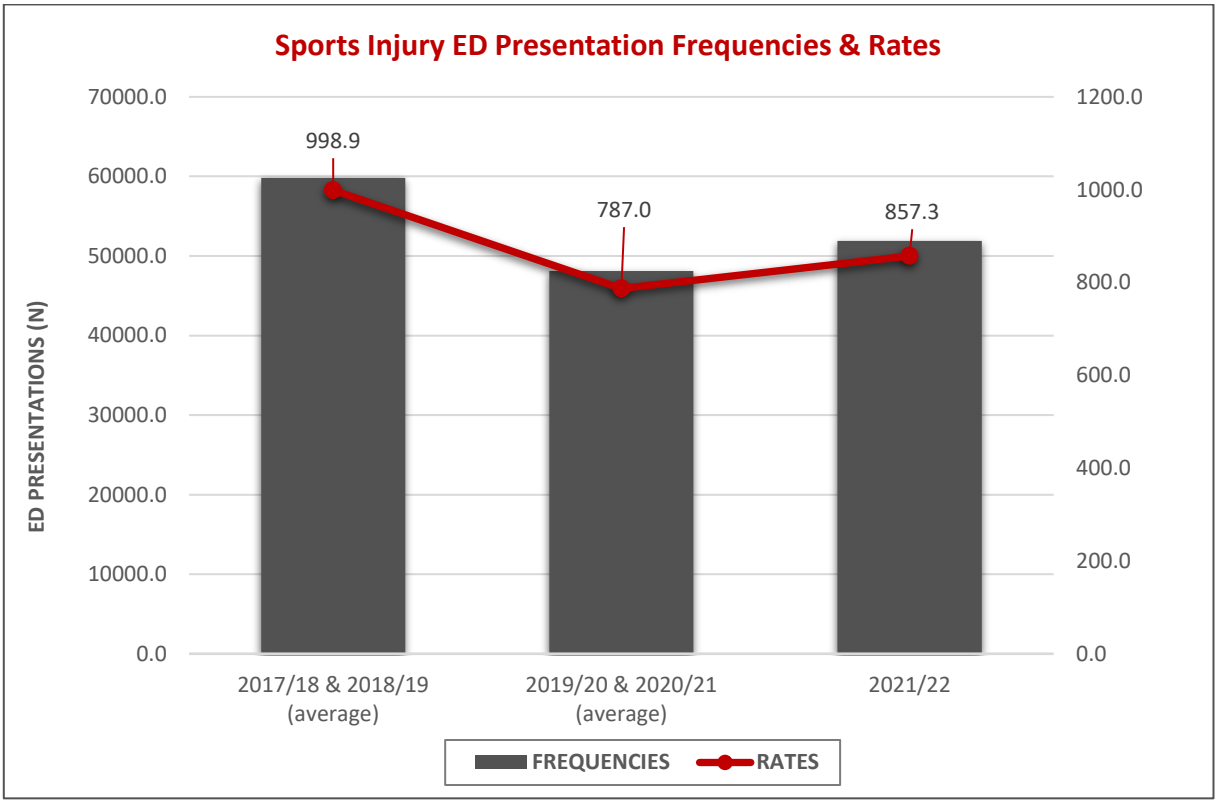

Figure 21: Emergency Department presentation frequencies and rates for sports injury

Sports injury rates by broad age groups are shown in Figure 22. The figure shows the rates per 100,000 population at baseline, 2017/18-2018/19 (averaged; dark grey bars), in the years including the onset of the pandemic, 2019/20-2020/21 (averaged; light grey bars); and in 2021/22 (red bars). The COVID-19 period is included for completeness, but a more detailed analysis of this time period is the focus of earlier editions of this bulletin[6]. In all three-time periods, sports injury rates were highest in the 15-24 year age group and lowest in the 65+ year age group.

[6] https://www.monash.edu/muarc/research/research-areas/home-and-community/visu/injuries-during-the-covid-19-pandemic

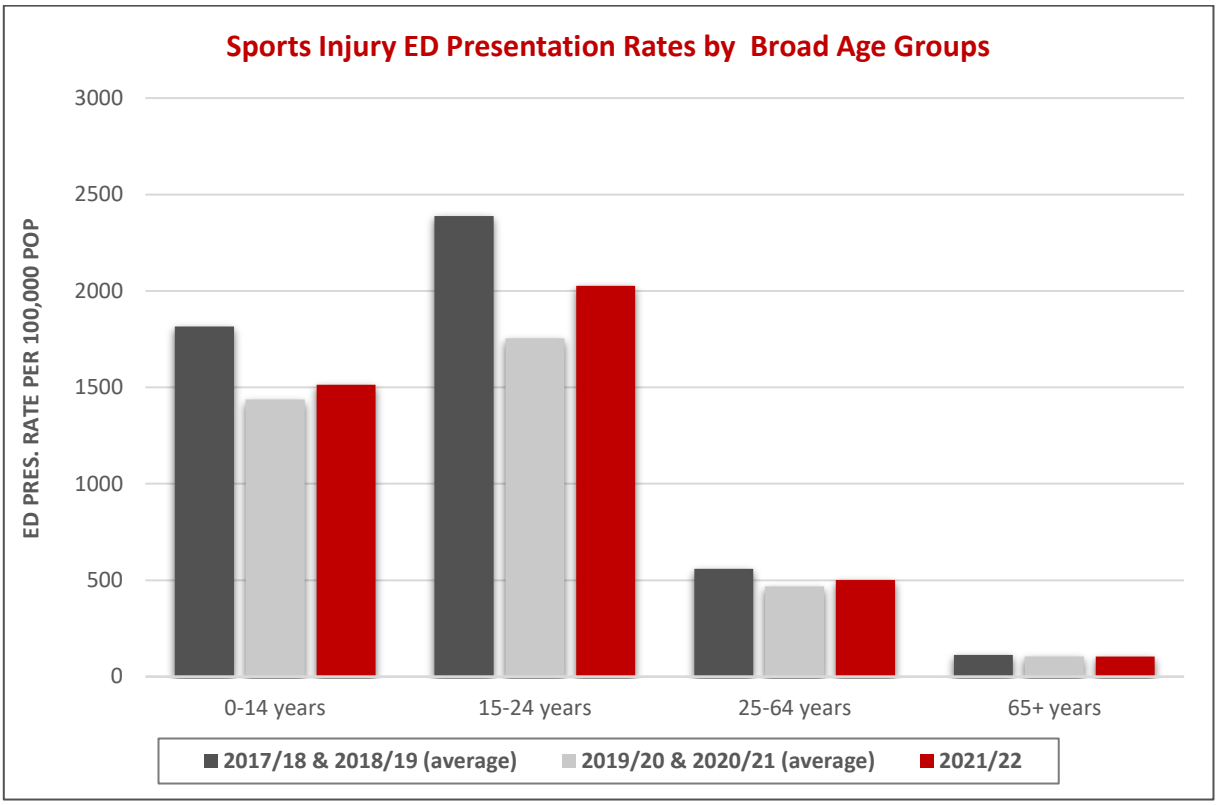

Figure 22: Emergency Department presentation rates for sports injury by broad age groups

ED presentation rates for sport-related injury, by male and female sex, are shown in Figure 23. Female sports injury rates were lower than male rates in the 2017/18 – 2018/19 (baseline) period, the 2019/20 – 2020/21 period and in 2021/22 period ($p<0.0001$ in each period).

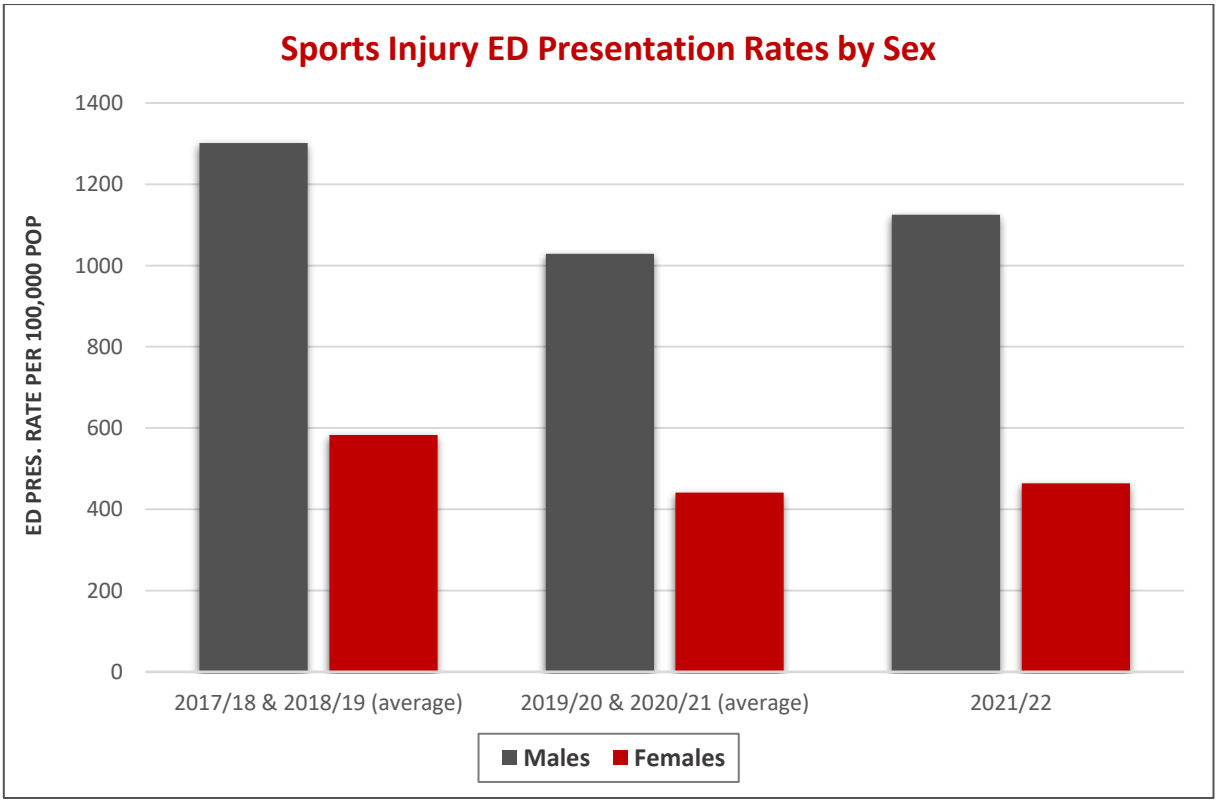

Figure 23: Emergency Department presentation rates for sports injury by sex

The place of occurrence of sports injury is shown in Figure 24 below: dark grey bars indicate the baseline period (2017/18-2018/19, averaged); light grey bars indicate the COVID-19 period (2019/20-2020/21, averaged) and red bars indicate 2021/22. In both time-periods, the most common place of occurrence was Sports & athletics areas. Home injury was ranked 4th most common place of occurrence for sports injury at baseline; tied 3rd place in the COVID-19 period of 2019/20-2020/21, together with *unspecified places*; and home was the 3rd most common place of occurrence in 2021/22.

