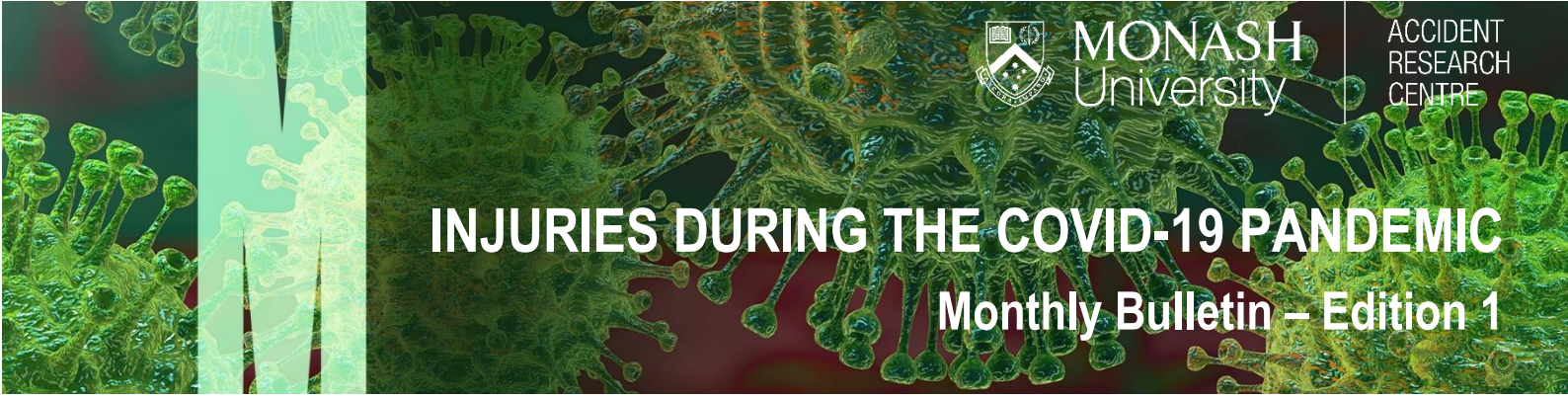


THE FOLLOWING HAS BEEN PREPARED BY THE VICTORIAN INJURY SURVEILLANCE UNIT (VISU), MONASH UNIVERSITY ACCIDENT RESEARCH CENTRE (MUARC)

MONTHLY BULLETIN – EDITION 1

BACKGROUND

In response to the global COVID-19 pandemic, Australia, including Victoria, has implemented social distancing to limit transmission of the coronavirus. This monthly bulletin monitors injury rates related to the home, farm, transport, self-harm and assault during the COVID-19 pandemic. This bulletin is a special VISU initiative, in addition to the usual annual reporting; VISU intends to produce these reports throughout the duration of the pandemic. This first edition of the bulletin examines rates in Victoria during March 2020 relative to the same time last year.

METHOD

Data used to compile this bulletin was extracted from the Victorian Emergency Minimum Dataset (VEMD), which holds deidentified clinical records of presentations at Victorian public hospitals with designated 24-hour emergency departments (EDs) (currently 38 hospitals). ED presentations from 1 March 2019 to 31 March 2020 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.

KEY INJURY GROUPS

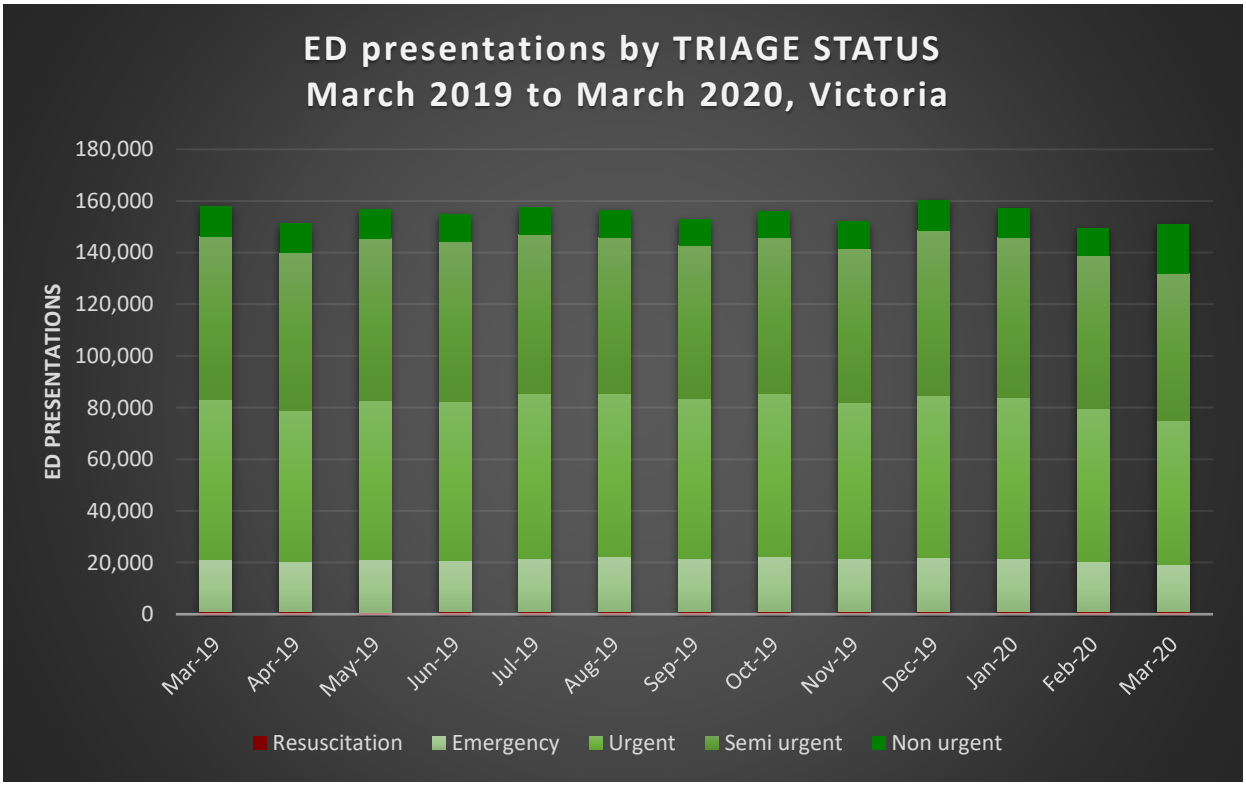
HOME **FARM** **TRANSPORT** **SELF-HARM** **ASSAULT**

VICTORIA State Government | Health and Human Services

CONTEXT: OVERALL EMERGENCY DEPARTMENT PRESENTATIONS MARCH 2019 – MARCH 2020

SUMMARY OF ED HEALTH SERVICE UTILISATION BEFORE THE CORONAVIRUS PANDEMIC AND DURING THE FIRST MONTH OF RESTRICTIONS

ED presentations in Victoria remained relatively stable over time with 158,106 in March 2019 and 151,187 in March 2020: a slight reduction. This should be seen in context of a steady growth in ED presentations (3.6% per year) which was observed in recent years in Victoria. Age standardised rates were 28,230 per 100,000 population per year in March 2019 vs 27,023 per 100,000 population per year in March 2020.



Data selection methods explained in the Appendix section.

EMERGENCY DEPARTMENT HEALTH SERVICE UTILISATION, VICTORIA, MARCH 2019 COMPARED WITH MARCH 2020

Respiratory illness or virus-related ED presentations:

