

A study on behalf of the Canadian COVID-19
Emergency Department Registry Rapid Response
Network (CCEDRRN)



Treatments, Resource Utilization, and Outcomes of COVID-19 Patients Presenting to Emergency Departments Across Pandemic Waves: An Observational Study by the CCEDRRN

C.M. Hohl et al., *Can J Emerg Med* (2022)

- The COVID-19 pandemic has created a rapidly changing, dynamic practice environment for emergency physicians and hospitals.
- The characteristics of patients seen in emergency departments, their medical management, and health outcomes might change as infections spread and public health measures fluctuate.
- Scientific evidence for COVID-19 treatment has also changed quickly as randomized trials proved efficacy for some therapies and disproved others.

This study used CCEDRRN data to compare treatments, acute care utilization, and outcomes of COVID-19 patients presenting to emergency departments across the first two waves of the pandemic.

01

PATIENT DEMOGRAPHICS

Wave 1
March 1 to June 30, 2020

Wave 2
July 1 to Dec. 31, 2020

3,336
COVID-19
patients

VS

6,631
COVID-19
patients

02

RESULTS

FACT

In the second wave, patients were on average younger with fewer comorbidities and were less likely to come from long-term care facilities or to have had a travel-related exposure.

During the second wave:



Patients had **less severe disease** and were **more likely to be discharged from the ED** (61% vs 47%).



Physicians **used steroids more often** (28% vs 9.5%) and they **used unproven therapies less** (antimalarials: 0.3% vs 9%, antivirals: 1.5% vs 6.7%).



When admitted, patients spent **fewer days in hospital** (11.7 vs 15.6) and were **less likely to need critical care** (7.7% vs 12.7%) or **intubation** (3.7% vs 7%).



Crude mortality was lower (6.1% vs 8.5%; OR 0.69) though **this difference disappeared after adjusting for patient factors, disease severity, seven-day moving average incident COVID-19 cases** (OR 1.0).

03

CONCLUSIONS



Patient characteristics were different in the second wave of COVID-19 compared to the first, perhaps relating to changing infection spread patterns, changing public health measures, and testing criteria.



There was a rapid uptake of evidence-based therapies and a decline in the use of unproven therapies, indicating an accelerated timeline of knowledge translation of research evidence into clinical practice.



Acute care resource utilization, including admission to hospital and use of mechanical ventilation, decreased in the second wave without impacting mortality.

Hohl CM, Rosychuk RJ, Hau JP, et al., Treatments, Resource Utilization, and Outcomes of COVID-19 Patients Presenting to Emergency Departments Across Pandemic Waves: An Observational Study by the CCEDRRN. *Can J Emerg Med* (2022). <https://doi.org/10.1007/s43678-022-00275-3>