



COVID-19 in Western Australia

Bulletin 4: The impact on seeking emergency care



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Introduction

COVID-19 has resulted in unprecedented changes to the daily lives of Western Australians.

This bulletin is the fourth in a series of bulletins produced by the Epidemiology Branch of the Department of Health investigating the impact of COVID-19 on various aspects of the lives of Western Australians. This bulletin investigates the impact of the COVID-19 restrictions on the need for emergency care by the Western Australian population. Bulletin 1 presents an introduction to the project and an overview of the COVID-19 control measures in WA, as well as lifestyle impacts of the COVID-19 control measures. Bulletin 2 presents an overview of the mental health impacts of the pandemic, while bulletin 3 looks at the impacts of the COVID-19 control measures on other communicable diseases.

Please find Bulletins 1, 2 and 3 here:

<https://ww2.health.wa.gov.au/Reports-and-publications/COVID19-in-WA-bulletins>

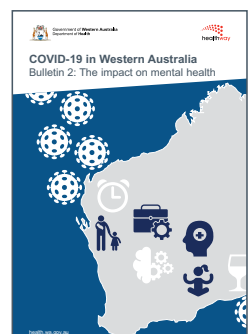
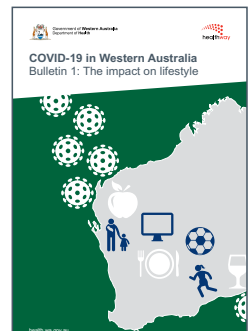
Despite the current success in controlling COVID-19 in WA, concerns remain about whether Western Australians may have delayed or avoided seeking emergency care during the period of the COVID-19 restrictions, and what the implications of any delay or avoidance may be for health outcomes and service provision.

This bulletin reports on data from four different sources to describe changes in emergency care seeking behaviour that occurred during the period of COVID-19 restrictions in WA. The identification of any impacts on emergency care seeking behaviour is vital to understanding, and responding promptly, to issues that could arise if restrictions are required to be reintroduced in the future.

COVID-19 control measures

For WA, the major impacts of the COVID-19 control measures, so far, have been felt during March, April and May 2020. For a timeline of the COVID-19 interventions and case counts for WA, please see Bulletin 1.

Responses to COVID-19 during this time included stay-at-home orders, physical distancing recommendations, the closure of recreation facilities and non-essential businesses, limits on the sale of medicines, recommendations for home-schooling and purchase limits on staple food items and takeaway alcohol.



Methods



To better understand the impact of COVID-19 control measures on emergency care seeking behaviour of the WA population, the WA Department of Health used data collected from four different sources.

1. St John WA provides emergency ambulance services to the Western Australian community. Information on the number and type of ambulance call-outs are a key indicator of demand for emergency services.
2. The Emergency Department Data Collection (EDDC) collects information on all presentations to emergency departments (EDs) at public hospitals in WA. Information on the number and type of presentations at EDs reflects acute health care need.
3. Deaths from the WA Registry of Births, Deaths and Marriages (RBDM). This data set includes records of all deaths occurring in WA, but for 2019 and 2020, the causes of deaths were not available for analysis.
4. The Australian Bureau of Statistics (ABS) deaths dataset. This data set includes aggregate counts of doctor certified deaths registered in WA by a limited number of specific causes.

Introduction to St John WA



St John WA records information on the dispatch of ambulances and the treatment of patients in the Computer Aided Dispatch (CAD) and Electronic Patient Care Record (ePCR) systems. This data is used for operational planning, to manage performance, and for broader analysis to improve the services delivered to the community.

Introduction to the EDDC

The EDDC is a comprehensive data set of all presentations to EDs at public hospitals and major contracted health entities Joondalup Health Campus, Peel Health Campus and St John of God Midland in WA. In addition to data specifically related to episodes of care within EDs, the collection also includes demographic data.

For more information on EDDC see: <https://www.datalinkage-wa.org.au/data/available-datasets/>