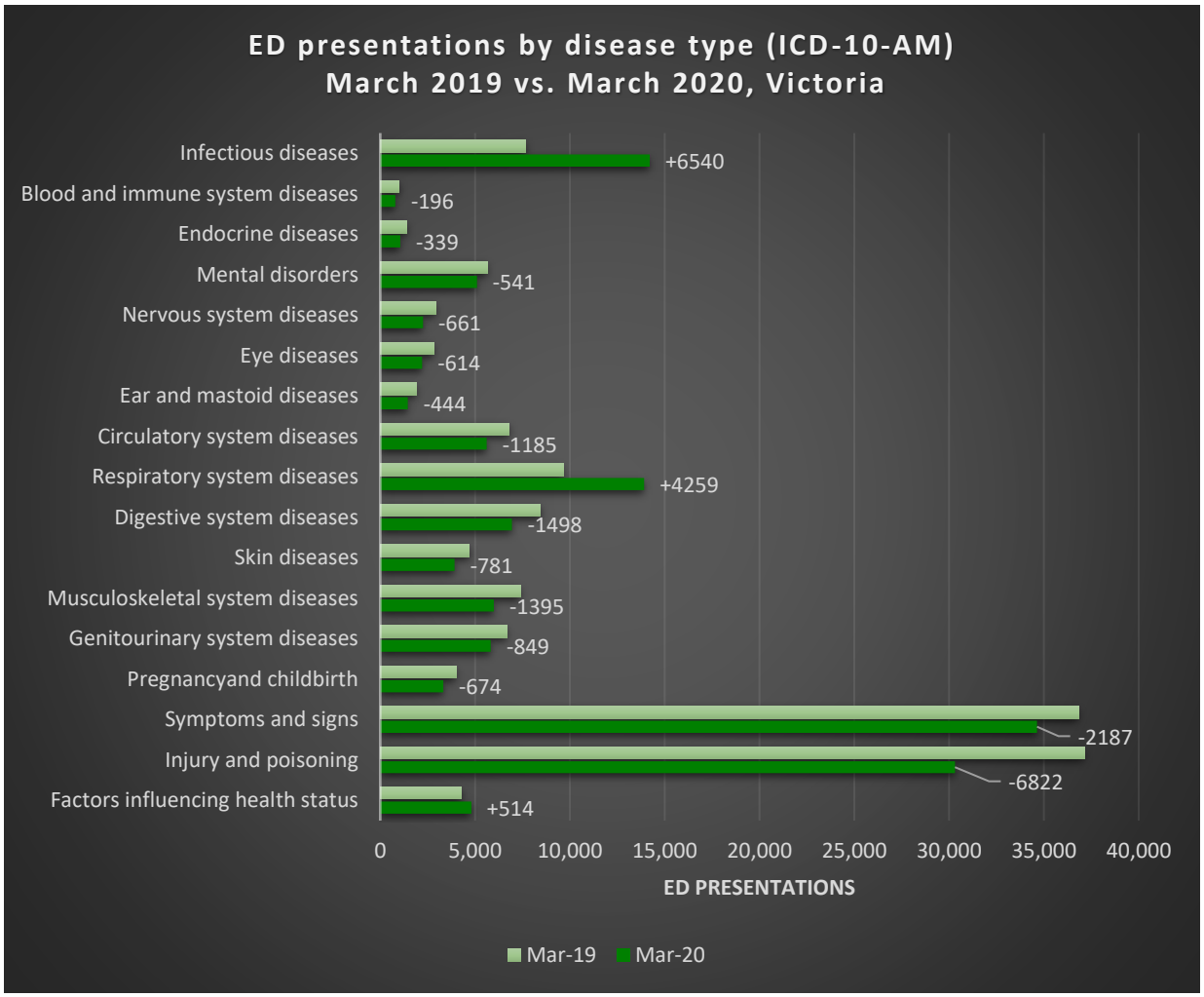
- **Viral infection, unspecified**: 2,871 vs 11,078 (March 2019 vs March 2020)
- **Upper respiratory infection, unspecified**: 1,053 vs 3,467 (March 2019 vs March 2020)

Common ED presentations not related to viral or respiratory illness

- **Syncope/collapse** 1,880 vs 1,541 (March 2019 vs March 2020)
- **Urinary tract infection** 1,929 vs 1,652 (March 2019 vs March 2020)
- **Abdominal pain, unspecified** 7,004 vs 5,509 (March 2019 vs March 2020)

Potentially life-threatening presentations not related to viral or respiratory illness

- **Myocardial infarction** 673 vs 567 (March 2019 vs March 2020)
- **Angina pectoris** 420 vs 269 (March 2019 vs March 2020)
- **Stroke** 789 vs 646 (March 2019 vs March 2020)
- **Pulmonary embolism** 220 vs 161 (March 2019 vs March 2020)
- **Appendicitis** 747 vs 579 (March 2919 vs March 2020)



SUMMARY: EMERGENCY DEPARTMENT HEALTH SERVICE USE FINDINGS (VIC)

ED presentations overall have declined slightly from 158,106 in March 2019 to 151,187 in March 2020

In March 2020, changes to ED presentations were dominated by respiratory illness and virus-related health service use

Overall, ED service use not related respiratory illness/virus was reduced

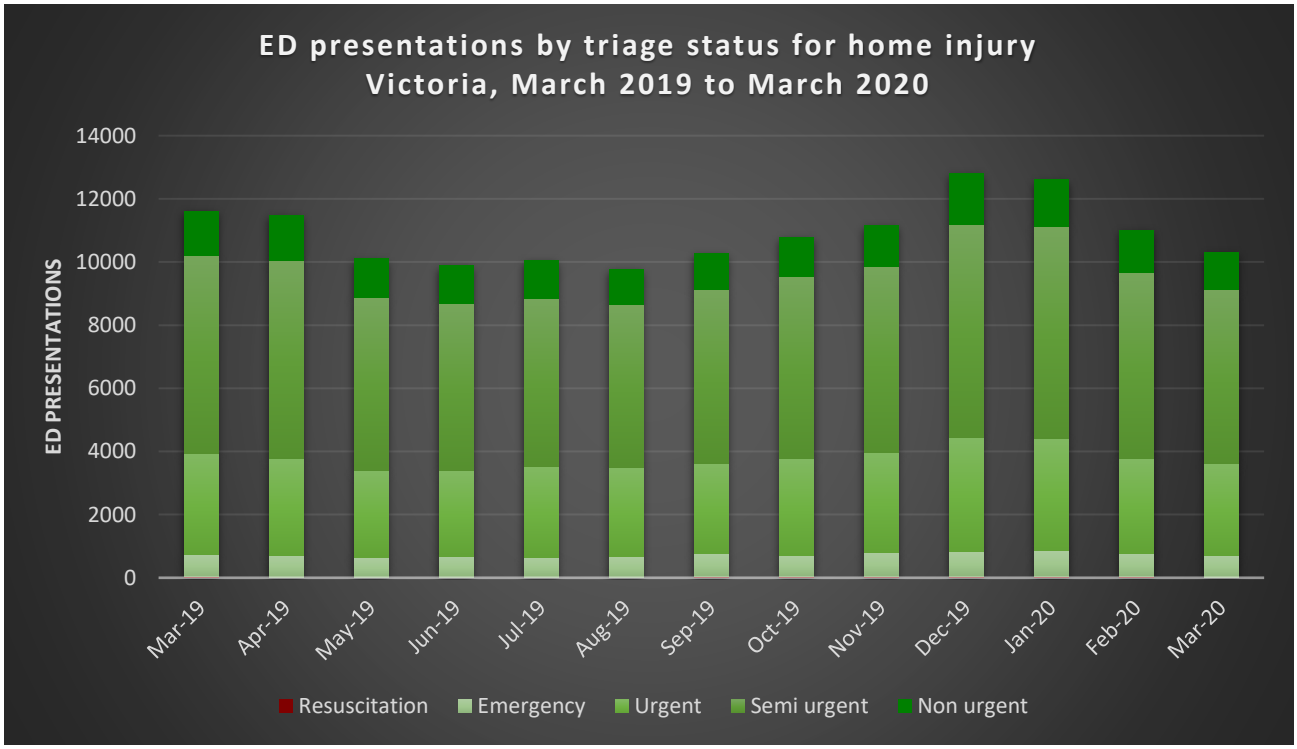
Even the numbers of ED presentations for potentially life-threatening conditions were reduced

This indicates that in March 2020, there was an increased threshold for use of health services for non-virus related ailments. This suggests missed opportunities for early treatment and intervention

Non-urgent health issues may have been presented to the GP or nurse on call instead of the ED; this needs to be investigated further to identify potential gaps in service utilisation during the pandemic

Unintentional Home injury

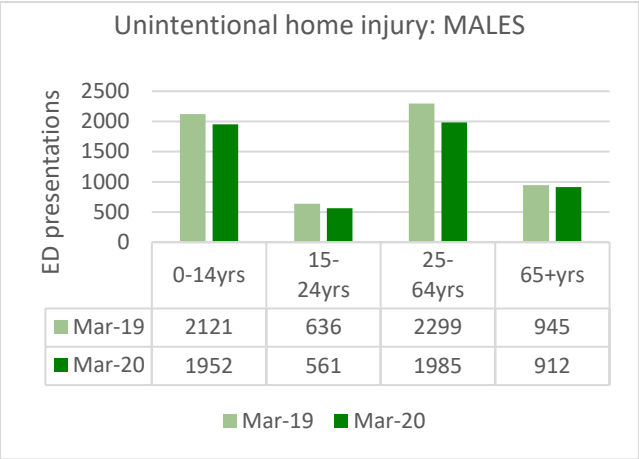
- The total number of unintentional home injuries was lower in March 2020 than in March 2019; however, **proportional to ED caseload** (including only cases that were not directly or indirectly related to viral or respiratory illness), ED presentations for unintentional home injury **increased**.
- Given the overall reduction in health service utilisation through the ED (for non-viral or respiratory illness issues), the number of home injuries during lockdown are likely to be **underestimated** by these ED statistics.
- The injury types which **decreased** the most from March 2019 to March 2020 were strains and sprains and superficial injuries, suggesting a higher threshold for health service attendance through the ED.