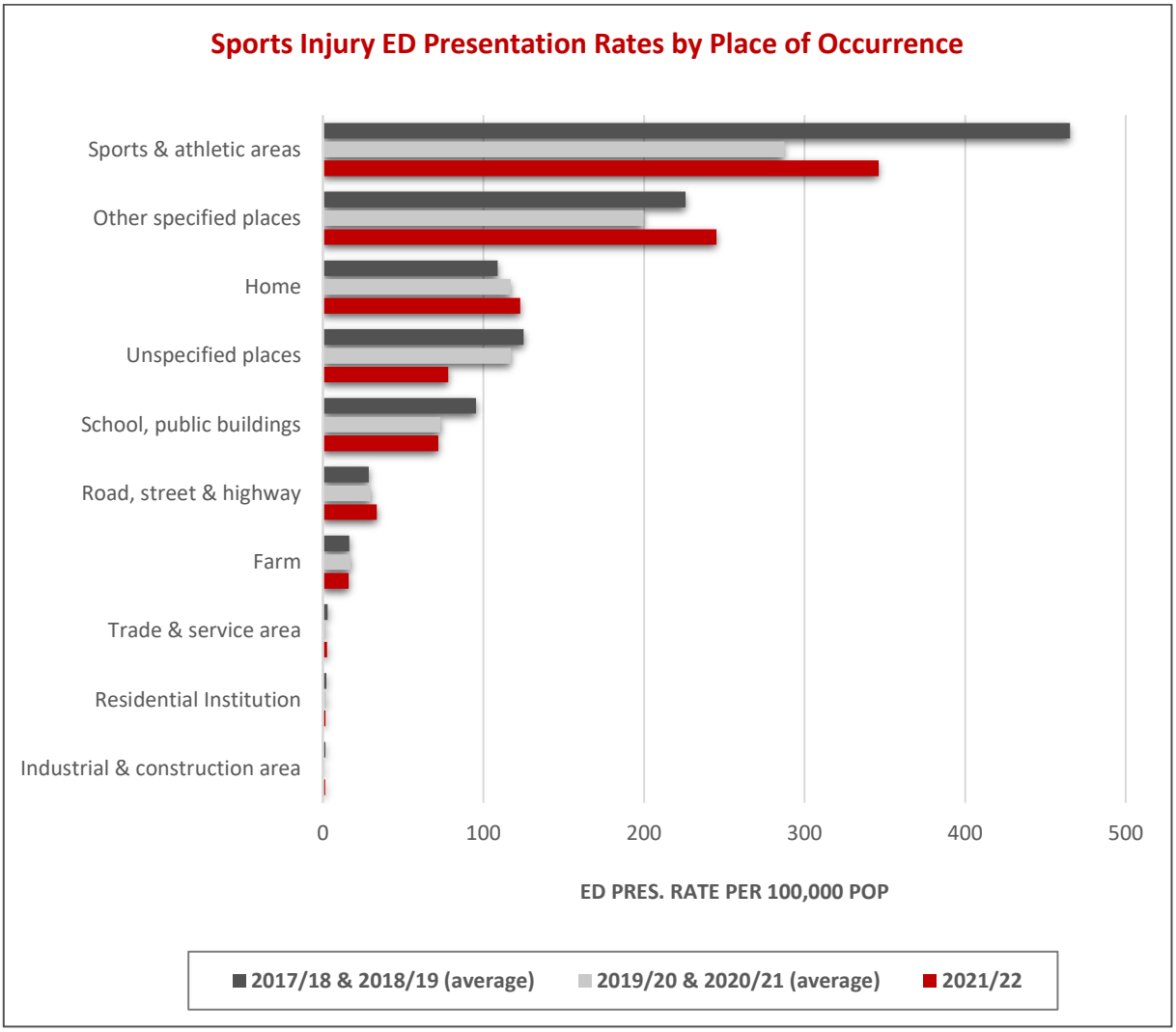

Figure 24: Emergency Department presentation rates for sports injury by place of occurrence

The ten most common sports injury ED presentations, and the main injury types, as recorded in the Victorian Emergency Minimum Dataset, are summarised in Figure 25 and Figure 26, respectively. In the baseline period, 2017/18-2018/19, the most common sports injury ED presentations were related to Australian Rules football and unspecified sport & exercise activity (tied), followed by basketball and soccer. In the COVID-19 period (2019/20- 2020/21) and in 2021/22, the most common sports injury ED presentations were for unspecified sport & exercise activity, followed by Australian Rules football and cycling. The most common injury type at baseline was dislocation, sprain and strain, followed by fractures. In the COVID-19 period and 2021/22, the order was reversed with fractures being the most common injury type, followed by dislocation, sprain and strain.

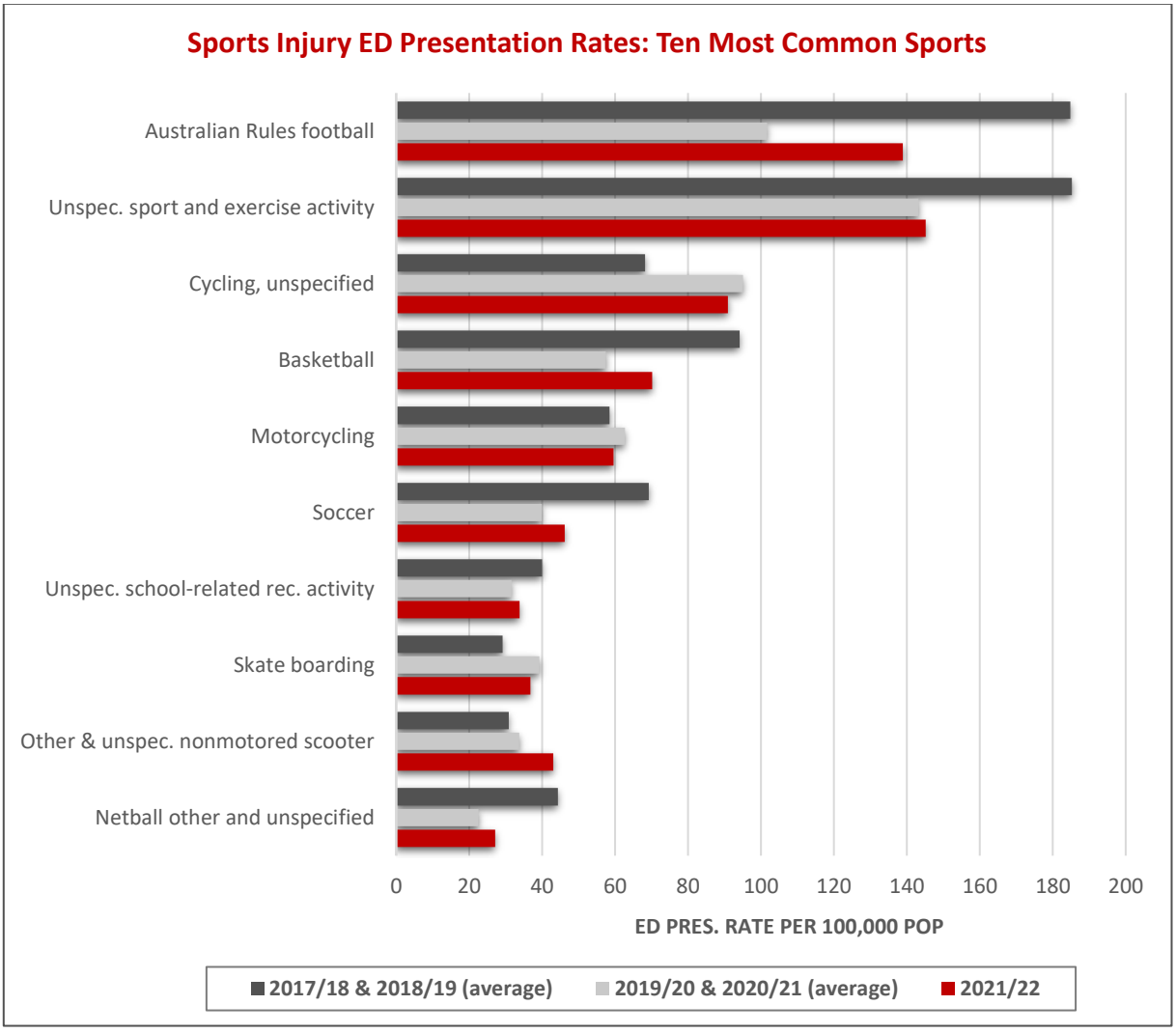

Figure 25: Emergency Department presentation rates for sports injury by the ten most common sports

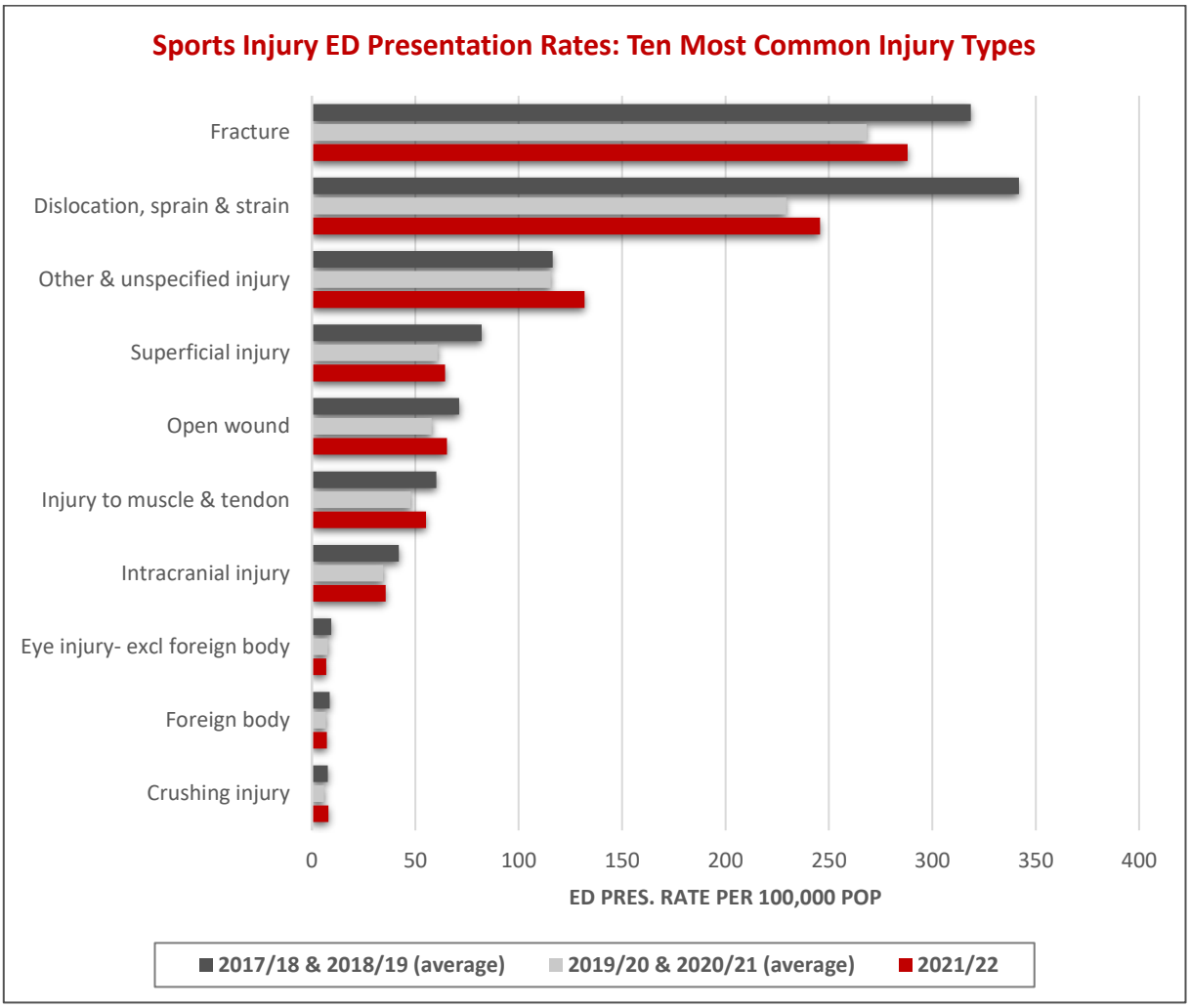

Figure 26: Emergency Department presentation rates for sports injury by the ten most common injury types

SUMMARY: ED PRESENTATIONS FOR SPORTS INJURY (VIC)

- Comparing 2021/22 to the baseline period of 2017/18-2018/19 (average over two years), the rate of ED presentations for sports injury in Victoria was lower in 2021/22 (857 vs. 999 per 100,000 population at baseline; $p<0.0001$).
- The rates of hospital admission subsequent to ED presentation for sports injury were 13.3% in 2017/18-2018/19 (baseline), 15.9% in 2019/20-2020/21 and 14.0% in 2021/22.
- Sports injuries were most common in the broad age group 15-24 years, followed by ages 0-14 years, and relatively uncommon at ages 65+ years, in all three time-periods.
- Male sports injury rates were higher than female sports injury rates, in all three time periods (2017/18-2018/19, 2019/20-2020/21 and 2021/22).
- In ED presentations for sports injuries in all three time-periods, Australian Rules football and unspecified sport and exercise activity were the two most commonly cited sports.
- Fracture and dislocation, sprain & strain were the two most common injury types in sport-related ED presentations in 2017/18-2018/19 (baseline), 2019/20-2020/21 and 2021/22.