Introduction to the RBDM and ABS death datasets



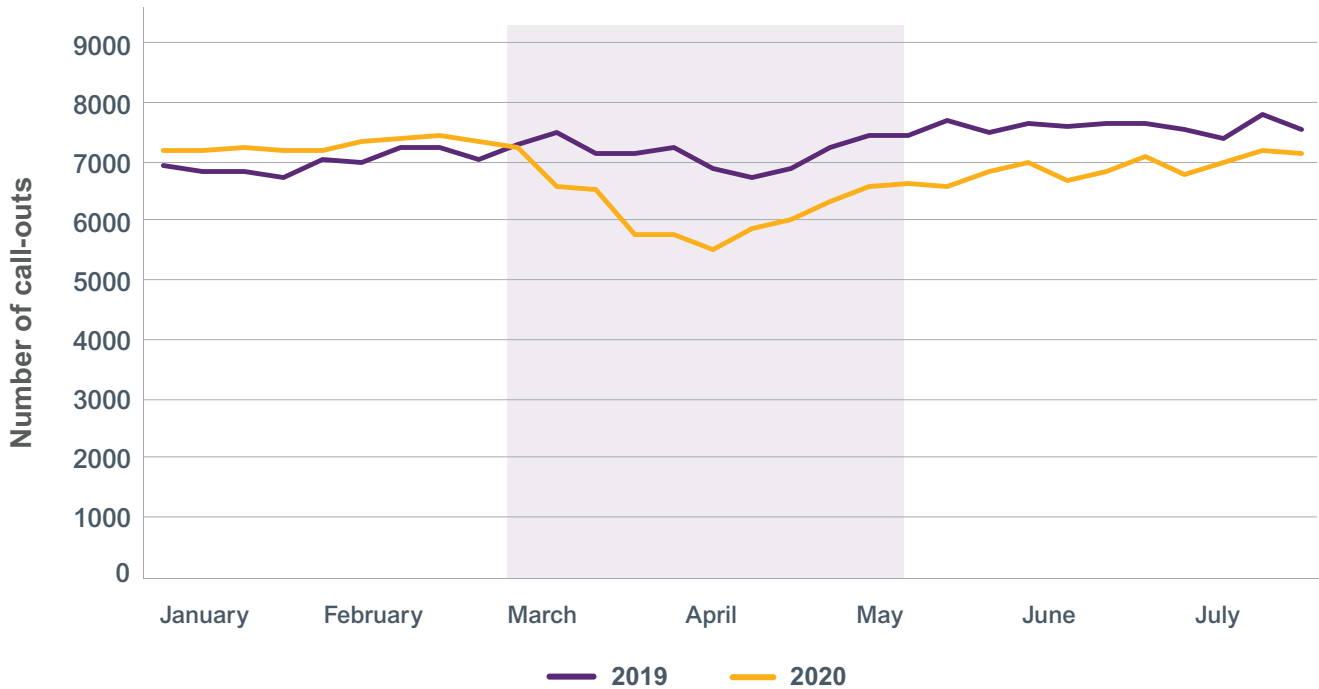
While the RBDM contains a record of all deaths registered in WA, the official cause of death is only available after the death information has been reviewed and coded by the ABS. Cause of death information is not generally available from the ABS until two years after the death was registered. The ABS undertook to fast-track the coding for a select number of causes to be able to provide early provisional cause of death information to assist in the COVID-19 response. The provisional nature of the data means that the assigned cause of death can be subject to change for up to two years if more information becomes available. Deaths that require coronial investigation, such as those due to road trauma or suicide were not available as part of the ABS dataset. Counts of overall deaths in this bulletin were derived from the RBDM dataset while information on selected specific causes of death was provided by the ABS.