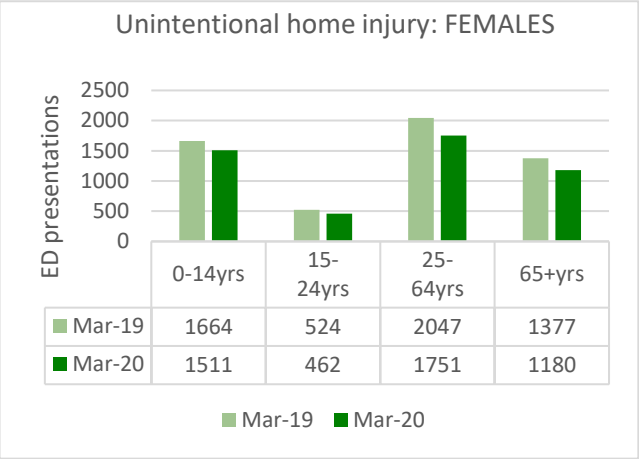


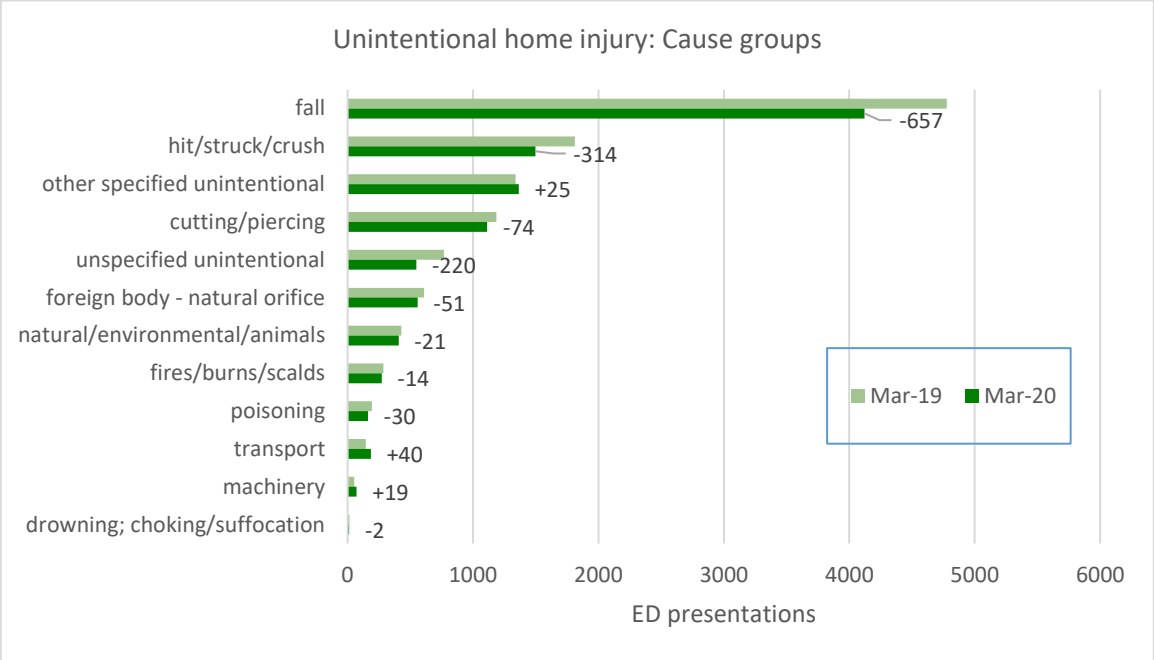
Data selection methods explained in the Appendix section.

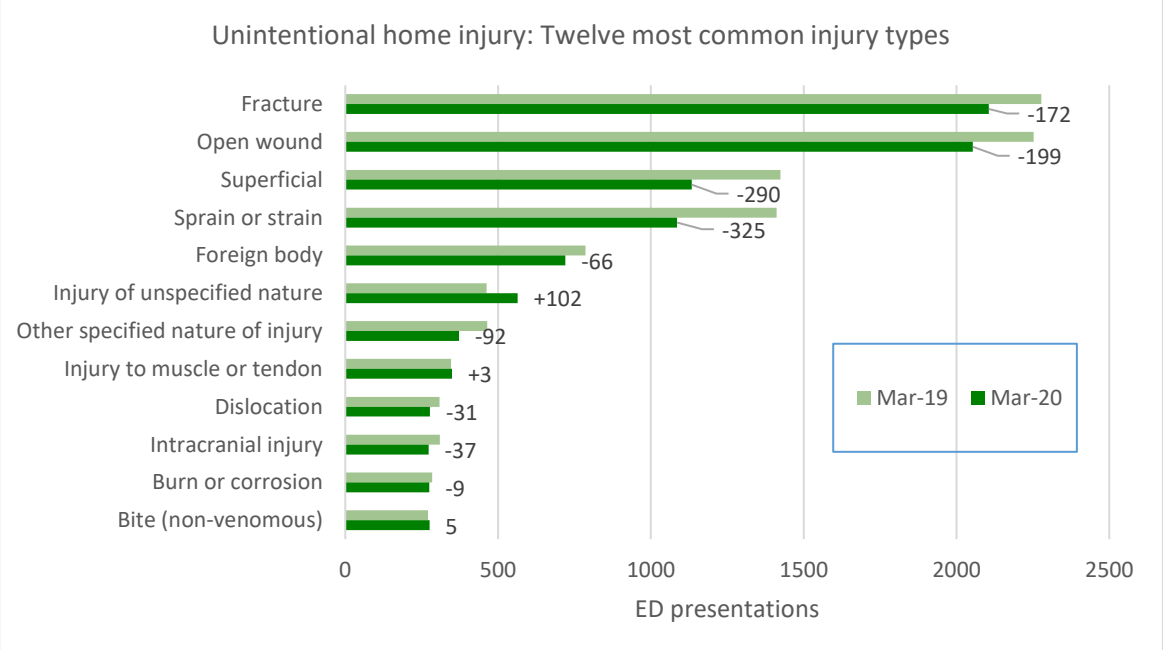
	March 2019			March 2020			
Triage status	**Injury cases**	**ED Presentations***	**Ratio**	**Injury cases**	**ED Presentations***	**Ratio**	**Change in ratios**
Resuscitation	26	389	0.07	23	382	0.06	-10%
Emergency	712	7399	0.10	698	6436	0.11	+13%
Urgent	3197	26005	0.12	2903	21208	0.14	+11%
Semi-urgent	6272	27548	0.23	5502	22170	0.25	+9%
Non-urgent	1407	5089	0.28	1189	5179	0.23	-17%
Total	**11614**	**66430**	**0.17**	**10315**	**55375**	**0.19**	**+7%**

**For VEMD caseload calculations, only ED presentations that were considered unlikely to be directly or indirectly related to the pandemic were included. (See Appendix for details).*


Unintentional home injury: MALES
ED presentations
2500
2000
1500
1000
500
0
0-14yrs
15-24yrs
25-64yrs
65+yrs
Mar-19 2121 636 2299 945
Mar-20 1952 561 1985 912
Mar-19 Mar-20

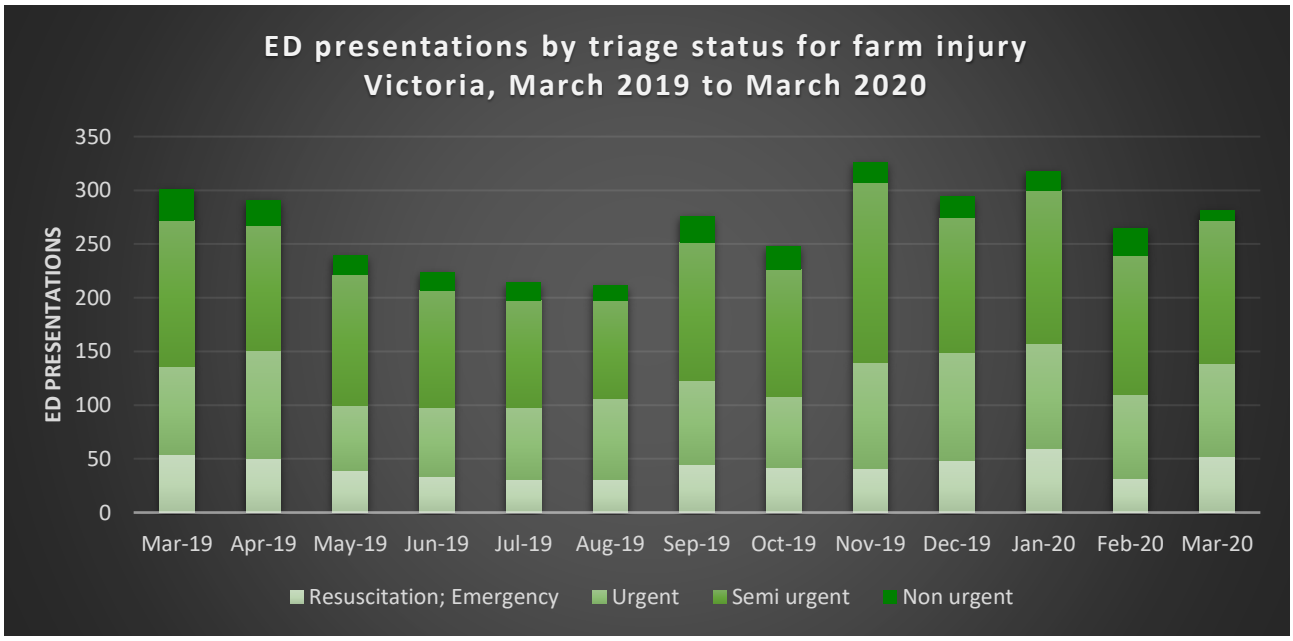

Unintentional home injury: FEMALES
ED presentations
2500
2000
1500
1000
500
0
0-14yrs
15-24yrs
25-64yrs
65+yrs
Mar-19 1664 524 2047 1377
Mar-20 1511 462 1751 1180
Mar-19 Mar-20