7. INTENTIONAL INJURY

In 2021/22, there were 11,568 ED presentations for intentional injuries recorded in the Victorian Emergency Minimum Dataset (VEMD): 9588 for self-harm injuries and 1980 for assault in the home injuries (Figure 27 and Figure 28). The age-standardised annual rates were 156.8 and 30.9 ED presentations per 100,000 population, for self-harm and assault in the home injuries, respectively. For intentional self-harm injuries, the rate in 2021/22 was not statistically significantly different to the rate in the baseline period 2017/18-2018/19, which was 147.1 (p=0.37). In the COVID-19 period, 2019/20-2020/21, the rate was 150.8, which is also not statistically significantly different from the rate in the baseline period 2017/18-2018/19 (p=0.70). For assault in the home injuries, the rate in 2021/22 was not statistically significantly different to the rate in the baseline period 2017/18-2018/19, which was 29.4 (p=0.21). In the COVID-19 period, 2019/20-2020/21, the assault in the home injury rate was 32.0 ED presentations per 100,000, which is slightly higher than the rate in the baseline period 2017/18-2018/19 (p=0.01).

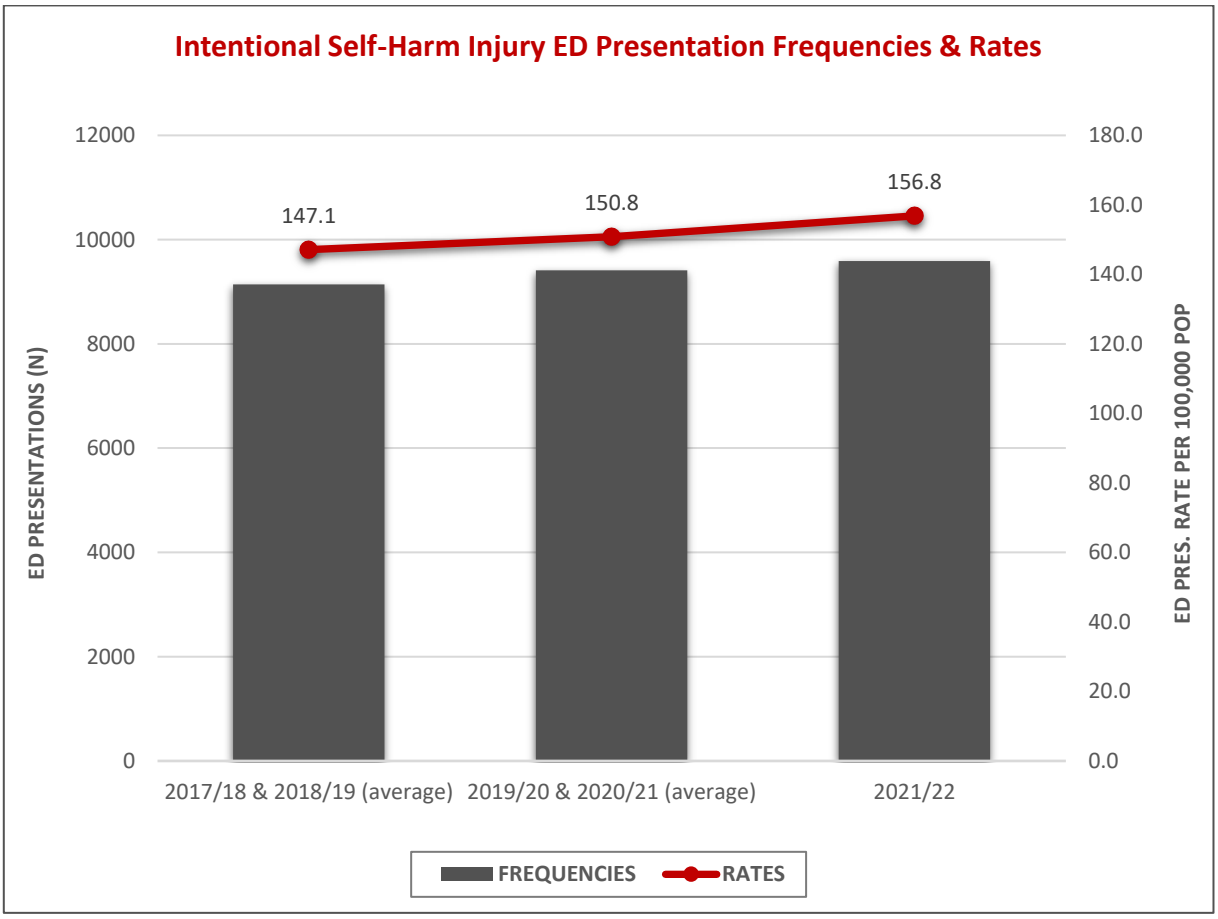

Figure 27: Emergency Department presentation frequencies and rates for intentional self-harm injury

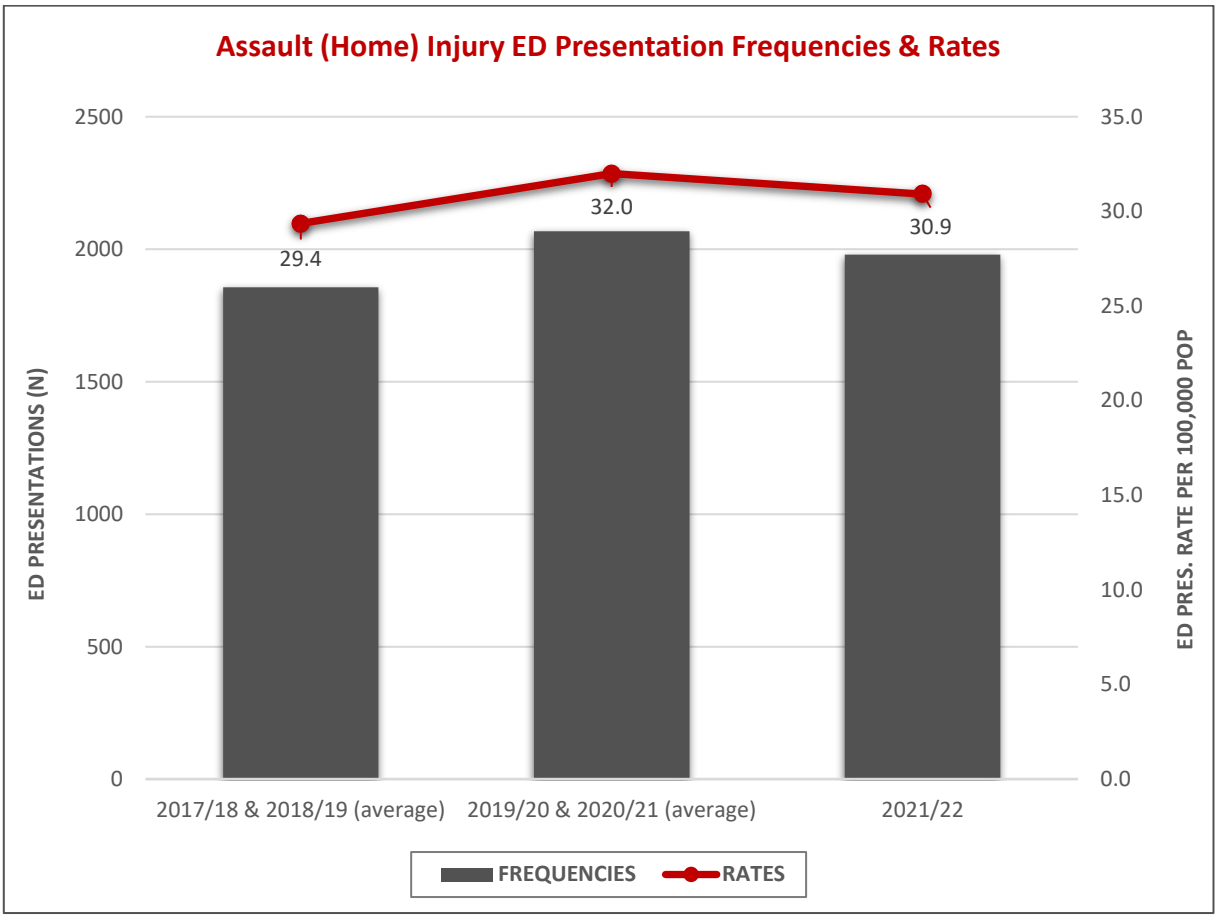

Figure 28: Emergency Department presentation frequencies and rates for assault injury occurring in the home

Intentional self-harm injury rates and assault in the home injury rates by broad age groups are shown in Figure 29 and Figure 30. Both figures show the rates per 100,000 population at baseline, 2017/18-2018/19 (averaged; dark grey bars), in the years including the onset of the pandemic, 2019/20-2020/21 (averaged; light grey bars); and in 2021/22 (red bars). The COVID-19 period is included for completeness, but a more detailed analysis of this time-period is the focus of earlier editions of this bulletin[7]. Self-harm injury ED presentation rates were highest in the 15-24 year age group, in all three time-periods; in this age group, the rate in 2021/22 was above the 2017/18-2018/19 (baseline) rate (p=0.05). Assault in the home injury rates were highest in the 15-24 year age group (adolescents and young adults) followed by the 25-64 year age group (adults) in all three time-periods.