Overall emergency care seeking

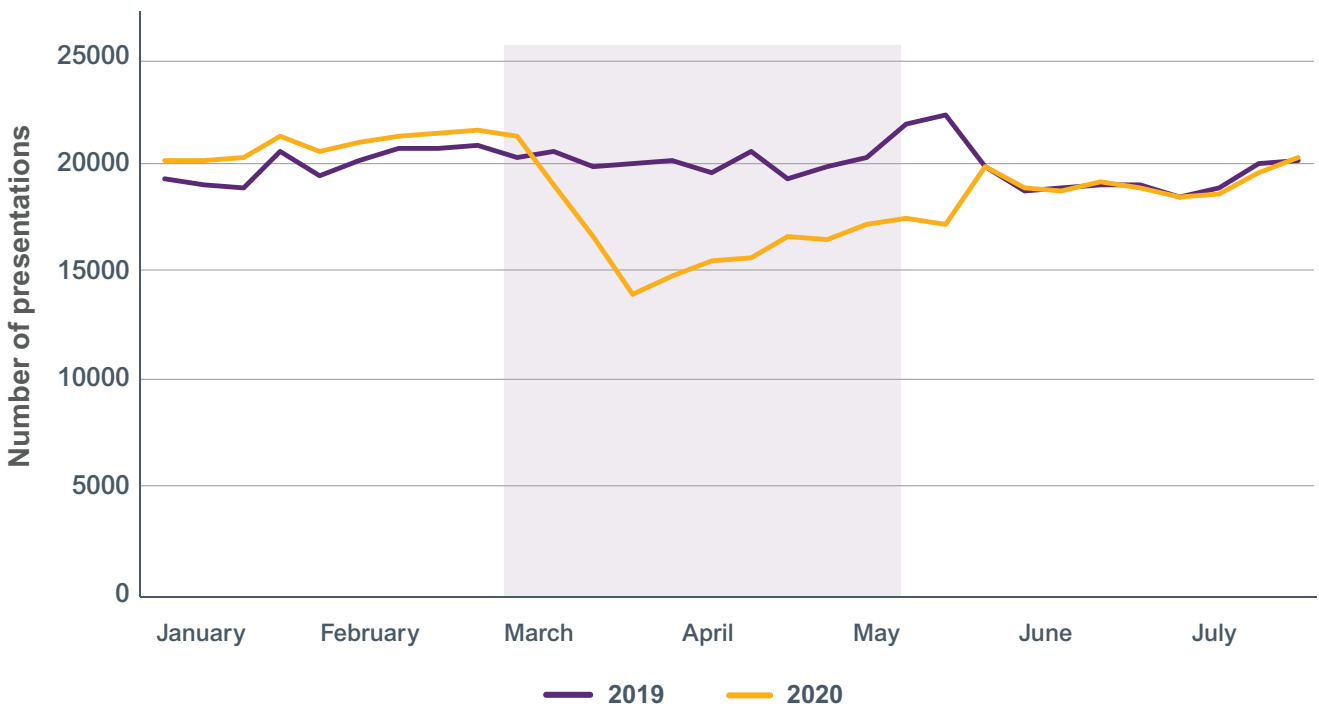


Ambulance call-out data from St John WA, and information on ED presentations indicate a downturn in overall emergency care seeking behaviour during March-April-May 2020 (the COVID-19 period), compared to the previous year.

Total ambulance call-outs



Total ED presentations



Cause specific emergency care seeking



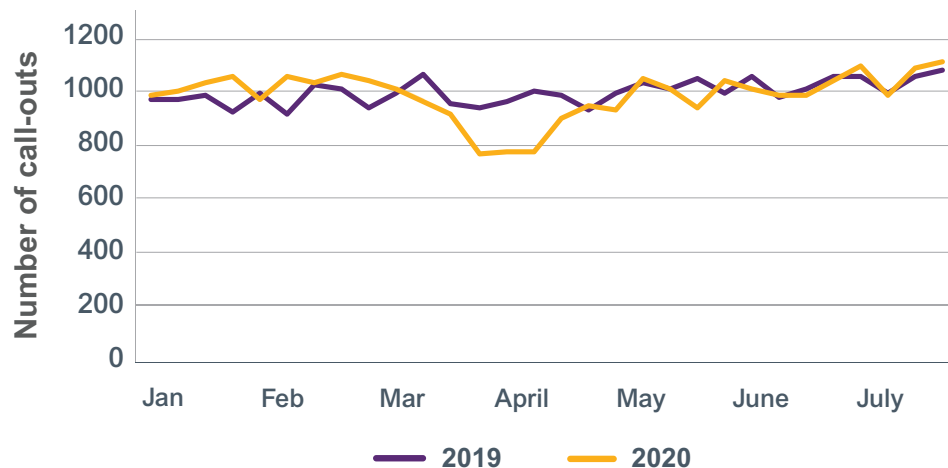
The downturn in ambulance call-outs and ED presentations during April 2020 was evident across most major causes, **with the exception of** respiratory conditions and infectious diseases which showed an initial increase in March, before declining in April.

Some of the reduction is likely to be a byproduct of the COVID-19 control measures. For example, stay-at-home orders and the closure of regional and state borders may have contributed to a reduction in emergency care seeking for road trauma/injury. In addition, the social control measures introduced in March, such as physical distancing and hand hygiene likely contributed to the subsequent downturn in emergency care seeking for respiratory and infectious diseases.

However, reductions for other categories, for example cardiac or musculoskeletal call-outs or ED presentations for diseases of the circulatory system, digestive system, and nervous system, and pregnancy and childbirth, are not easily explained by interventions to control COVID-19. These reductions may be explained by people avoiding going to the EDs.