Unintentional home injury: Cause groups
fall -657
hit/struck/crush -314
other specified unintentional +25
cutting/piercing -74
unspecified unintentional -220
foreign body - natural orifice -51
natural/environmental/animals -21
fires/burns/scalds -14
poisoning -30
transport +40
machinery +19
drowning; choking/suffocation -2
0 1000 2000 3000 4000 5000 6000
ED presentations
Mar-19 Mar-20


Unintentional home injury: Twelve most common injury types
Fracture -172
Open wound -199
Superficial -290
Sprain or strain -325
Foreign body -66
Injury of unspecified nature +102
Other specified nature of injury -92
Injury to muscle or tendon +3
Dislocation -31
Intracranial injury -37
Burn or corrosion -9
Bite (non-venomous) 5
0 500 1000 1500 2000 2500
ED presentations
Mar-19 Mar-20

Unintentional Farm Injury

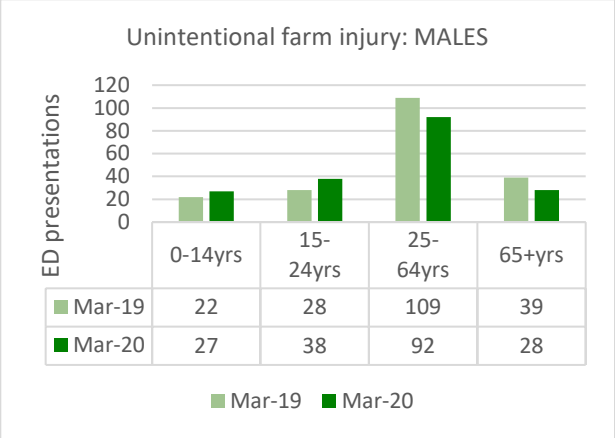
- The total number of farm injury related ED presentations was **lower** in March 2020 than in March 2019; however, **proportional to ED caseload** (including only cases that were not directly or indirectly related to viral or respiratory illness), farm injury cases did **increase slightly**. This proportional increase was observed in urgent/emergency cases but not in non-urgent cases.
- Given the overall reduction in health service use through the ED (for non-viral or respiratory illness issues), the number of farm injuries during lockdown are likely to be **underestimated** by these ED statistics.
- The number of farm injury presentations **increased slightly** from March 2019 to March 2020 among males up to 24 years and females aged 25 to 64 years; however, small sample size and general reductions in service use prevent statistical significance testing.
- A **slight increase** in fall related farm injuries was observed from March 2019 to March 2020.

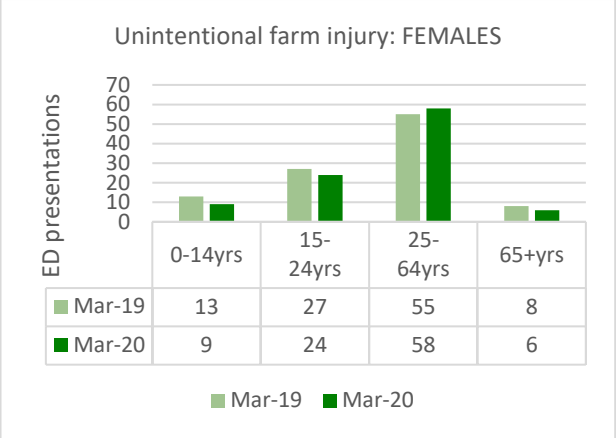


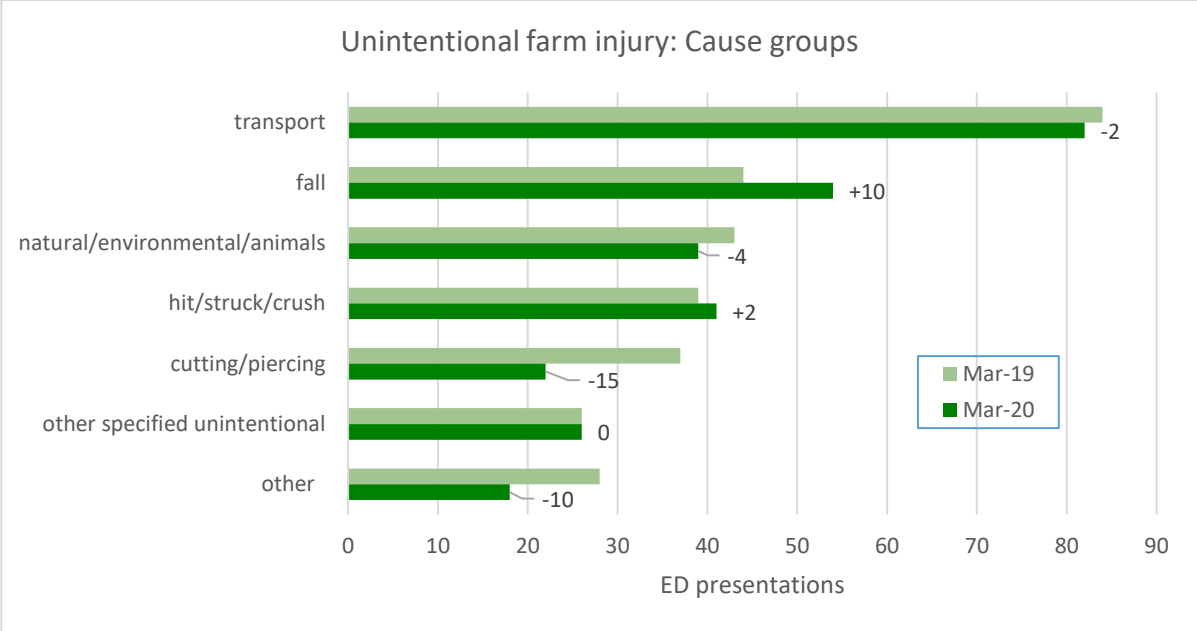
Data selection methods explained in the Appendix section.

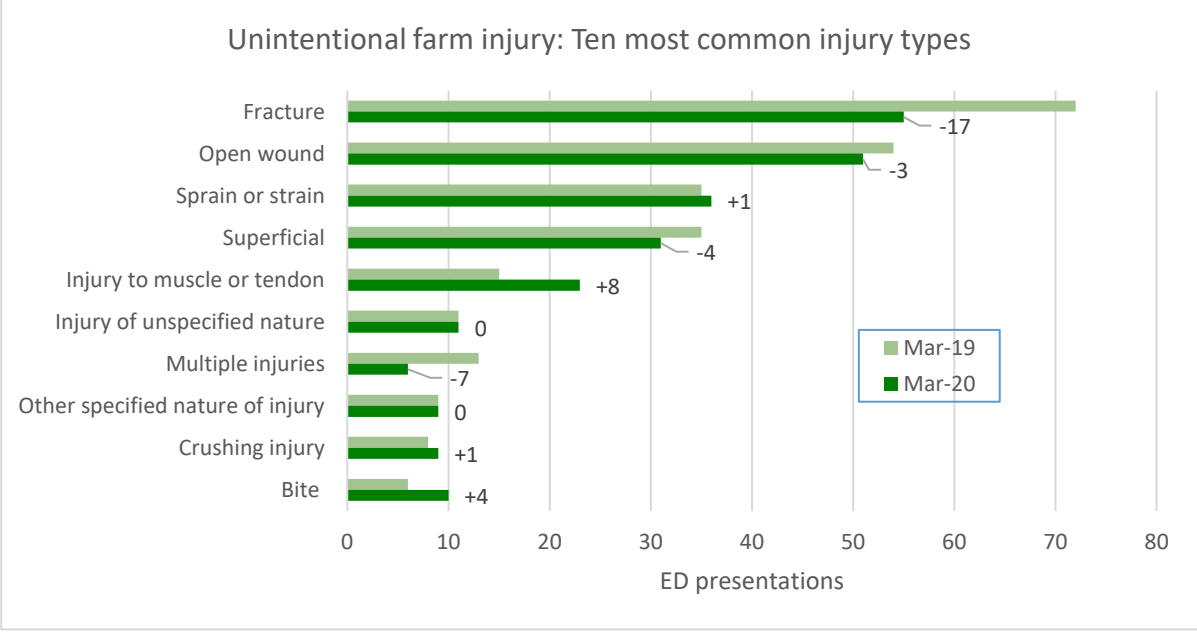
	March 2019			March 2020			
Triage status	**Injury cases**	**ED Presentations***	**Ratio**	**Injury cases**	**ED Presentations***	**Ratio**	**Change in ratios**
Resuscitation, Emergency	54	7788	0.007	52	6818	0.008	+10%
Urgent	82	26005	0.003	87	21208	0.004	+30%
Semi-urgent	136	27548	0.005	133	22170	0.006	+22%
Non-urgent	29	5089	0.006	10	5179	0.002	-66%
Total	**301**	**66430**	**0.005**	**282**	**55375**	**0.005**	**+12%**