[7] https://www.monash.edu/muarc/research/research-areas/home-and-community/visu/injuries-during-the-covid-19-pandemic

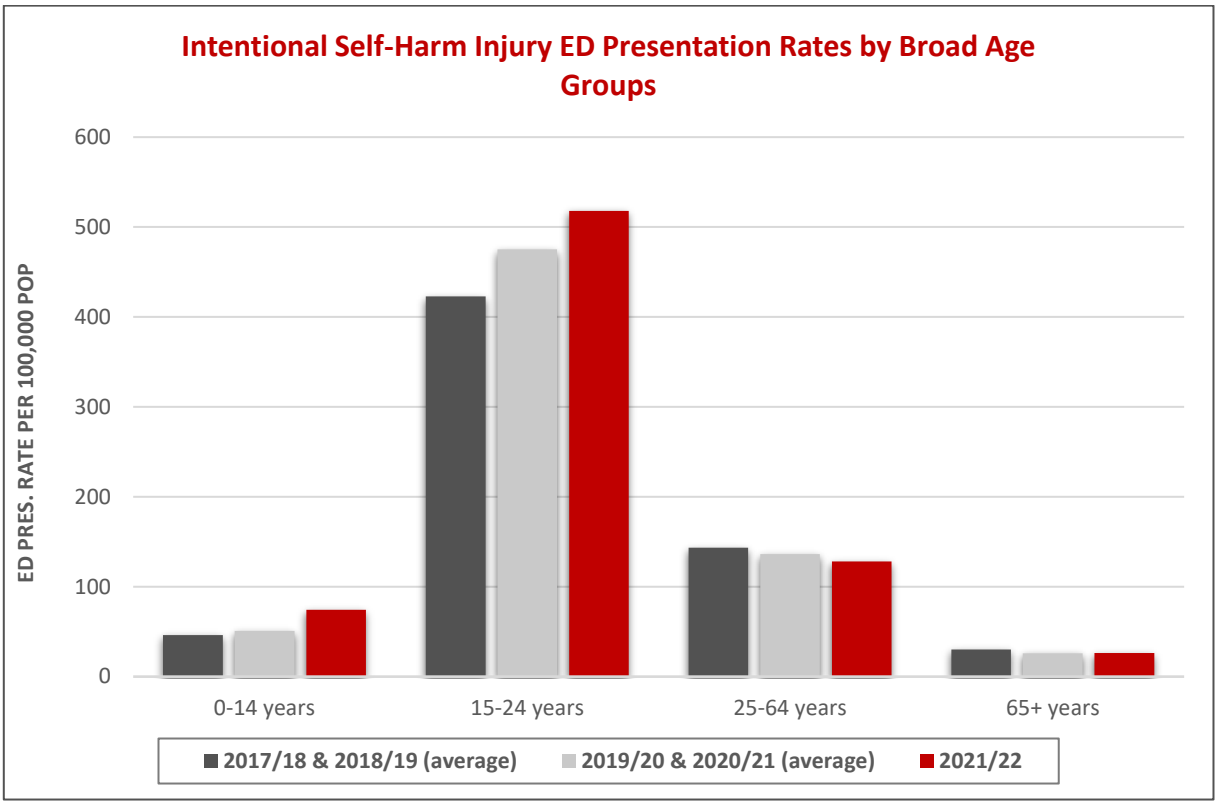

Figure 29: Emergency Department presentations for intentional self-harm injury rates by broad age group

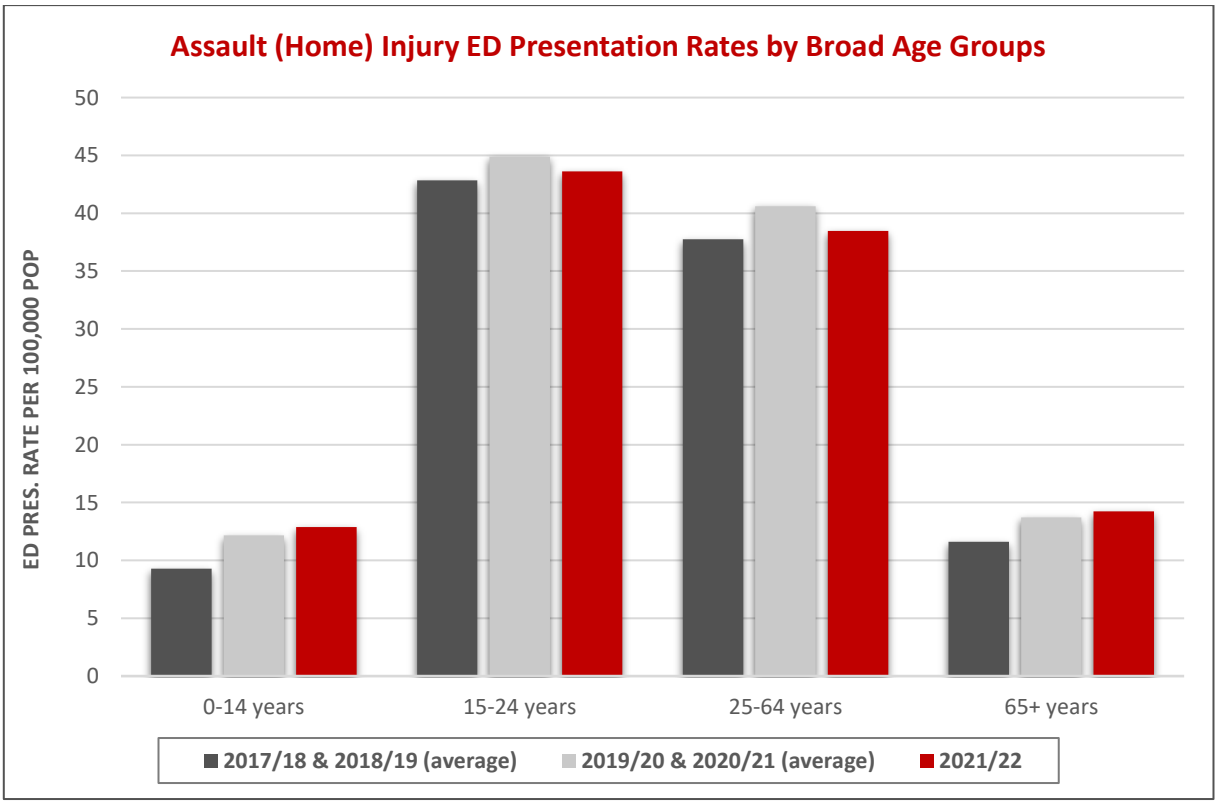

Figure 30: Emergency Department presentations for assault (home) injury rates by broad age group

ED presentation rates for intentional self-harm injury, by male and female sex, are shown in Figure 31. Female intentional self-harm injury rates were higher than male rates in the 2017/18 – 2018/19 (baseline) period, the 2019/20 – 2020/21 period and in 2021/22 period ($p<0.0001$ in each period).

Figure 32 shows the assault (in the home) related ED presentation rates, by male and female sex. Male and female assault-in-the-home rates were not statistically significantly different, in any of the three time periods (2017/18 – 2018/19 (baseline); 2019/20 – 2020/21; 2021/22).

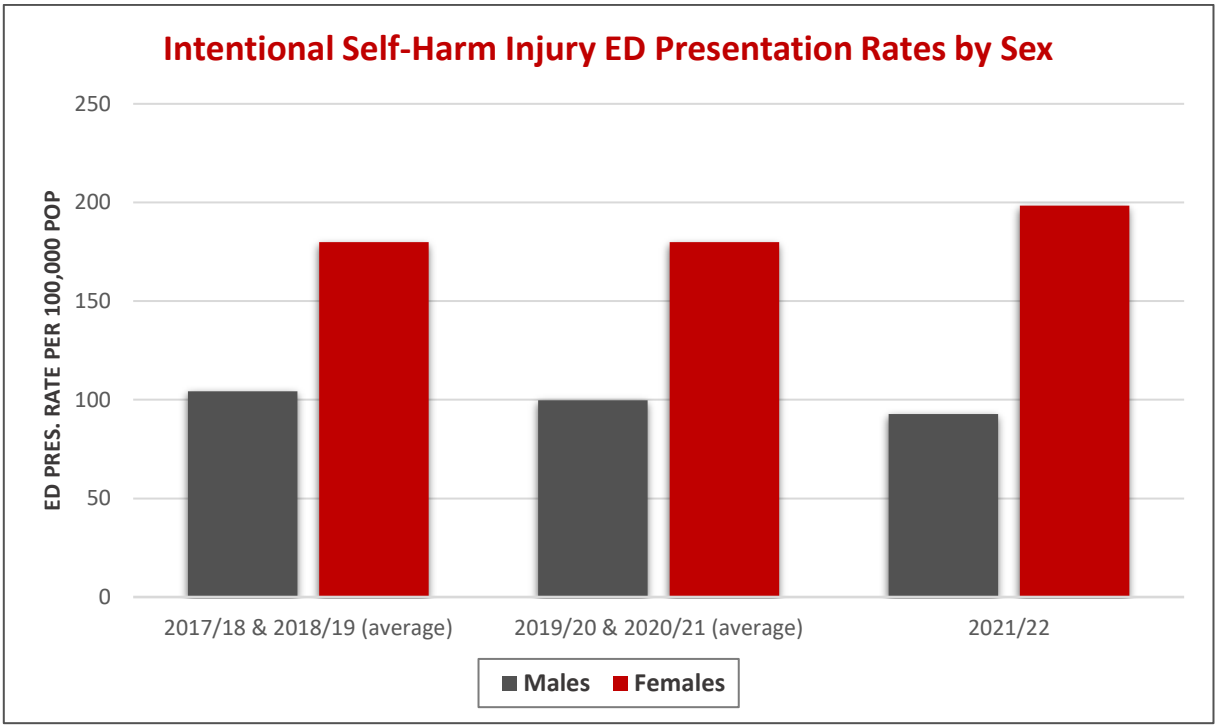

Figure 31: Emergency Department presentations for intentional self-harm (home) injury rates by sex

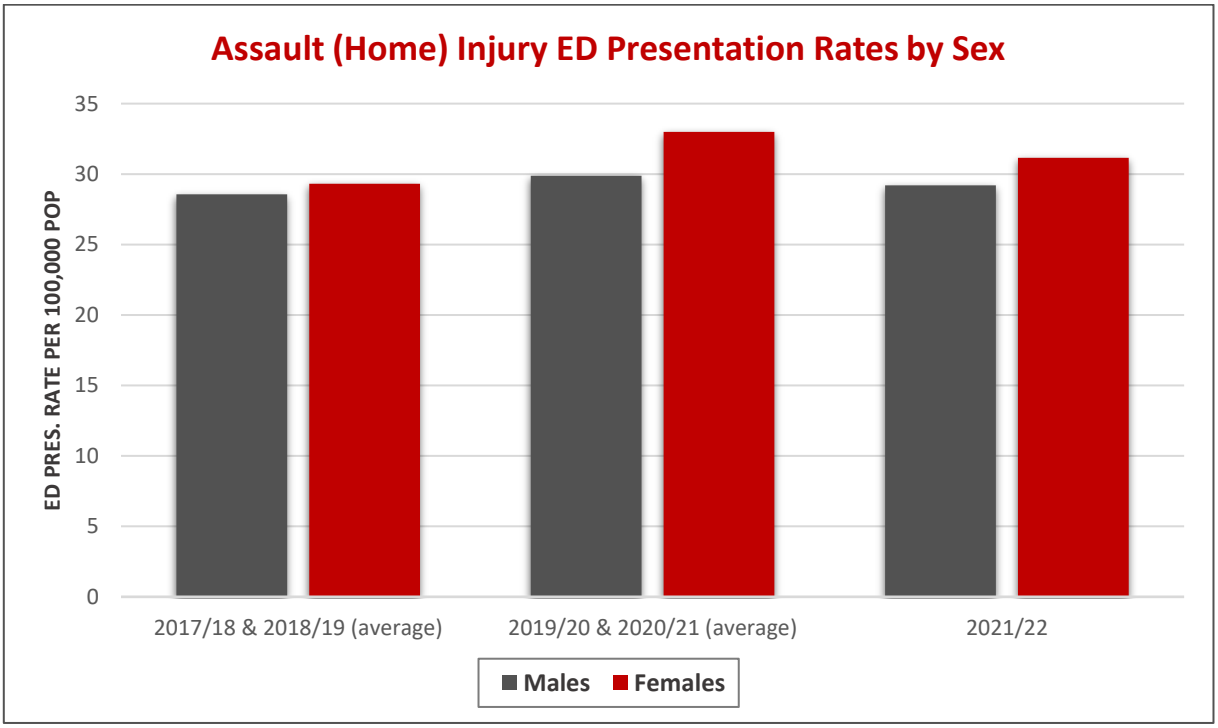

Figure 32 Emergency Department presentations for assault (home) injury rates by sex

The most common main injury types of intentional self-harm injuries and assault in the home injuries, as recorded in the Victorian Emergency Minimum Dataset, are summarised in Figure 33 and Figure 34. In the baseline period (2017/18-2018/19), the most common self-harm injury types were poisoning or toxic effects followed by open wounds and superficial injuries. In the COVID-19 period and in 2021/22, the order had not changed and poisoning or toxic effects was still the most common injury type. For home assault injuries, in the baseline period, the most common injury types were other & unspecified injury followed by open wounds and then superficial injury. In the COVID-19 period and in 2021/22, the order had changed and other & unspecified injuries were the most common assault injury type, followed by superficial injury and then open wounds.

