

Exploring the impact of COVID-19 pandemic on emergency department use in British Columbia

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A new study showing the impact of the COVID-19 pandemic and mitigation strategies used to manage the virus on emergency department (ED) visits in British Columbia can help with future planning. The study

is published in the *Canadian Medical Association Journal (CMAJ)*.

"Evaluation of the effects of the pandemic and associated measures can provide a historical account and inform health care service planning for both post-pandemic recovery and mitigation of potential consequences of restrictions for future pandemics," write scientists from the British Columbia Centre for Disease Control (BCCDC) and Vancouver Coastal Health, Vancouver, British Columbia. "Insights from this study can also trigger further research on the drivers of the changes and inform strategies for [emergency care](#)."

Previous studies have assessed the impact of the pandemic on ED visits, but few have looked at the health reasons for these visits.

To understand the impact of the pandemic according to health visit type over the first three years of the pandemic, scientists looked at data from 30 emergency departments and more than 10.7 million visits across British Columbia from January 2016 to December 2022.

Using modeling, they estimated what usual patterns of ED visits would have been compared with actual visits during the pandemic. The smallest number of ED visits were in April and December 2020, reflecting the effects of the strong virus mitigation measures, and visits returned to pre-pandemic levels in May 2021.

After accounting for seasonal and annual trends in ED visits, the April and December dips saw a 42% and 19% reduction, respectively, compared to what would be expected in the absence of the pandemic. The largest reductions were for respiratory issues (35%), with a 48% drop in December 2020, which would normally have been peak season for respiratory illnesses. Visits for mental health concerns and substance misuse had the smallest reductions.

By age group, the largest reductions in visits were in children younger than 10 years, accounting for almost one-third of the decrease in visits.

"By looking at the [time window](#) that captured most of the pandemic period, we were able to tell a fuller story by showing not only the short-term impacts, but also longer-term impacts," says Dr. Kate Smolina, interim scientific director, BCCDC Data and Analytic Services and Knowledge Translation and senior author of the paper.

"It was particularly interesting to see those longer-term patterns for children's visits and visits related to respiratory and ears, nose, and throat symptoms, which, after returning to normal in 2021, went on to surpass the expected levels in 2022."

In summer 2021, there was a substantial increase in visits, possibly related to the extreme heat in June in British Columbia as well as opioid-related overdoses.

The authors hope that the data will be useful in helping manage health care resources. "There was a huge drop in volumes in the emergency department at the beginning of the pandemic, but we have ultimately returned to pre-[pandemic](#) growth of volumes," says Dr. Eric Grafstein, chief medical information officer and regional emergency department head at Vancouver Coastal Health and Providence Health Care. "This return toward normal emergency department volumes can help with future understanding of the impact of pandemics on health care needs."

"More studies on the drivers of these trends will not only aid in better planning of emergency department capacity for future public health emergencies, but can also inform strategies to help the public make decisions about seeking emergency care. The statistical modeling approach can be further developed into surveillance tools to monitor health care services use and plan for surge capacity," conclude the

authors.

In a related [editorial](#), Dr. Catherine Varner, deputy editor, *CMAJ*, and an emergency physician in Toronto, says until acute care capacity is increased, Canadian hospitals will continue to face severe emergency department overcrowding. With hospitals frequently exceeding 100% bed occupancy, she proposes several steps to help mitigate the burden on [emergency department](#) patients and staff.

These include implementing demand-driven overcapacity protocols when overcrowding is compromising care, extending hours for in-hospital consults and procedures, increasing access to urgent but nonemergency testing and other interventions, and ensuring safety of staff and patients by embedding security and mental health professionals trained in de-escalation in emergency departments.

More information: Changes in emergency department use in British Columbia, Canada, during the first 3 years of the COVID-19 pandemic, *Canadian Medical Association Journal* (2023). [DOI: 10.1503/cmaj.221516](#). www.cmaj.ca/lookup/doi/10.1503/cmaj.221516

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