**For VEMD caseload calculations, only ED presentations that were considered unlikely to be directly or indirectly related to the pandemic were included. (See Appendix for details).*


Unintentional farm injury: MALES
ED presentations
120
100
80
60
40
20
0
0-14yrs
15-24yrs
25-64yrs
65+yrs
Mar-19 22 28 109 39
Mar-20 27 38 92 28
Mar-19
Mar-20

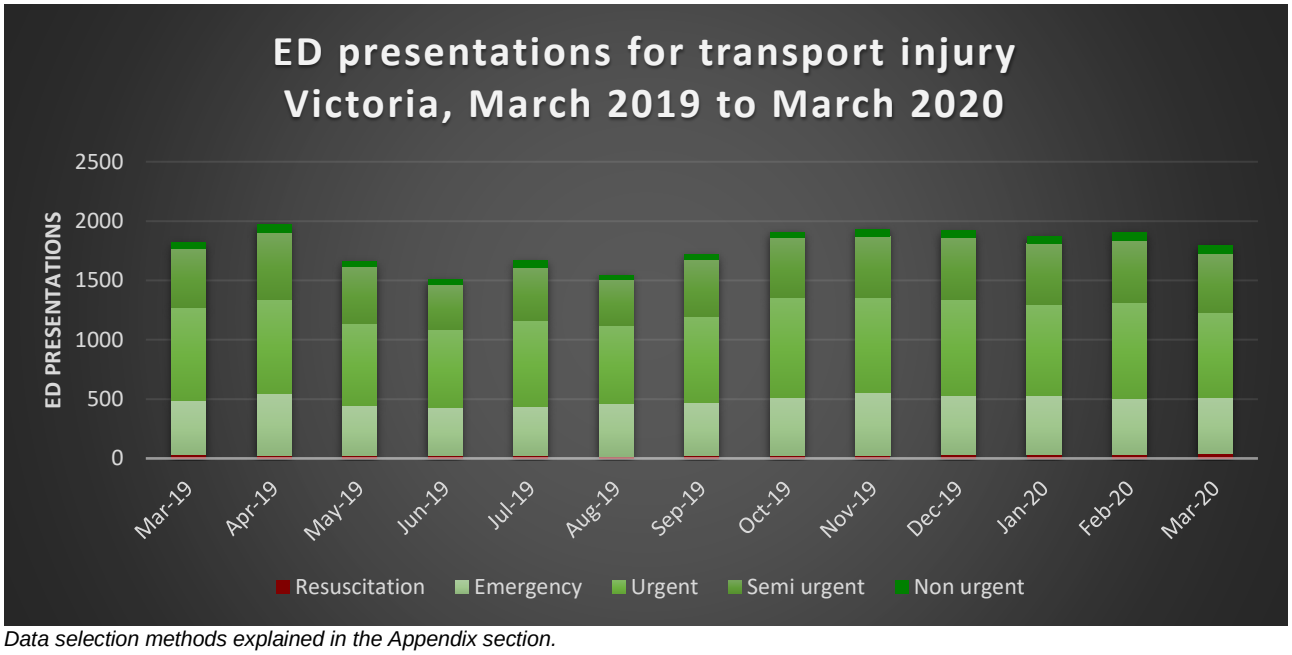

Unintentional farm injury: FEMALES
ED presentations
70
60
50
40
30
20
10
0
0-14yrs
15-24yrs
25-64yrs
65+yrs
Mar-19 13 27 55 8
Mar-20 9 24 58 6
Mar-19
Mar-20


Unintentional farm injury: Cause groups
transport
fall
natural/environmental/animals
hit/struck/crush
cutting/piercing
other specified unintentional
other
-2
+10
-4
+2
-15
0
-10
Mar-19
Mar-20
0
10
20
30
40
50
60
70
80
90
ED presentations


Unintentional farm injury: Ten most common injury types
Fracture
Open wound
Sprain or strain
Superficial
Injury to muscle or tendon
Injury of unspecified nature
Multiple injuries
Other specified nature of injury
Crushing injury
Bite
-17
-3
+1
-4
+8
0
-7
0
+1
+4
Mar-19
Mar-20
0
10
20
30
40
50
60
70
80
ED presentations

Transport Injury

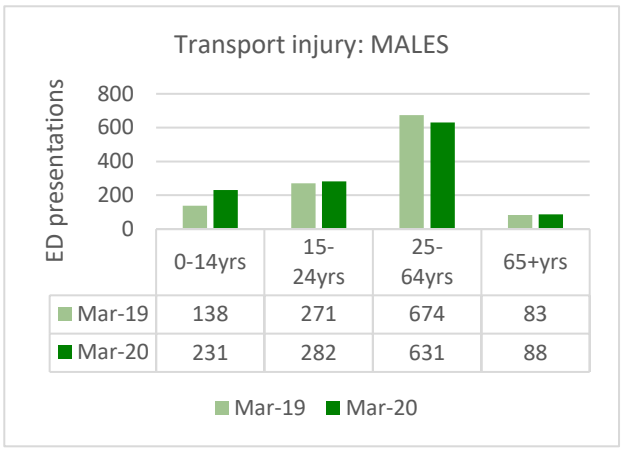
- The total number of ED presentations for transport injury was **slightly lower** in March 2020 than in March 2019. *Proportional to ED caseload* (including only cases that were not directly or indirectly related to viral or respiratory illness issues), however, ED presentations for transport injuries **increased**.
- Given the overall reduction in health service use through the ED (for non- viral or respiratory illness issues), the number of transport injuries during lockdown are likely to be **underestimated** by these ED statistics.
- The number of transport injuries presentations to the ED **increased slightly** from March 2019 to March 2020 among children aged up to 14 years; however, small sample size and general reductions in service use prevent statistical significance testing.
- An **increase** in pedal cyclist injuries was observed from March 2019 to March 2020; a concomitant **decrease** in motor vehicle injuries was observed.
- The injury types which **decreased the most** from March 2019 to March 2020 were sprains and strains; the injury types which **increased the most** were fractures. This supports the presence of a higher threshold for health service use through the ED during lockdown.

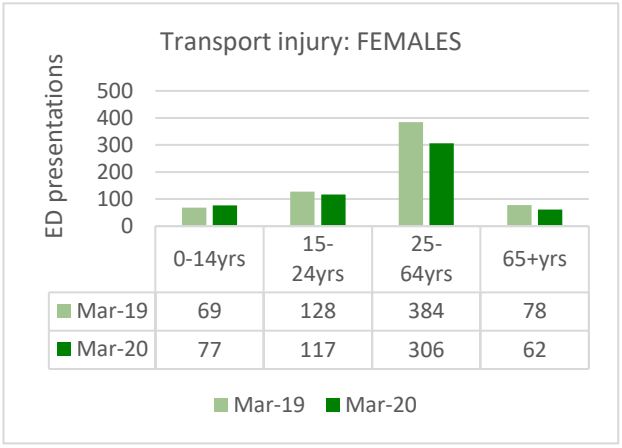


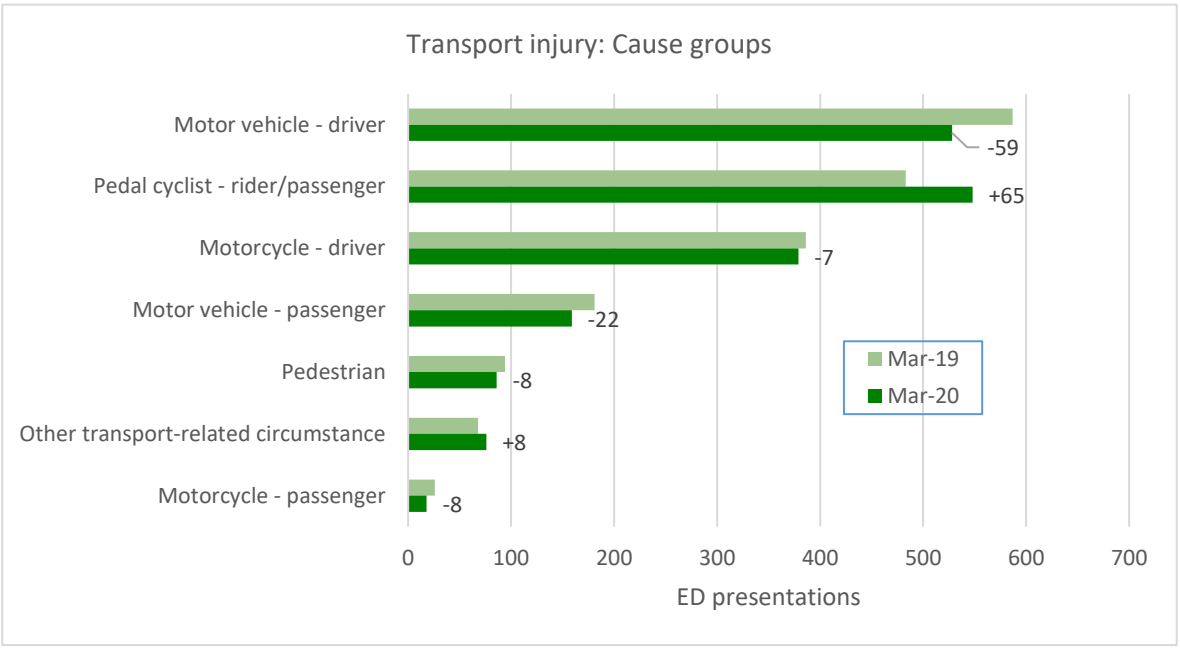
Data selection methods explained in the Appendix section.