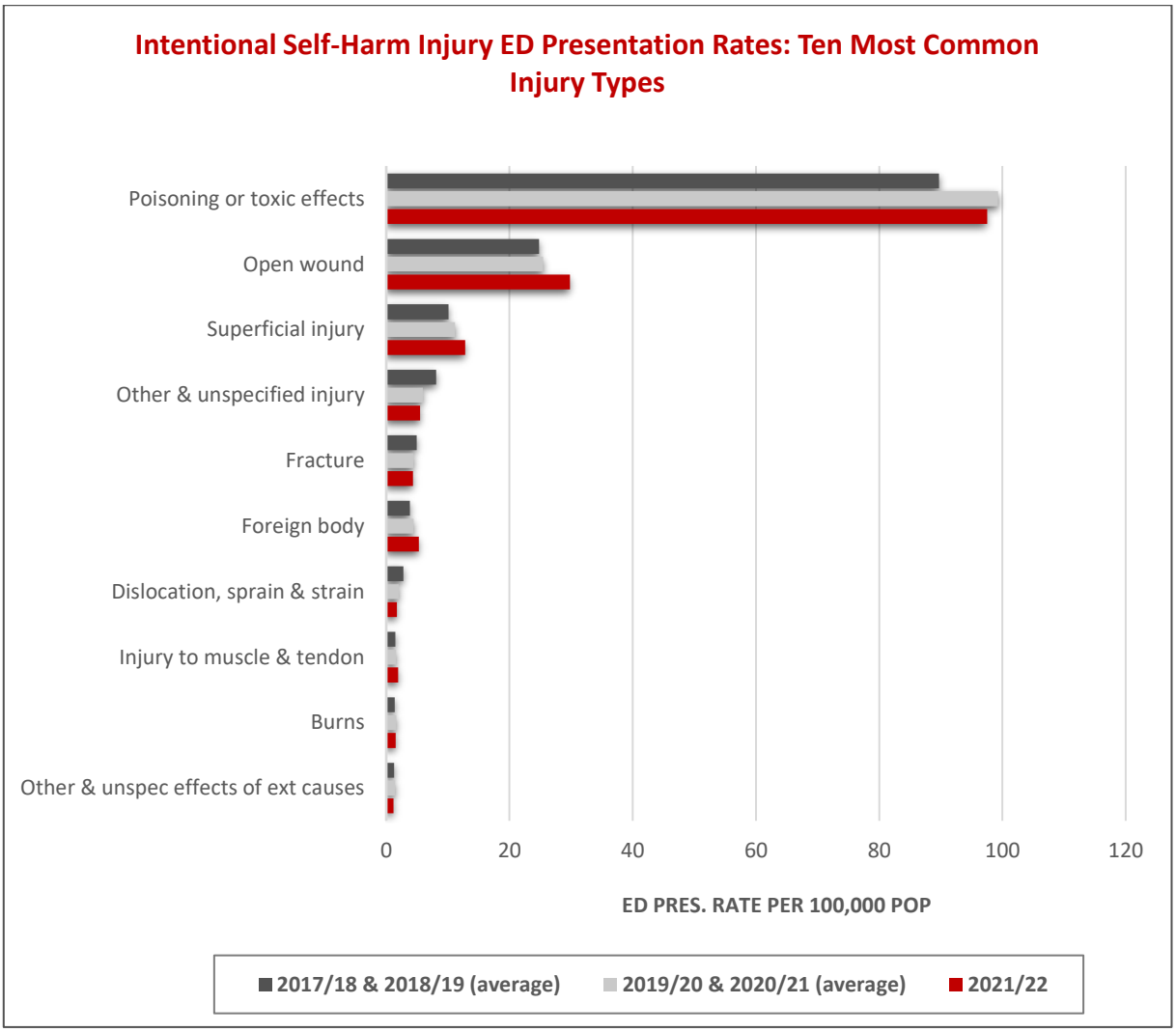

Figure 33: Emergency Department presentation rates for intentional self-harm injury by the ten most common injury types

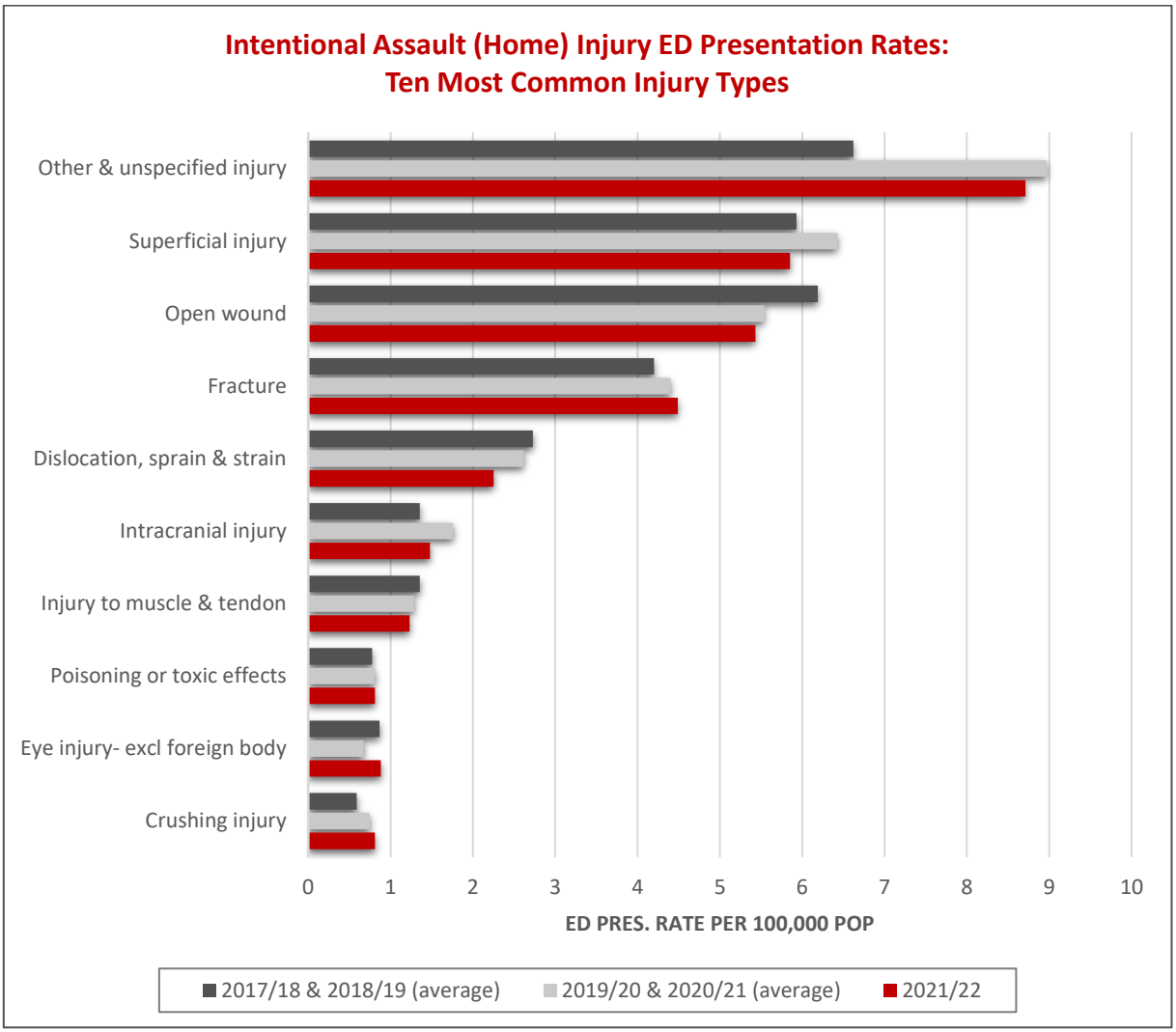

Figure 34: Emergency Department presentation rates for intentional assault (home) injury by the ten most common injury types

The perpetrator recorded for assault injury presentations to the Emergency Department is shown in Figure 35. In all three time-periods, the most commonly reported perpetrator was 'partner', followed by 'other family member'.

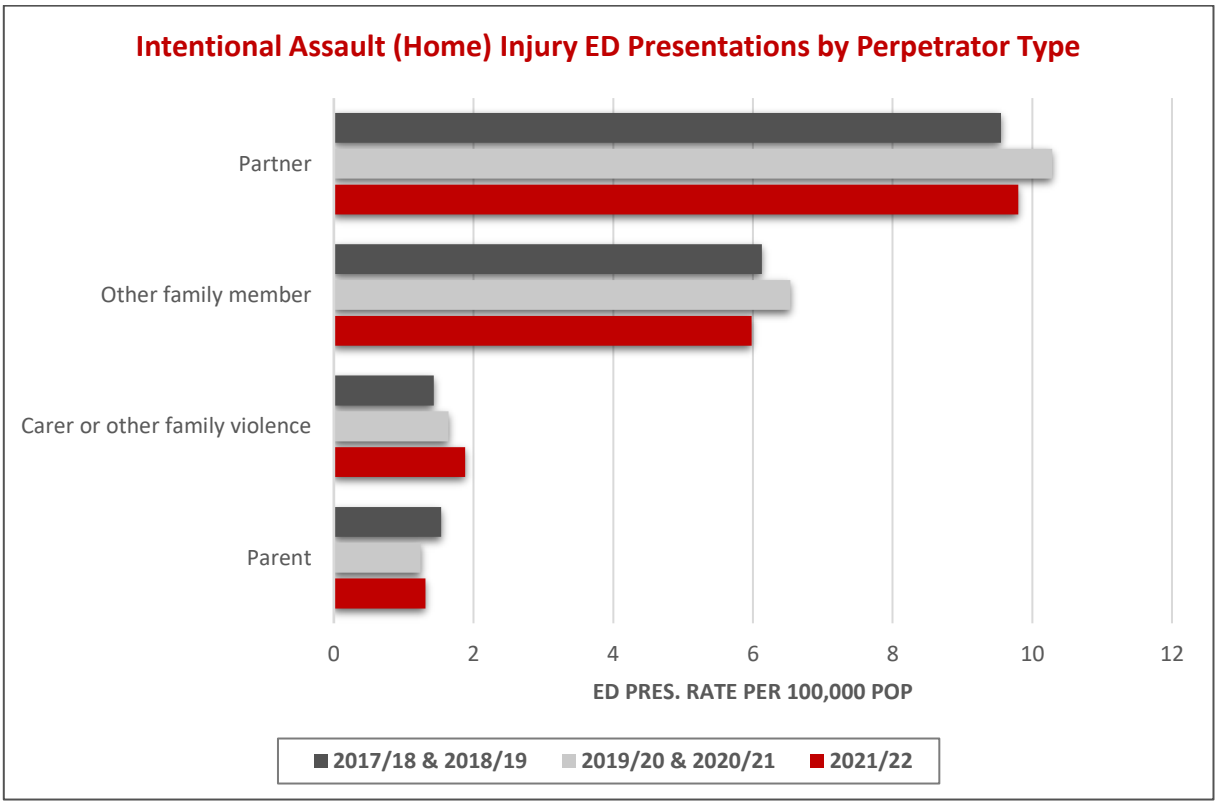

Figure 35: Emergency Department presentation rates for intentional assault (home) injury by perpetrator type