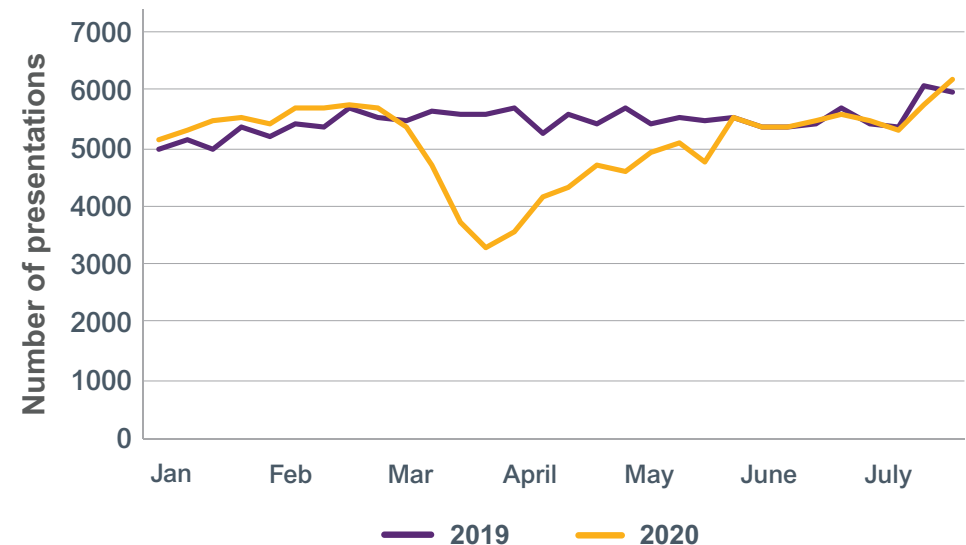
Ambulance call-outs

Ambulance call-outs for: 'Trauma and Poisoning'



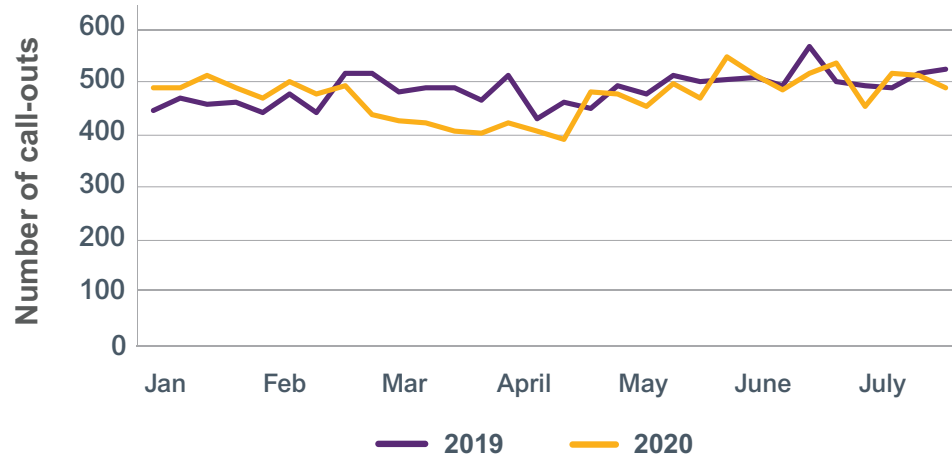
ED presentations

ED presentations for: 'Injury and poisoning'



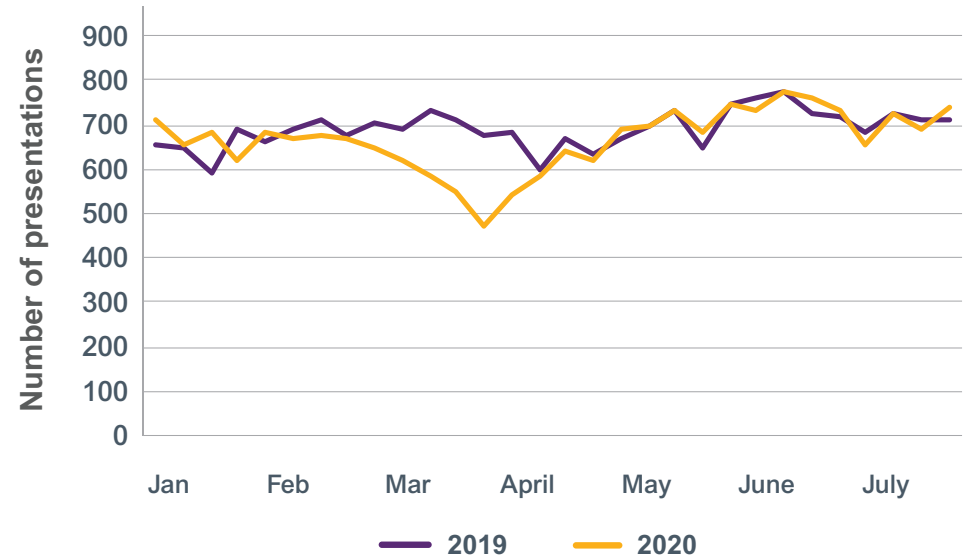
Ambulance call-outs

Ambulance call-outs for: 'Cardiac conditions'