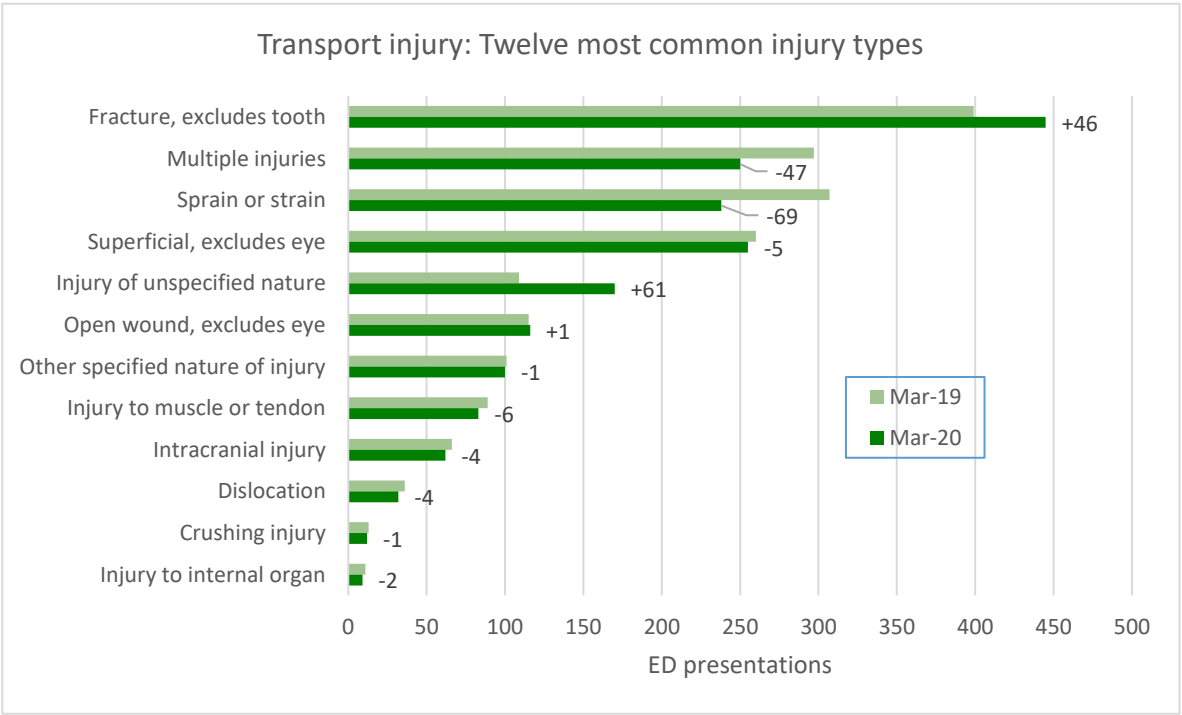
	March 2019			March 2020			
Triage status	**Injury cases**	**ED Presentations***	**Ratio**	**Injury cases**	**ED Presentations***	**Ratio**	**Change in ratios**
Resuscitation	30	389	0.077	40	382	0.105	+36%
Emergency	457	7399	0.062	471	6436	0.073	+18%
Urgent	786	26005	0.030	716	21208	0.034	+12%
Semi-urgent	495	27548	0.018	492	22170	0.022	+24%
Non-urgent	57	5089	0.011	75	5179	0.014	+29%
Total	**1825**	**66430**	**0.027**	**1794**	**55375**	**0.032**	**+18%**

**For VEMD caseload calculations, only ED presentations that were considered unlikely to be directly or indirectly related to the pandemic were included. (See Appendix for details).*


Transport injury: MALES
ED presentations
800
600
400
200
0
0-14yrs
15-24yrs
25-64yrs
65+yrs
Mar-19 138 271 674 83
Mar-20 231 282 631 88
Mar-19
Mar-20

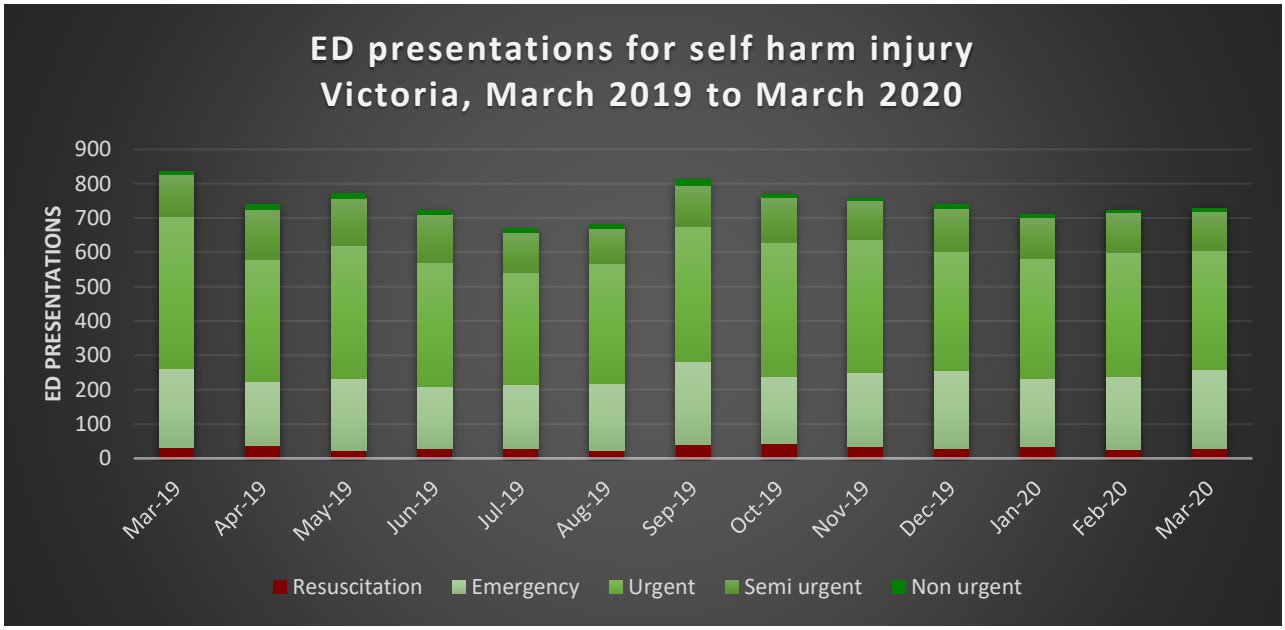

Transport injury: FEMALES
ED presentations
500
400
300
200
100
0
0-14yrs
15-24yrs
25-64yrs
65+yrs
Mar-19 69 128 384 78
Mar-20 77 117 306 62
Mar-19
Mar-20


Transport injury: Cause groups
Motor vehicle - driver
Pedal cyclist - rider/passenger
Motorcycle - driver
Motor vehicle - passenger
Pedestrian
Other transport-related circumstance
Motorcycle - passenger
-59
+65
-7
-22
-8
+8
-8
Mar-19
Mar-20
0
100
200
300
400
500
600
700
ED presentations


Transport injury: Twelve most common injury types
Fracture, excludes tooth
Multiple injuries
Sprain or strain
Superficial, excludes eye
Injury of unspecified nature
Open wound, excludes eye
Other specified nature of injury
Injury to muscle or tendon
Intracranial injury
Dislocation
Crushing injury
Injury to internal organ
+46
-47
-69
-5
+61
+1
-1
-6
-4
-4
-1
-2
Mar-19
Mar-20
0
50
100
150
200
250
300
350
400
450
500
ED presentations

Self-Harm Injury

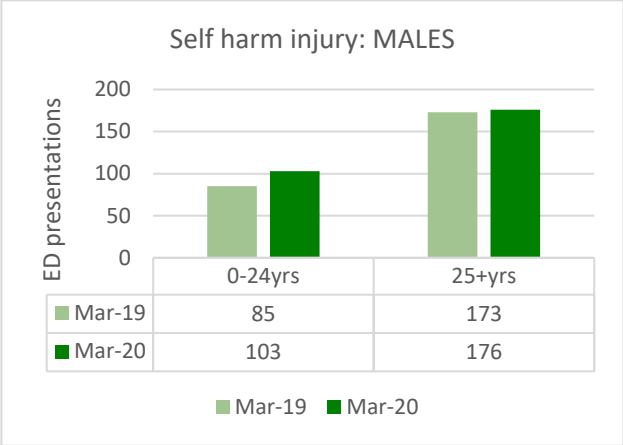
- All self-harm injury presentations to the ED were included; this analysis was not limited to those that occurred in the home.
- The total number of ED presentations for self-harm injury was **lower** in March 2020 than in March 2019, while *proportional to ED caseload* (including only cases that were not directly or indirectly related to viral or respiratory illness), ED presentations for self-harm **remained relatively stable.**
- Given the overall reduction in health service utilisation through the ED (for non-viral or respiratory illness issues), the number of self-harm injuries during lockdown are likely to be **underestimated** by these ED statistics.
- The number of self-harm injury presentations **increased** from March 2019 to March 2020 among males; however, due to small sample size and general reductions in service use, these statistics are not suited for significance testing. At both timepoints, the majority of cases involved (young) women.