SUMMARY: ED PRESENTATIONS FOR INTENTIONAL INJURY (VIC)

- The overall rate of ED presentations for intentional self-harm injury in Victoria was not statistically significantly different in 2021/22 vs. baseline (2017/18-2018/19); p=0.37. Assault in the home injury rates were also not statistically different in 2021/22 vs. baseline; p=0.21.
- The rates of hospital admission subsequent to ED presentation for self-harm injury were 48.4% in 2017/18-2018/19 (baseline), 45.5% in 2019/20-2020/21 and 42.0% in 2021/22. For assault in the home injuries, subsequent hospital admission occurred in 30.5%, 31.5% and 32.2% of ED presentations in these three time-periods, respectively.
- Self-harm injury resulting in ED presentation was most common in the age group 15-24 years, while home assault injuries were observed most commonly across broad age groups 15-24 and 25-64 years; this pattern was observed in all three time-periods.
- In all three time periods (2017/18-2018/19, 2019/20-2020/21 and 2021/22), female intentional self-harm injury rates were higher than male intentional self-harm injury rates, while assault-in-the-home rates did not statistically significantly differ between males and females.
- The two most common injury types in self-harm injury were poisoning or toxic effects and open wounds. For home assault injuries, the most commonly recorded injury types were other & unspecified injury and superficial injury/open wounds.
- In assault in the home injury, the most commonly recorded perpetrator was 'partner', followed by 'other family member', in all three time periods (2017/18-2018/19 (baseline), 2019/20-2020/21 and 2021/22).

8. TRANSPORT INJURY

In 2021/22, there were 22,127 ED presentations for transport injuries recorded in the Victorian Emergency Minimum Dataset (VEMD): the age-standardised annual rate was 348.2 transport injury presentations per 100,000 population. This was not statistically significantly different from the transport injury rate of 331.1 per 100,000 in the baseline period 2017/18-2018/19 (p=0.26). The transport injury rate during COVID-19, 2019/20-2020/21, was 350.7 per 100,000; this was also not statistically significantly different from the baseline period rate (p=0.09). These patterns are shown in Figure 36 below. However, for a better understanding of any changes to transport injuries in Victoria since the onset of the COVID-19 pandemic, transport injuries per age group and by mode of transport need to be considered: this information is provided below.

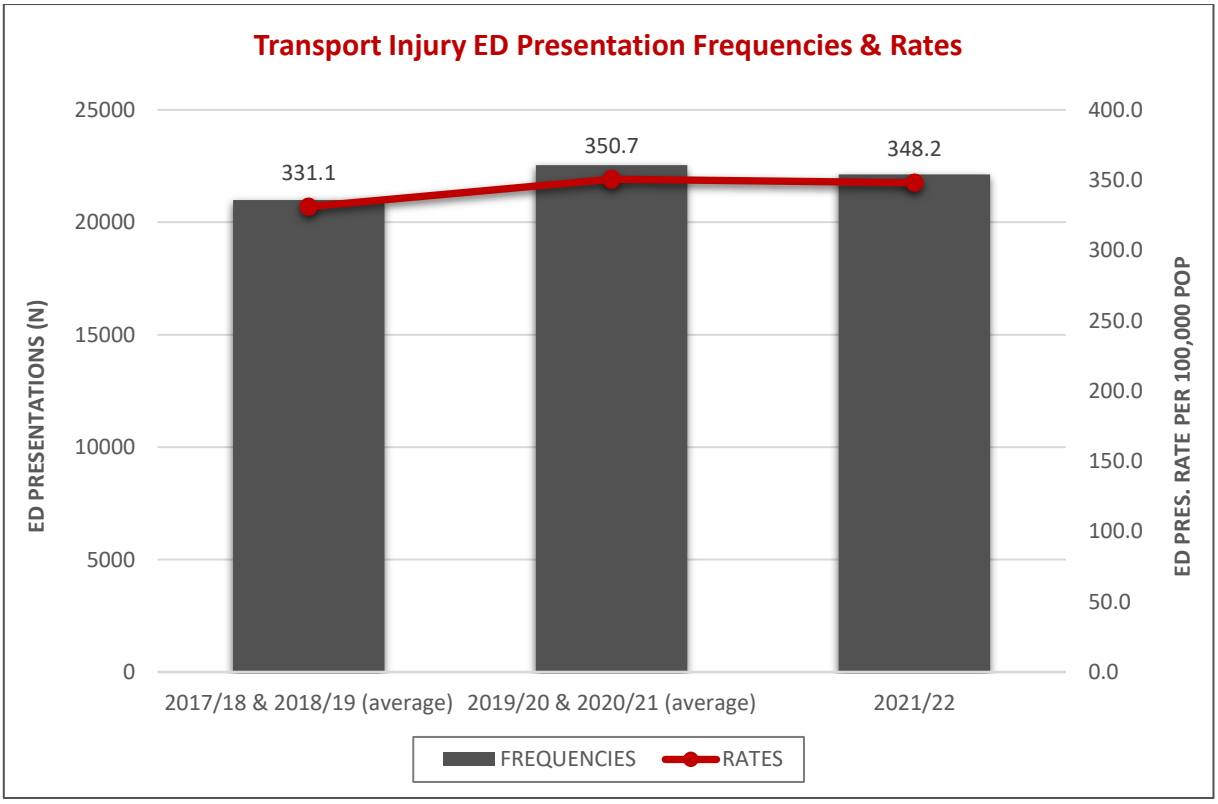

Figure 36: Emergency Department presentation frequencies and rates for transport injuries

Transport injury rates by broad age group are shown in Figure 37. The figure shows the annual rates per 100,000 population at baseline, which was 2017/18-2018/19 (averaged; dark grey bars); in the years including the onset of the pandemic, 2019/20-2020/21 (averaged; light grey bars); and in 2021/22 (red bars). The COVID-19 period is included for completeness, but a more detailed analysis of this time period is the focus of earlier editions of this bulletin[8].

In the age group 0-14 years, transport injury related ED presentation rates were higher in 2019/20-2020/21 than in the baseline period (2017/18-2018/19) (305.8 vs. 225.3 per 100,000 annually, p<0.01). In this age group, rates in 2021/22 were also higher than in the baseline period (328.8 vs. 225.3 per 100,000 annually, p<0.01). In the other broad age groups, transport injury rates did not differ statistically significantly between the indicated time periods with exception of the 65+ year age group which had a slightly lower transport injury rate in 2021/22 than at baseline (185.5 vs. 205.4 per 100,000 annually, p=0.03).

[8] https://www.monash.edu/muarc/research/research-areas/home-and-community/visu/injuries-during-the-covid-19-pandemic

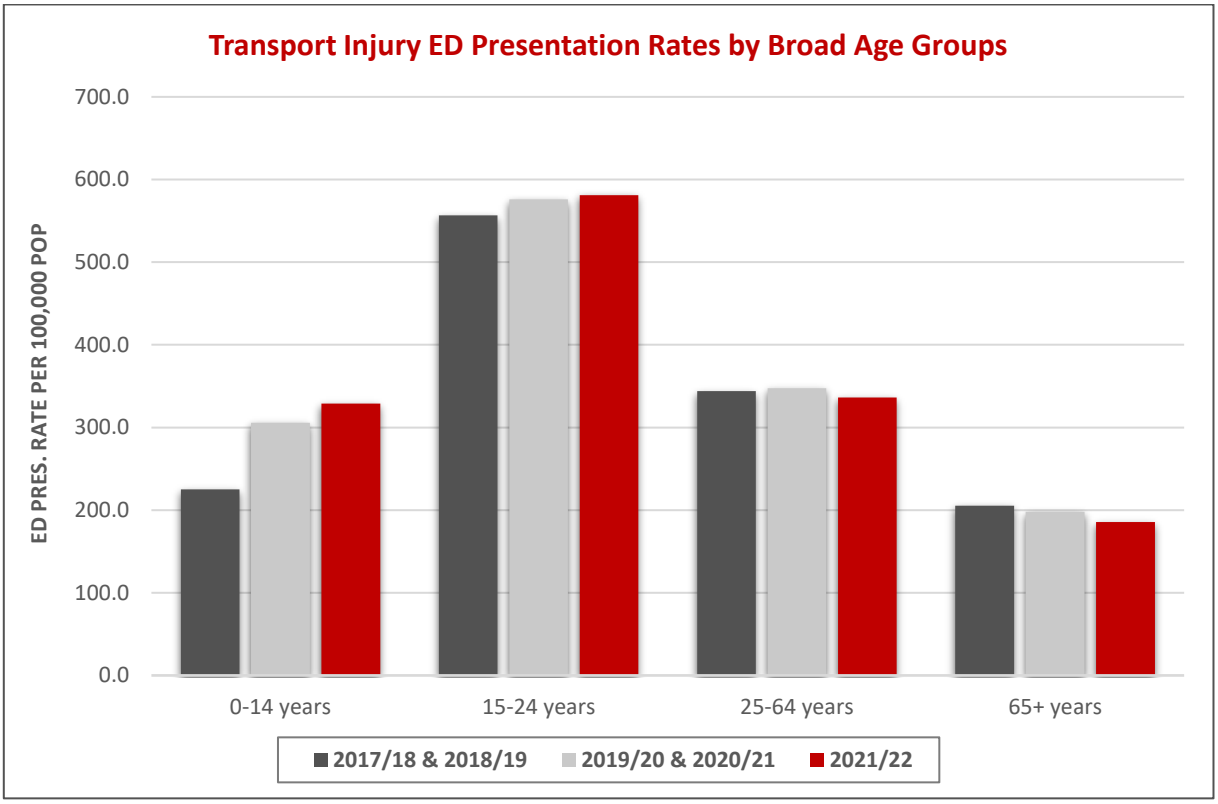

Figure 37: Emergency Department presentation rates for transport injury by broad age groups

ED presentation rates for transport injury, by male and female sex, are shown in Figure 38. Female transport injury rates were lower than male rates in the 2017/18 – 2018/19 (baseline) period, the 2019/20 – 2020/21 period and in 2021/22 period ($p<0.0001$ in each period).