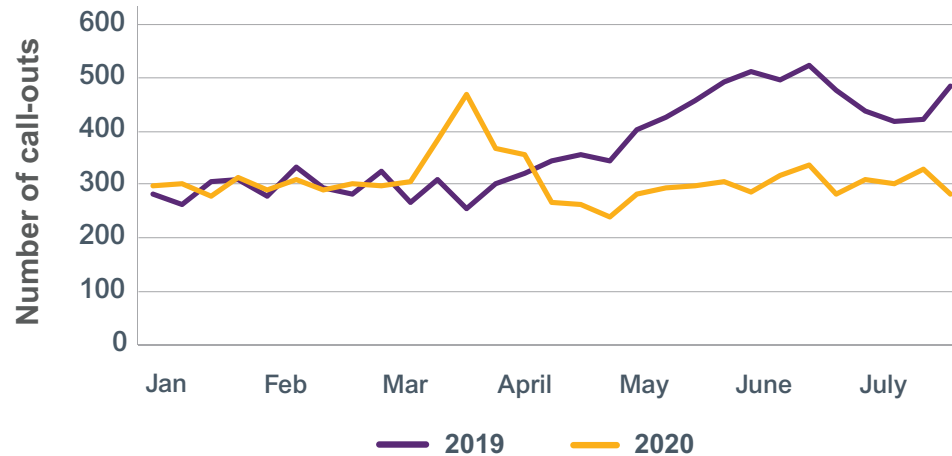


ED presentations

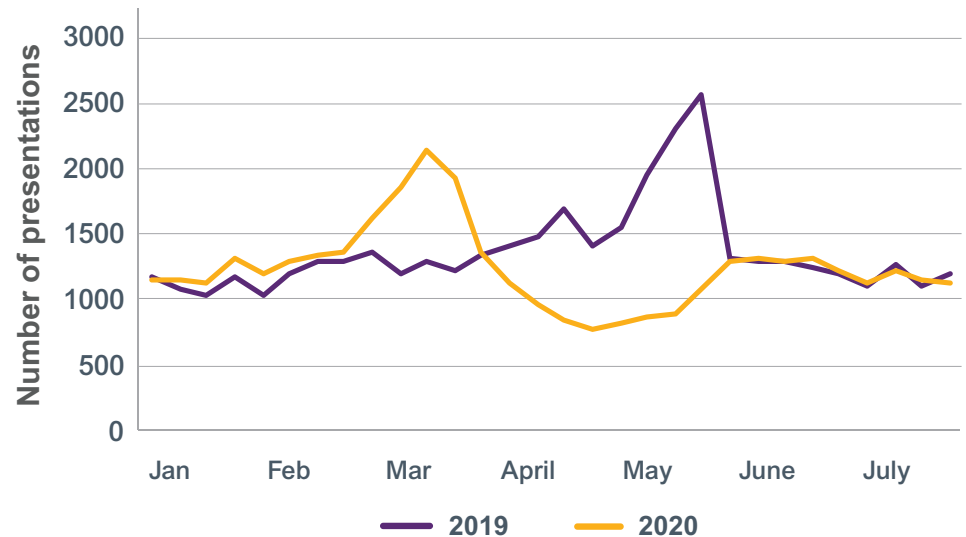
ED presentations for: 'Diseases of the circulatory system'



Ambulance call-outs for: 'Respiratory conditions'

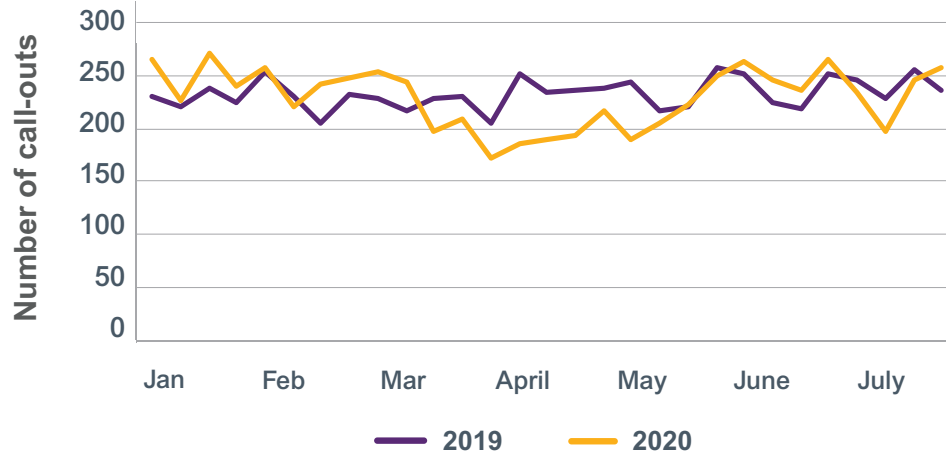


ED presentations for: 'Diseases of the respiratory system'