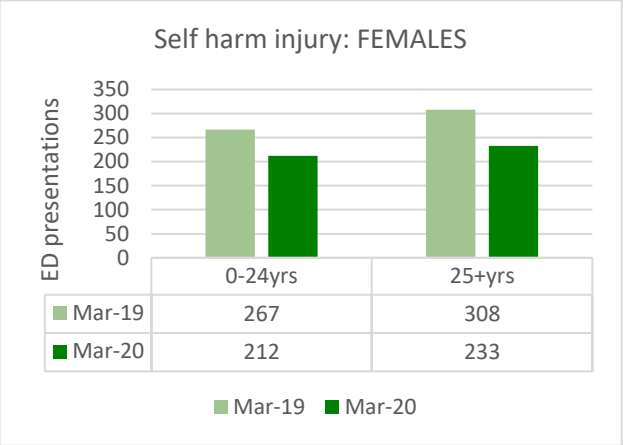


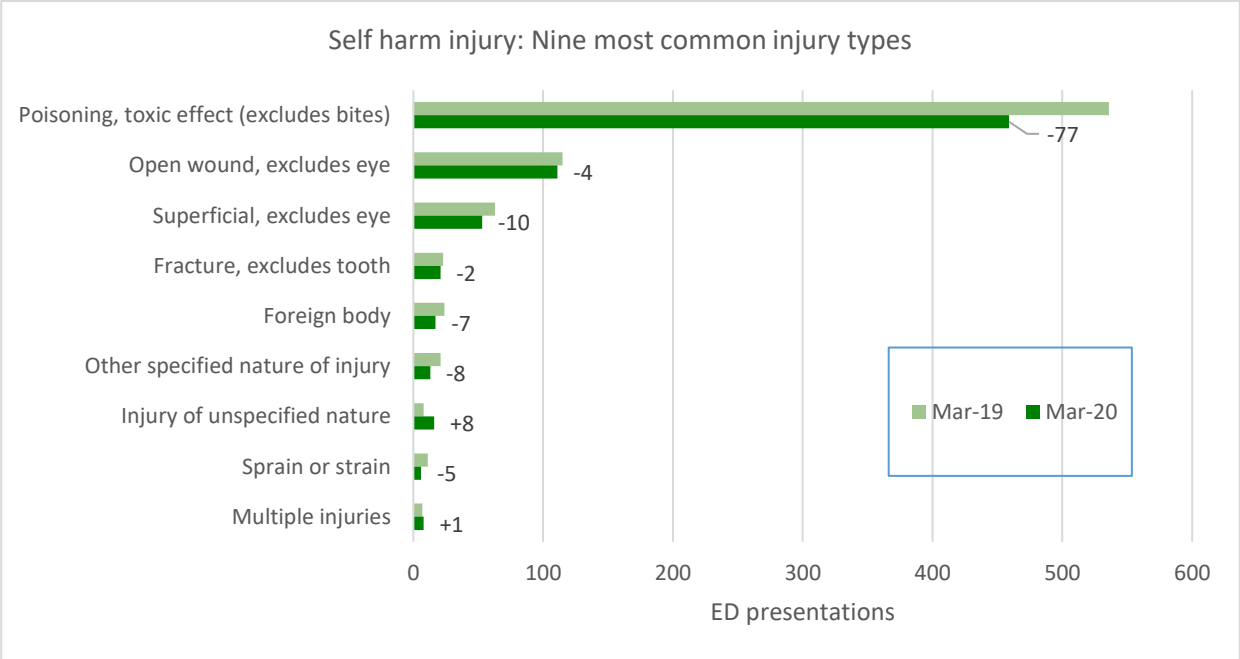
Data selection methods explained in the Appendix section.

	March 2019			March 2020			
Triage status	**Injury cases**	**ED Presentations***	**Ratio**	**Injury cases**	**ED Presentations***	**Ratio**	**Change in ratios**
Resuscitation	33	389	0.085	28	382	0.073	-14%
Emergency	228	7399	0.031	231	6436	0.036	+16%
Urgent	442	26005	0.017	347	21208	0.016	-4%
Semi-urgent	123	27548	0.004	114	22170	0.005	+15%
Non-urgent	11	5089	0.002	9	5179	0.002	-20%
Total	**837**	**66430**	**0.013**	**729**	**55375**	**0.013**	**+4%**

**For VEMD caseload calculations, only ED presentations that were considered unlikely to be directly or indirectly related to the pandemic were included. (See Appendix for details).*

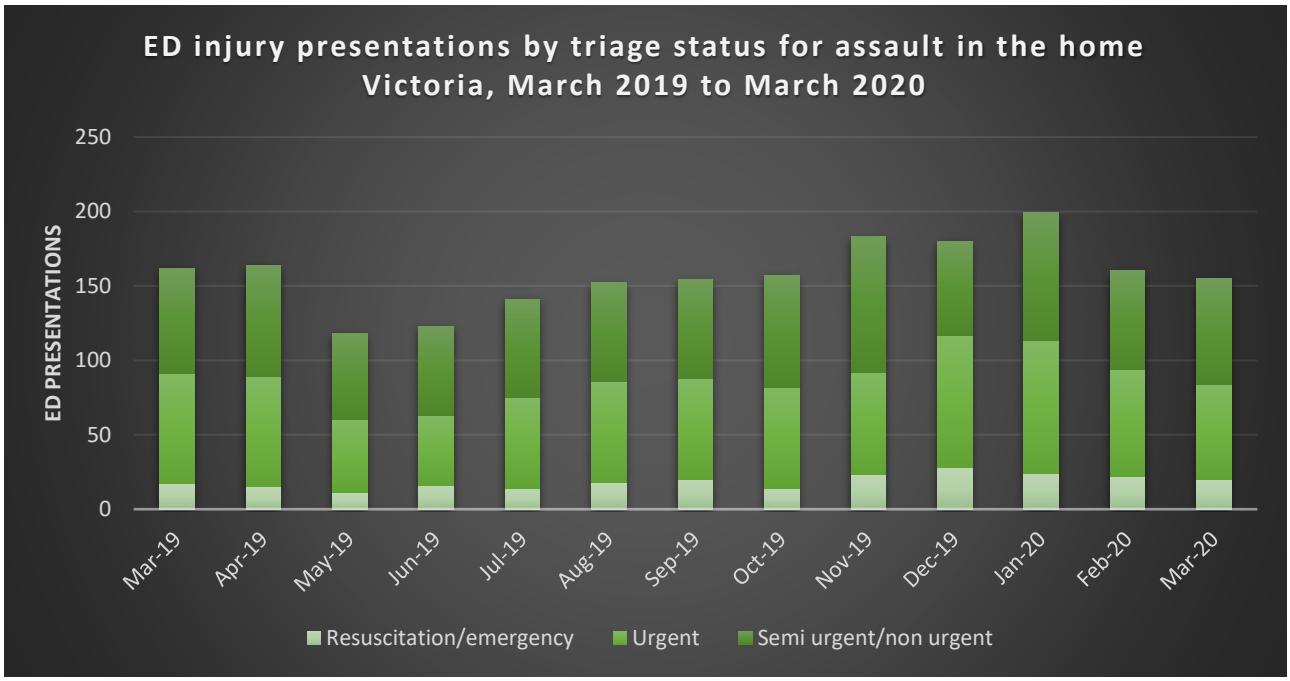

Self harm injury: MALES
ED presentations
200
150
100
50
0
0-24yrs
25+yrs
Mar-19
85
173
Mar-20
103
176
Mar-19
Mar-20


Self harm injury: FEMALES
ED presentations
350
300
250
200
150
100
50
0
0-24yrs
25+yrs
Mar-19
267
308
Mar-20
212
233
Mar-19
Mar-20


Self harm injury: Nine most common injury types
Poisoning, toxic effect (excludes bites)
Open wound, excludes eye
Superficial, excludes eye
Fracture, excludes tooth
Foreign body
Other specified nature of injury
Injury of unspecified nature
Sprain or strain
Multiple injuries
-77
-4
-10
-2
-7
-8
+8
-5
+1
Mar-19
Mar-20
0
100
200
300
400
500
600
ED presentations

Assault Injury (Home only)

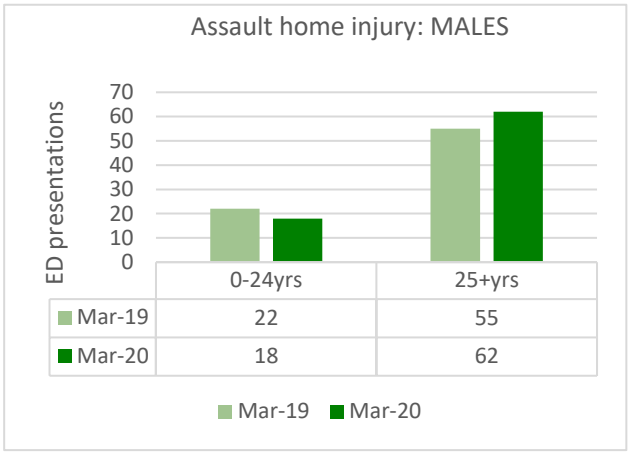
- The total number of ED presentations for assault-related injury that occurred in the home was **slightly lower** in March 2020 than in March 2019. However, *proportional to ED caseload* (including only cases that were not directly or indirectly related to viral or respiratory illness), ED presentations for assault in the home did not decrease**.**
- Given the overall reduction in health service use through the ED (for non-viral or respiratory illness issues), the number of assault-related home injuries during lockdown are likely to be **underestimated** by these ED statistics.
- The number of assault related home injury presentations from March 2019 to March 2020 **increased** among males aged 25 years and above; however, due to small sample size and general reductions in service use, these statistics are not suited for significance testing.
- The injury types which **decreased the most** from March 2019 to March 2020 were superficial injuries, suggesting a higher threshold for health service use through the ED.