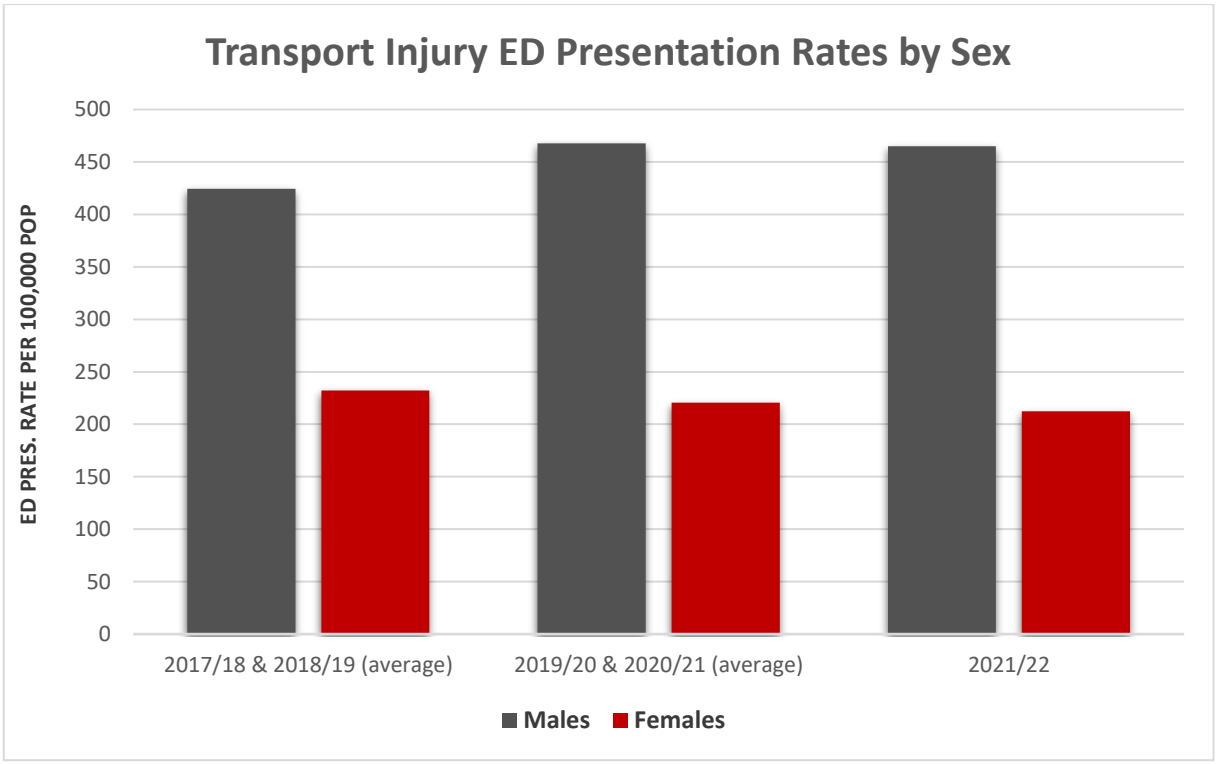

Figure 38: Emergency Department presentation rates for transport injury by sex

The *road user type* in transport-related injury ED presentations, and the *main injury type*, as recorded in the Victorian Emergency Minimum Dataset, are summarised in Figure 39 and Figure 40. Rates of motor vehicle injuries (drivers and passengers combined) were lower in 2019/20-2020/21 compared to baseline (2017/18-2018/19): 132.7 vs. 150.8 ED presentations per 100,000 population, annually (p<0.0001). In 2021/22, motor vehicle injury rates were also lower than rates at baseline: 125.8 vs. 150.8, p<0.0001).

Motorcycle injury rates (riders and passengers grouped together) were not statistically significantly different across these periods. Cycling injury rates, however, were higher in 2019/20-2020/21 compared to baseline (2017/18-2018/19): 106.6 vs. 74.1 ED presentations per 100,000 population, annually (p<0.0001). Cycling injury rates were also higher in 2021/22 than at baseline: 107.1 vs. 74.1 ED presentations per 100,000 population, annually (p<0.0001).

Pedestrian injury rates were lower in 2019/20-2020/21 compared to baseline (18.1 vs. 19.9 per 100,000, annually, p<0.01) but pedestrian injury rates in 2021/22 were not statistically significantly different to baseline.

Both in the baseline period (2017/18-2018/19), 2019/20-2020/21 and in 2021/22, the most commonly reported injury types were: other and unspecified injuries; followed by fractures; dislocation, sprains & strains; and superficial injuries.

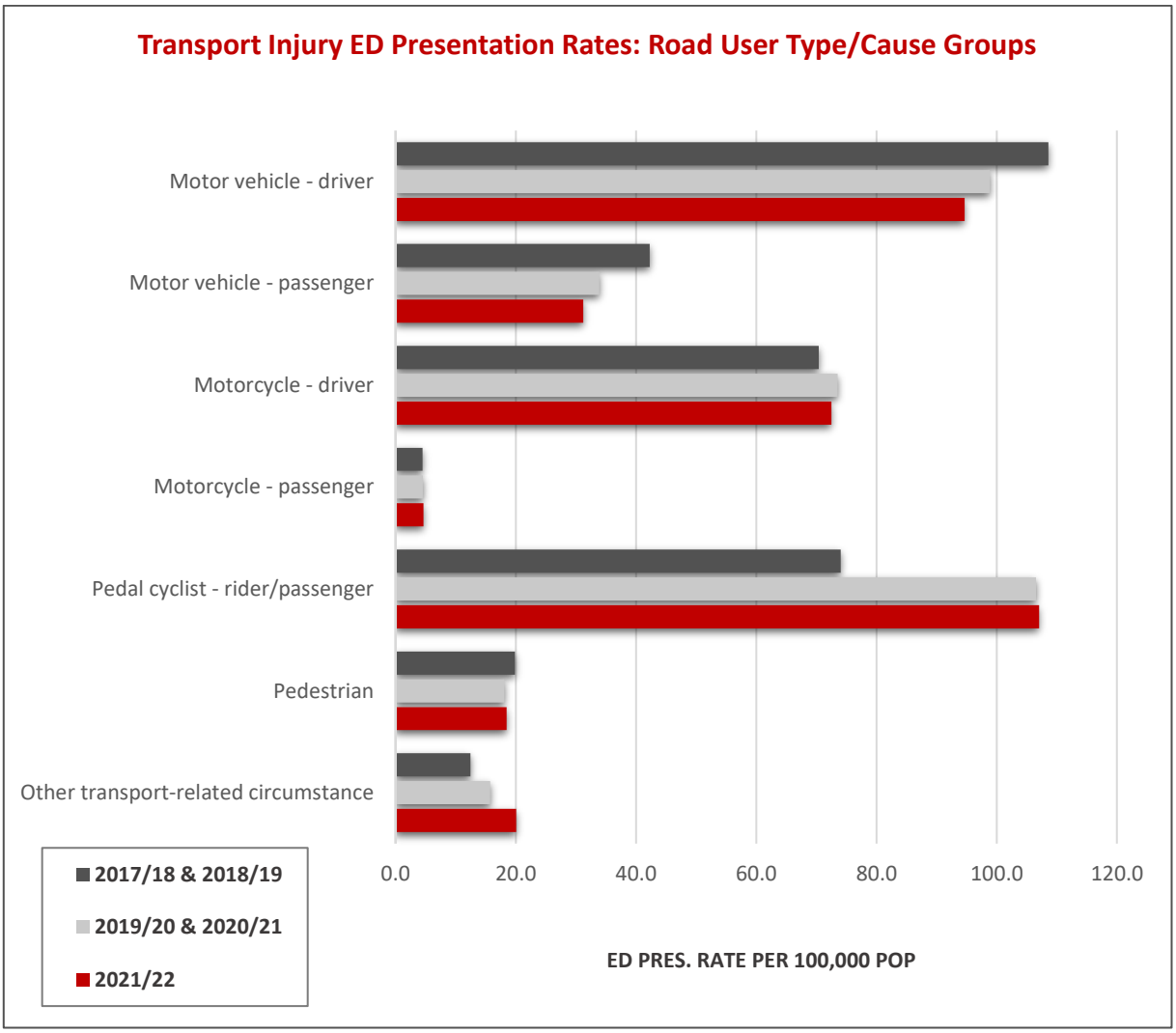

Figure 39: Emergency Department presentation rates for transport injury by road user type/cause groups

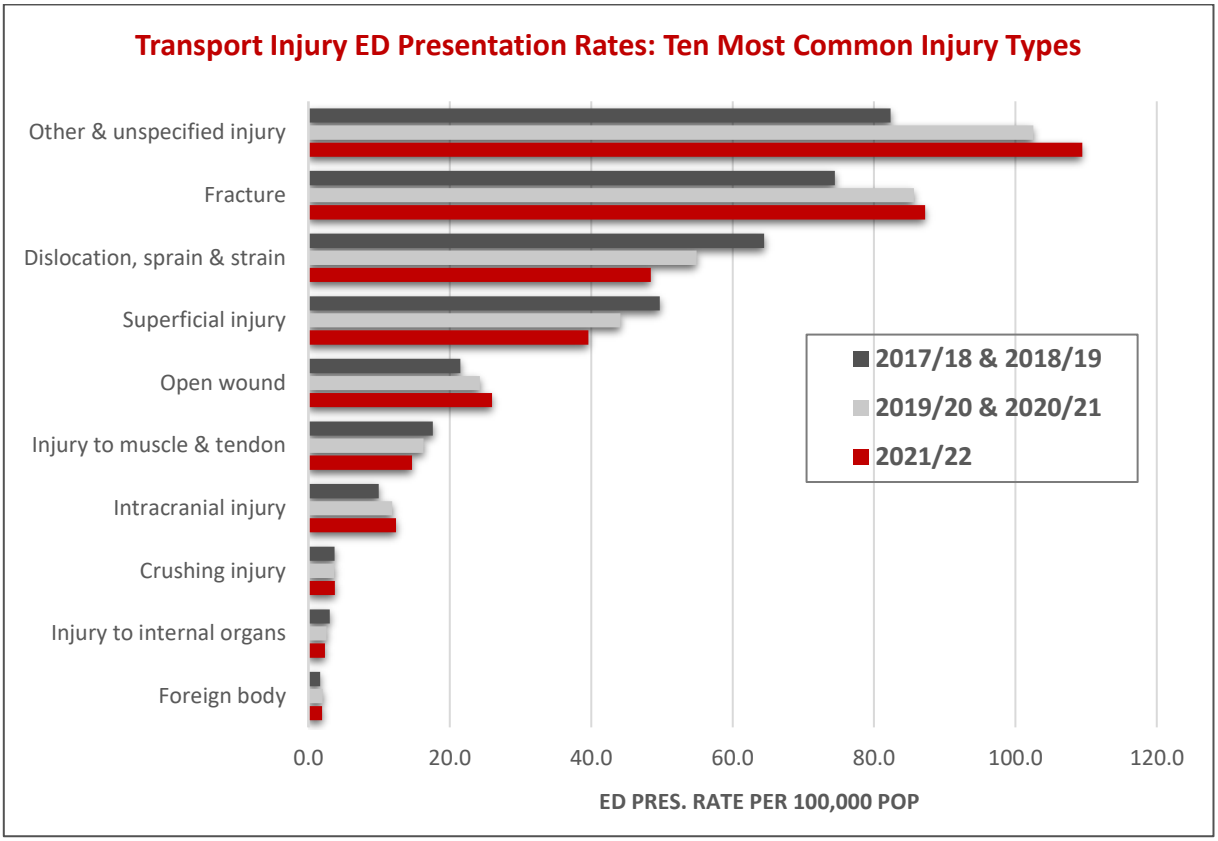

Figure 40: Emergency Department presentation rates for transport injury by ten most common injury types

SUMMARY: ED PRESENTATIONS FOR TRANSPORT INJURY (VIC)

- Comparing 2021/22 to the baseline period of 2017/18-2018/19 (averaged over the two years), the rate of ED presentations for transport injury in Victoria did not change statistically significantly (348 vs. 331 per 100,000 population, annually; p=0.26).
- The rate of hospital admission subsequent to ED presentation for transport injury was 41.7% in 2017/18-2018/19 (baseline), 41.5% in 2019/20-2020/21 and 40.0% in 2021/22.
- Transport injury rates were highest in adolescents and young adults (aged 15-24 years) and lowest in older adults (aged 65+ years) in all three time-periods.
- Child (0-14 years) transport injury rates were higher in 2019/20-2020/21 & 2021/22 than in 2017/18-2018/19 (baseline). Older adult (ages 65+ years) transport injury rates were slightly lower in 2021/22 compared to 2017/18-2018/19 (baseline). Transport injury rates in adolescents & young adults (15-24 years) and in adults (25-64 years) did not differ significantly between 2019/20-2020/21 & 2021/22 vs. baseline.
- Male transport injury rates were higher than female transport injury rates, in all three time periods (2017/18-2018/19, 2019/20-2020/21 and 2021/22).
- Rates of motor vehicle injuries (drivers and passengers combined) were lower in 2019/20-2020/21 and 2021/22 compared to 2017/18-2018/19 (baseline). Cycling injury rates, however, were higher in 2019/20-2020/21 and 2021/22 compared to 2017/18-2018/19 (baseline).
- Across the three time periods, the most common injury types recorded for transport injury ED presentations were: other and unspecified injuries; followed by fractures; dislocation, sprains & strains; and superficial injuries.