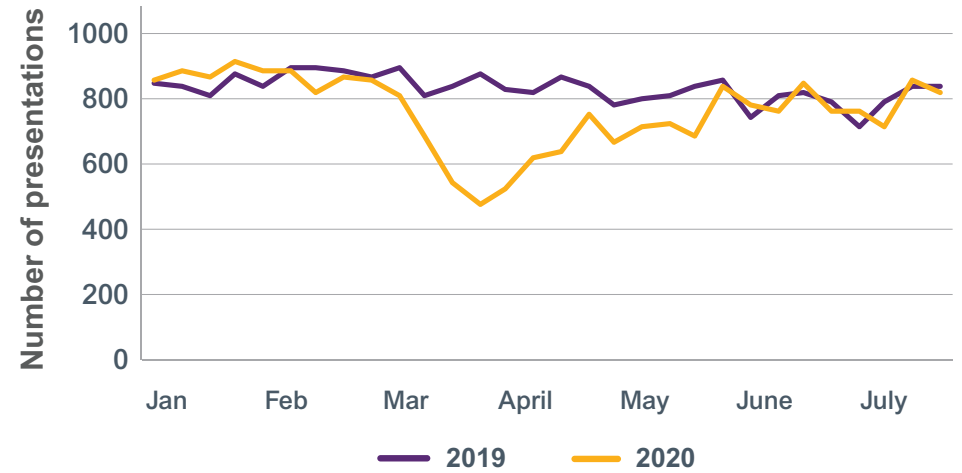
Ambulance call-outs

Ambulance call-outs for: 'Musculoskeletal conditions'

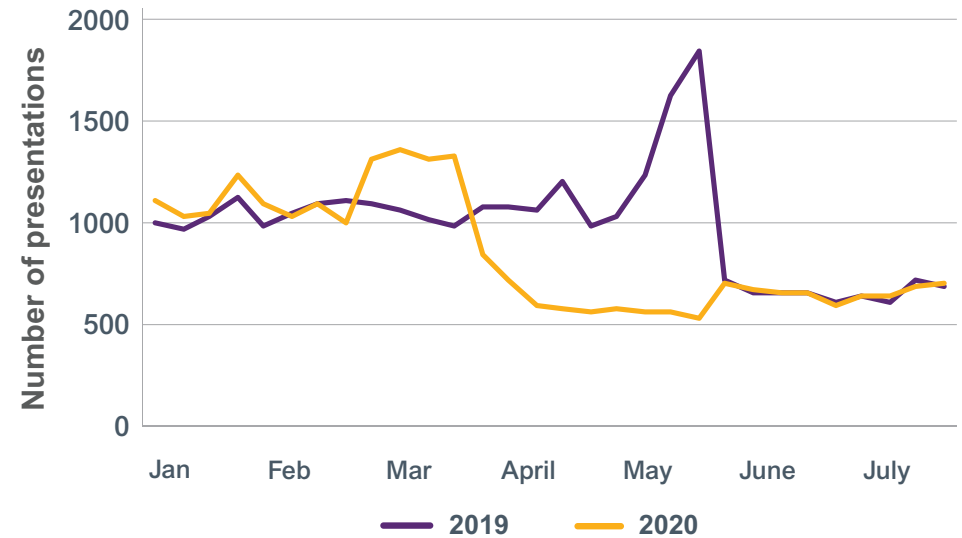


ED presentations

ED presentations for: 'Diseases of the musculoskeletal system'

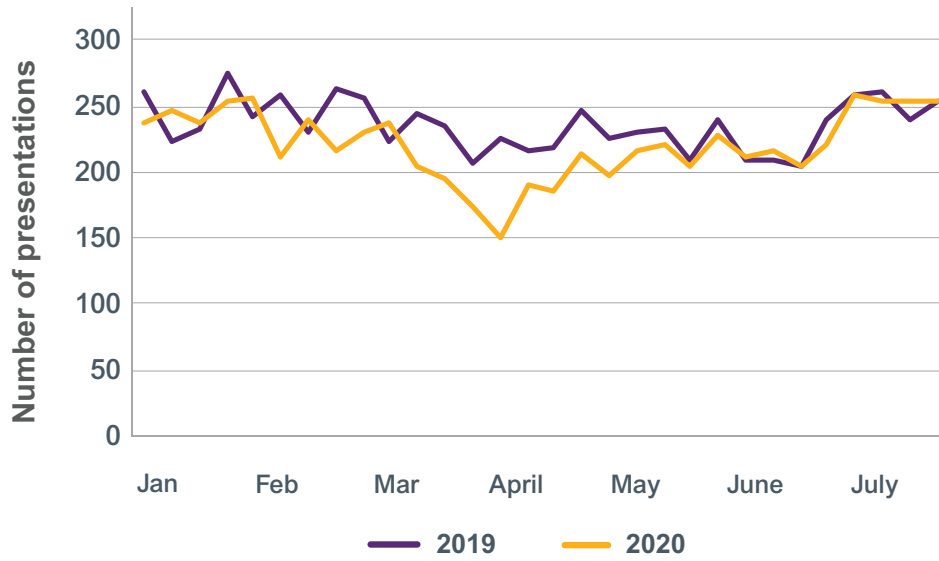


ED presentations for: 'Infectious diseases'



ED presentations

ED presentations for: 'Pregnancy and childbirth'