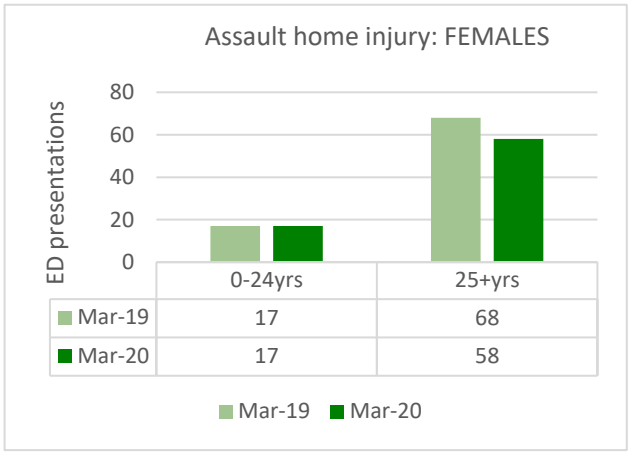


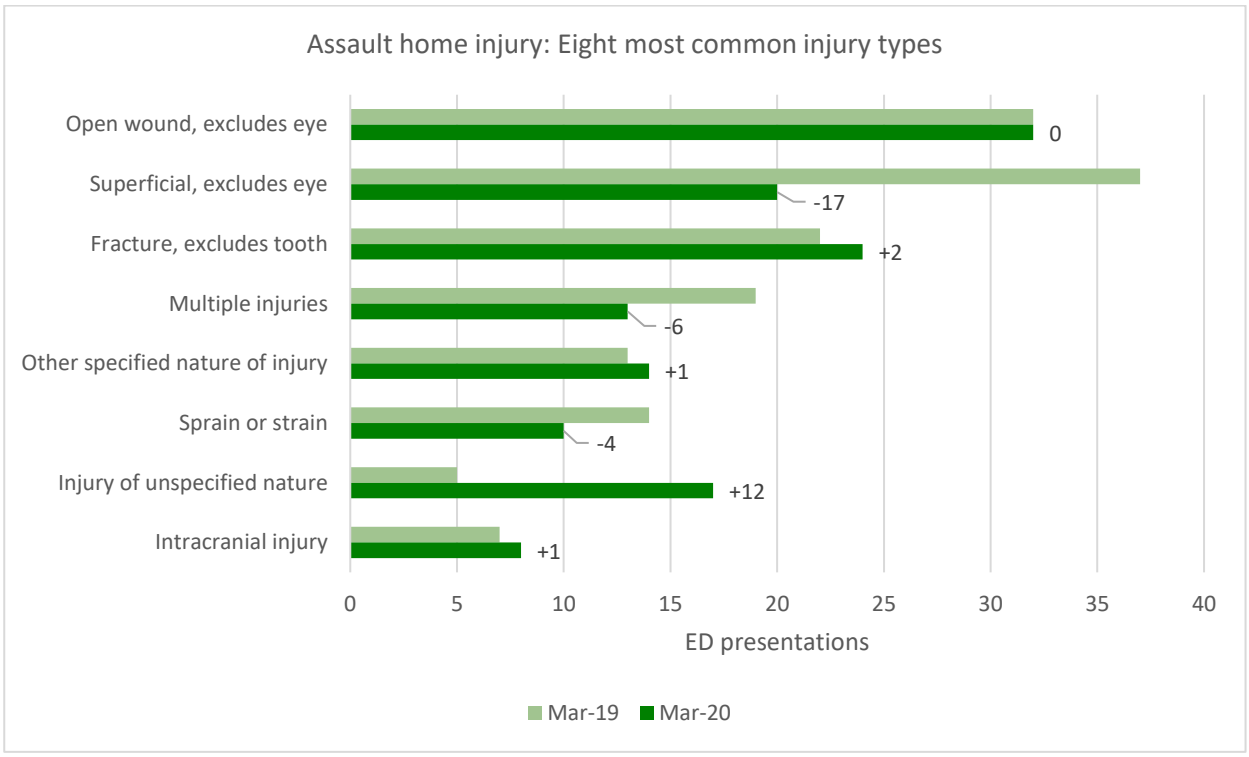
Data selection methods explained in the Appendix section.

	March 2019			March 2020			
Triage status	**Injury cases**	**ED Presentations***	**Ratio**	**Injury cases**	**ED Presentations***	**Ratio**	**Change in ratios**
Resuscitation, Emergency	16	7788	0.0021	20	6818	0.0029	+43%
Urgent	67	26005	0.0026	56	21208	0.0026	+2%
Semi-urgent, non-urgent	62	32637	0.0019	65	27349	0.0024	+25%
Total	**145**	**66430**	**0.0022**	**141**	**55375**	**0.0025**	**+17%**

**For VEMD caseload calculations, only ED presentations that were considered unlikely to be directly or indirectly related to the pandemic were included. (See Appendix for details).*


Assault home injury: MALES
ED presentations
70
60
50
40
30
20
10
0
0-24yrs
25+yrs
Mar-19
22
55
Mar-20
18
62
Mar-19
Mar-20


Assault home injury: FEMALES
ED presentations
80
60
40
20
0
0-24yrs
25+yrs
Mar-19
17
68
Mar-20
17
58
Mar-19
Mar-20


Assault home injury: Eight most common injury types
Open wound, excludes eye
0
Superficial, excludes eye
-17
Fracture, excludes tooth
+2
Multiple injuries
-6
Other specified nature of injury
+1
Sprain or strain
-4
Injury of unspecified nature
+12
Intracranial injury
+1
0
5
10
15
20
25
30
35
40
ED presentations
Mar-19
Mar-20

Appendix

METHODS

Data from March 2019 to March 2020 from the Victorian Emergency Minimum Dataset (VEMD), which holds deidentified clinical records of presentations at Victorian public hospitals with designated 24-hour emergency departments, were used to compile this bulletin.

The focus of this Ebulletin is on the latest available data (March 2020) to show the changes in injury profiles since the coronavirus pandemic; data from the same month last year (March 2019) are used as comparison.

The changes in injury-related ED presentations are calculated proportional to other ED presentations that are unlikely to be directly affected by the pandemic. This is to account for health service attendance threshold changes.

EMERGENCY DEPARTMENT HEALTH SERVICE UTILISATION

ED presentations overall (not limited to injury) were selected to generate statistics on health service use overall during the March 2019 to March 2020 period. Only ED presentations that were 'emergency presentations' were included: this excludes planned return visits, pre-arranged admissions and those that were dead on arrival. Rates per 100,000 population were calculated; the denominators used for calculating rates were September 2019 population estimates from the Australian Bureau of Statistics.

For comparisons between March 2019 and March 2020, September 2018 and September 2019 population data were used, respectively, as these were the most recent available data with 12 months in between. 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.

For VEMD caseload calculations, only ED presentations that were considered unlikely to be directly or indirectly related to the pandemic were included:

ED presentations with a first diagnosis code in:

- Neoplasms (c00–d48);
- Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism (d50–d89);
- Endocrine, nutritional and metabolic diseases (e00–e89);
- Mental and behavioural disorders (f00–f99);
- Diseases of the nervous system (g00–g99);
- Diseases of the eye and adnexa (h00–h59);
- Diseases of the ear and mastoid process (h60–h95);
- Diseases of the circulatory system (i00–i99);
- Diseases of the digestive system (k00–k93);
- Diseases of the skin and subcutaneous tissue (l00–l99);
- Diseases of the musculoskeletal system and connective tissue (m00–m99);
- Diseases of the genitourinary system (n00–n99);
- Pregnancy, childbirth and the puerperium (o00–o99);
- Certain conditions originating in the perinatal period (p00–p96);
- Congenital malformations, deformations and chromosomal abnormalities (q00–q99).

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 and those that were dead on arrival).

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) while **unintentional farm injuries** were unintentional injury cases with a ‘Place where injury occurred’ code “F” (Farm).

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)).

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).

Assault injury cases were those 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. Assault cases were contained to those with a ‘Place where injury occurred’ code “H” (Home).

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