9. INJURY PREVENTION RESOURCES & SUPPORT SERVICES

9.1 INJURY PREVENTION RESOURCES

FAMILY VIOLENCE

- https://www.vic.gov.au/free-violence-victorias-strategy-prevent-family-violence

MENTAL HEALTH AND SUICIDE PREVENTION

- https://www2.health.vic.gov.au/mental-health
- https://www2.health.vic.gov.au/mental-health/prevention-and-promotion/suicide-prevention-in-victoria

CHILD INJURY PREVENTION

- https://www.kidsafevic.com.au/

FALLS PREVENTION

- https://www2.health.vic.gov.au/ageing-and-aged-care/wellbeing-and-participation/healthy-ageing/falls-prevention
- https://www.anzfallsprevention.org/resources/

FARM SAFETY

- https://www.farmsafe.org.au/
- https://www.worksafe.vic.gov.au/agriculture
- https://agriculture.vic.gov.au/about/agriculture-in-victoria/smarter-safer-farms

ROAD SAFETY

- https://dtp.vic.gov.au/getting-around/roads/safer-roads-in-our-hands#strategy
- https://www.vicroads.vic.gov.au/safety-and-road-rules/cyclist-safety/bike-rider-safety
- https://dtp.vic.gov.au/getting-around/walking-and-cycling

9.2 SUPPORT SERVICES

MENTAL HEALTH AND SUICIDE SUPPORT

Victoria has a range of mental health support services that are available 24 hours a day, seven days a week. These services can provide treatment, information, tools and advice on how to deal with a range of mental health issues (Better Health Channel).

- Call **Lifeline** to anonymously and confidentially discuss any personal difficulties, including suicidal thoughts at any time. **Phone 13 11 14 (24/7)**, Lifeline text 0477 131 114 (6pm-midnight AEST, 7 days) and online chat service https://www.lifeline.org.au/crisis-chat/ (7pm-midnight AEST, 7 days).
- **Suicide Call Back Service** is a confidential 24-hour crisis support line available 24 hours a day, 7 days a week. **Phone 1300 659 467 (24 hours).**
- **SuicideLine Victoria** is a free 24/7 telephone, video and online counselling service offering professional support to people at risk of suicide, people concerned about someone else's risk of suicide, and people bereaved by suicide. **Phone 1300 651 251 (24 hours).**
- **SANE Australia** helps people affected by mental illness to lead a better life. **Phone 1800 187 263 (Monday to Friday, 10am - 10pm AEST).**

- **Beyond Blue** provides information and support to help everyone achieve their best possible mental health, whatever their age and wherever they live. **Phone 1300 224 636 (24/7)**, chat online 3pm to 12am (AEST) 7 days a week, or online forums (24/7).
- **GriefLine** is a free national counselling and support telephone, SMS and video service, offering confidential 7 days a week phone and telehealth counselling and support to people experiencing grief, loss and/or trauma. In Victoria: **Phone 03 9935 7400 (6am – 2am, 7 days)**.
- **Kids Helpline** is 24-hour service is available for young people (aged five to 25) who need advice, counselling or just someone to talk to – no problem is too big or too small. **Phone 1800 551 800 (24/7)**.
- **ReachOut** is an online mental health service for young people. It provides practical support to help young people manage any issues they might face, from everyday struggles to much tougher situations.
- **Conversations Matter** is an online resource that encourages and guides the user through conducting a safe and effective discussion about suicide both in a one-on-one situation and in the community.

FAMILY VIOLENCE SUPPORT SERVICES

- **Safe Steps** is Victoria's state-wide access point for those who need support or access emergency crisis accommodation. **Phone 1800 015 188 (24/7).**
- **1800RESPECT** is the national sexual assault, domestic and family violence confidential counselling service available 24 hours a day, seven days a week. **Phone 1800 737 732 (24/7)**, or through **online chat service** (24/7).
- The **Men's Referral Service** is a free, confidential telephone helpline that offers counselling, advice and support to men who have anger, relationship or parenting issues. The service also provides help to women (or other family members) who are experiencing violence or controlling behaviour by men. **Phone 1300 766 491 (24/7).**
- **MensLine** Australia offers telephone, online chat and video counselling for men with family and relationship concerns. **Phone 1300 789 978 (24/7).**
- **Sexual Assault Crisis Line** is a Victorian state-wide, after-hours, confidential, telephone crisis counselling service for people who have experienced both past and recent sexual assault. **Phone 1800 806 292 (24/7).**
- **WithRespect** provides resources, support and advice for LGBTIQ+ people of all ages and their families experiencing difficulty in their relationships, including family violence. Phone 1800 542 847 (9am to 5pm Monday to Friday, and after hours support until 11pm each Wednesday. 10am to 10pm on Saturday and Sundays).
- **InTouch** is a state-wide specialist family violence service that works with women from migrant and refugee backgrounds, their families and their communities in Victoria. **Phone 1800 755 988 (9am to 5pm Monday to Friday).**
- **Yarning SafeNStrong** is a free and confidential phone crisis line for Aboriginal people and families who need to have a yarn with someone about their wellbeing. **Phone 1800 959 563 (24/7).**
- **Djirra** provides both telephone and face to face legal and non-legal support to Aboriginal people who are experiencing or have experienced family violence. **Phone 1800 105 303 (Mon-Friday, 9am-5pm).**

10. APPENDIX

10.1 METHODS

Data from 1 July 2017 to 30 June 2022 from the Victorian Emergency Minimum Dataset (VEMD), which holds de-identified clinical records of presentations at Victorian public hospitals with designated 24-hour emergency departments, were used to compile this bulletin. VEMD data was sourced from the Victorian Department of Health.

The focus of this bulletin is on the latest year of available data (2021/22) compared to the pre-pandemic baseline period (2017/18 – 2018/19, averaged). The years in which the COVID-19 pandemic started, and subsequent lockdowns in Victoria took place (i.e., during COVID-19), are captured in the 2019/20 – 2020/21 period (averaged).

Age-standardised rates per 100,000 population were calculated; the denominators used for calculating rates were based on 2017 – 2022 Victorian population estimates from the Australian Bureau of Statistics (ABS). Age standardisation of rates was carried out using 5-year age groups and the direct method. The standard population used was the Victorian resident population at 30 June, 2001.

Rate differences between time-periods were statistically tested by modelling ED presentations using Poisson models. The annual number of events were modelled as a function of time (three time-periods: 2017/18 – 2018/19, 2019/20 – 2020/21 and 2021/22), age group and sex, with the log of the corresponding Victorian residential population as offset. Rate differences between males and females at each time period were also statistically tested using Poisson models. The number of events were modelled as function of age group and sex (the variable of interest), with the log of the Victorian population as offset – these models were stratified by time period (2017/18 – 2018/19, 2019/20 – 2020/21 and 2021/22).

10.2 INJURY CASE SELECTION

ED presentations related to injury were selected only if the first occurring diagnosis code was a community injury (i.e., an ICD-10-AM code in the range of “S00” - “T75” or “T79”); this does not include medical injuries. Episode selection was limited to incidents (i.e., excludes return visits, pre-arranged admissions). For more information on methods used by the Victorian Injury Surveillance Unit see here and background information and pre-COVID statistics see here.

- **Unintentional injury** cases were those with a ‘Human intent’ code “1” (non-intentional harm).
- **Unintentional home injury** cases were unintentional injury cases with a ‘Place where injury occurred’ code “H” (home).
- **Work injury** cases were unintentional injury cases (aged 15 years and above) with an ‘activity when injured’ code “W” (working for income) or a ‘compensable status’ code 3 (WorkCover/WorkSafe).
- **Unintentional farm injury** were unintentional injury cases with a ‘Place where injury occurred’ code “F” (Farm).
- **Sports injury** cases were aged 5 years and above; sports injuries were determined from the ‘activity when injured’ and ‘place where injury occurred’ variables, and the ‘description of injury event’ variable. Detailed sports injury case selection methods can be found elsewhere[9].

[9] Fernando DT, Berecki-Gisolf J, Finch CF. Sports injuries in Victoria, 2012-13 to 2014-15: evidence from emergency department records. Med J Aust. 2018 Apr 2; 208(6):255-260. https://onlinelibrary.wiley.com/doi/abs/10.5694/mja17.00872

- **Self-harm injury** cases were those with a 'Human intent' code "2" (intentional self-harm code for ED presentations in the 2018/19 financial year) and "18" through "20" (intentional self-harm codes for ED presentations in the 2019/20 financial year onwards).

- **Assault (home) injury** cases were selected as injuries that occurred in the home with 'Human intent' codes "12" through "17" (codes related to sexual assaults, and neglect/maltreatment/assaults, by a current or former intimate partner, other family member or other/unknown persons). Additional cases were selected if the 'Description of injury event' text field contained terms such as "domestic", "home" appearing with terms such as "violence", "hit" etc., and "assault", "hit", "struck", "punch" and other similar terms appearing with terms such as "partner", "spouse" and other terms for family members. Cases selected using text searches were manually checked for relevance.

- **Transport injury** cases were those with 'Injury cause' codes "1" through "8" (related to motor vehicle occupants, motor cyclists, pedal cyclists, pedestrians and other transport related circumstances), excluding "7" (Horse related (fall from, struck or bitten by)).

10.3 FOR KEY DATES REGARDING SOCIAL RESTRICTIONS IN VICTORIA, 2021/22, VISIT:

https://www.dhhs.vic.gov.au/coronavirus/updates
https://www.parliament.vic.gov.au/publications/research-papers/download/36-research-papers/13962-emergency-powers-public-health-and-covid-19
https://www.health.gov.au/resources/collections/coronavirus-covid-19-at-a-glance-infographic-collection

10.4 COVID-19 BULLETINS ARE PREPARED BY THE TEAM AT VISU

- VISU Director: Associate Professor Janneke Berecki-Gisolf
- Data analyst: Ehsan Rezaei-Darzi
- Senior Research Officer: Voula Stathakis

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10.5 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 (https://www.monash.edu/muarc/research/research-areas/home-and-community/visu) or by contacting the VISU office by phone (03 9905 1805).

The Injury Atlas of Victoria web-based application can be accessed at this address:
https://vicinjuryatlas.org.au/

MONASH University

ACCIDENT RESEARCH CENTRE

Contact VISU at:

MUARC - Monash University Accident Research Centre
Building 70, 21 Alliance Lane
Monash University
Clayton Campus
Victoria, 3800

Phone: (03) 9905 1805
Email: visu.enquire@monash.edu

Other information regarding VISU, all E-bulletins and other VISU Publications can be found on our Internet home page:

Web: www.monash.edu/muarc/visu

VICTORIA State Government | Department of Health

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