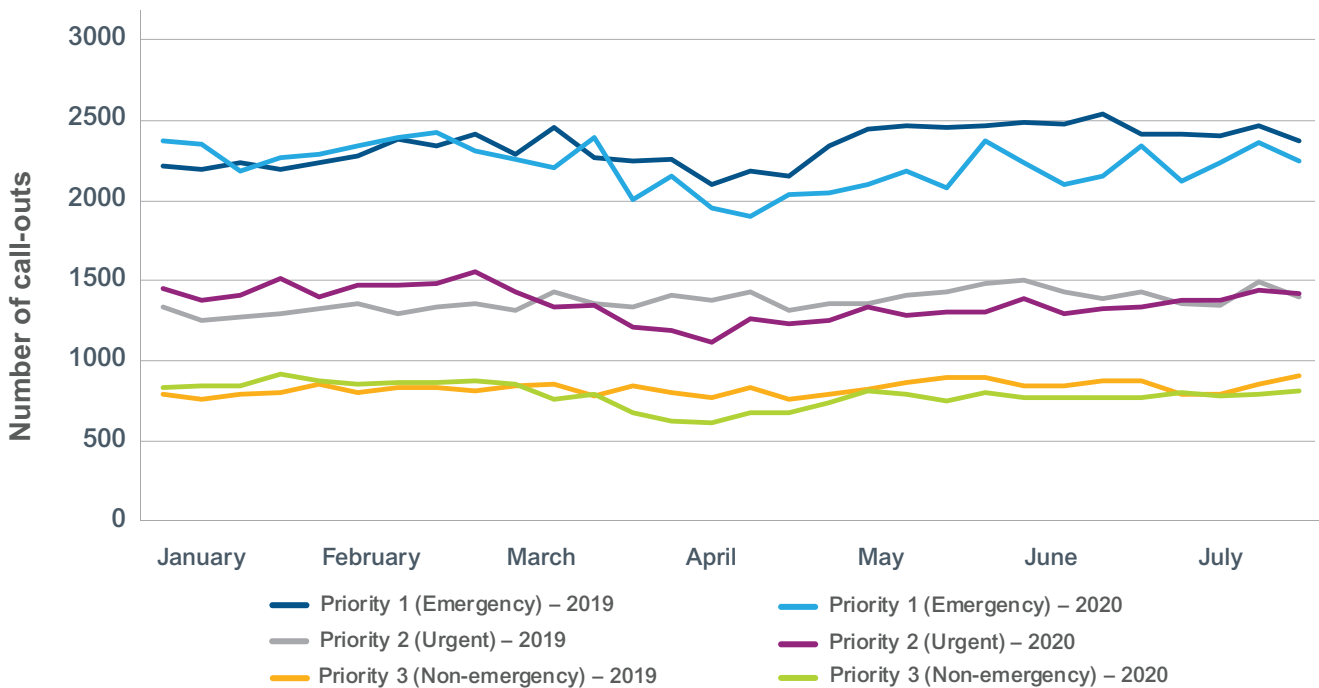
Severity of emergencies



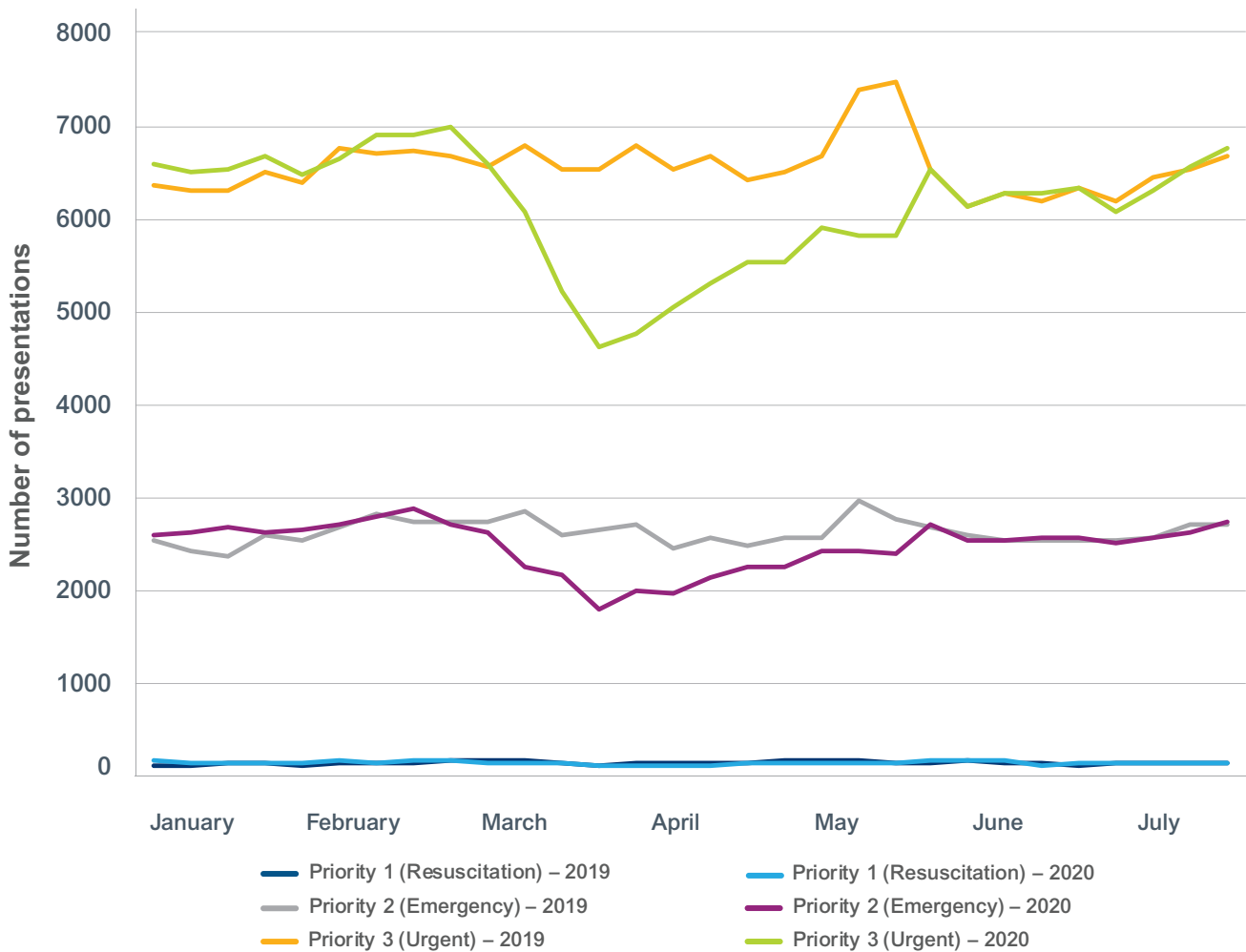
There were concerns that delays in seeking emergency care could be resulting in more severe admissions and potentially (non-COVID-19 related) excess deaths.

Ambulance call-out data by priority do not indicate an increase in the severity of call-outs, with fewer emergency level or urgent level incidents in 2020 compared with 2019. Similarly, ED presentations for the three most urgent triage categories, do not show an increase in the severity of presentations in 2020 compared to the previous year.

Ambulance call-outs by priority



ED presentations by priority



Excess deaths

Comparing the observed number of deaths during the COVID-19 period with the expected number of deaths based on data from the RDBM for the previous 5-years (2015-2019), shows there were 192 greater deaths than expected.



This represents a 6 per cent (statistically significant) excess (95% CI 2% – 9%) in the total number of deaths for those three months. Excess deaths during March-April-May has been reported across most other States as well as Nationally. National data also subsequently shows fewer than usual deaths reported in June-July-August [1].

Comparison	Actual number of deaths during COVID-19 Period	Expected number of deaths during COVID-19 Period	Number of Excess deaths
COVID-19 period vs same months in 2015-19	3,677	3,484.95	192.1

Limited information on six major causes of death in WA (respiratory diseases, cancers, ischemic heart diseases, cerebrovascular diseases, dementia and diabetes) is available from the ABS. Results compare the COVID-19 period with an average for the same three-month period over the previous five-years (2015-2019) (the baseline period).

COVID-19 period	Baseline period
March-April-May 2020	Average of March-April-May 2015-2019

Of the six causes, Dementia, Diabetes and Respiratory deaths showed an increase in the average daily number of deaths across all or part of the COVID-19 period compared to the baseline period. However, none of the increases were statistically significantly different. Deaths from cancer and ischemic heart diseases showed non-statistically significant decreases in the average daily number of deaths. Information on deaths undergoing coronial investigation such as those due to trauma or suicide was not available.

Conclusions

Evidence from St John Ambulance call-outs and ED presentations indicates that demand for emergency care was reduced during the COVID-19 period.

A small excess of (non-COVID-19) deaths was also seen in WA during this time, consistent with what has been reported in other states and nationally. If restrictions are required to be reintroduced in the future, public health messaging should continue to highlight the importance of seeking emergency care when required.



Acknowledgements

The Epidemiology Branch gratefully acknowledges the support of Healthway in undertaking this project, and the contribution of St John WA and the Australian Bureau of Statistics for the use of their data.

References

1. Australian Bureau of Statistics, Provisional Mortality Statistics Jan – Oct 2020. Available from: <https://www.abs.gov.au/statistics/health/causes-death/provisional-mortality-statistics/latest-release> [released: 21/12/2020; accessed 25/01/2020].

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Enquiries

Epidemiology Branch +61 8 9222 2496 epi@health.wa.gov.au

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