

Classifying hospitalized patients testing positive for SARS-CoV-2 as hospitalized primarily for COVID-19 versus with incidental SARS-CoV-2 infection

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Introduction

Not all patients hospitalized with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection develop coronavirus disease 2019 (COVID-19).

Objective

- Assess the proportion of patients hospitalized primarily for COVID-19 versus with incidental SARS-CoV-2 infection (i.e., admission status) during the Omicron wave using two classification mechanisms:
 - Case classification by multiple physicians (i.e., clinician decision)
 - Classification algorithm developed by the Center for Disease Control (CDC) ¹
- Compare resource utilization and outcomes by admission status and between classification mechanisms

Methods ²

Table 1. Consecutive patients screened at participating emergency departments in the Lower Mainland of British Columbia who were subsequently hospitalized testing positive for SARS-CoV-2.

Hospital Site	Screening Start Date	Screening End Date	Patients Screened	Patients Included
Vancouver General Hospital	19-Dec-2021	1-Apr-2022	21998	417
Lion's Gate Hospital	19-Dec-2021	1-Jun-2022	1029	133
St. Paul's Hospital	19-Dec-2021	1-May-2022	8665	273
Mt. St. Joseph Hospital	19-Dec-2021	31-May-2022	2740	73
Surrey Memorial Hospital	19-Dec-2021	21-Apr-2022	8073	755
Total			42505	1651

Results

Figure 1. Number of hospitalized SARS-CoV-2 positive patients with index admissions classified as primarily for COVID-19 versus with incidental SARS-CoV-2, by classification mechanism.

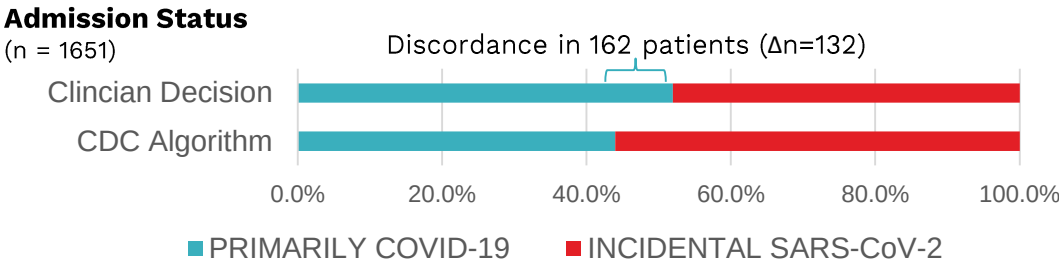


Table 2. Most common discharge diagnoses of 162 patients with discordance in admission status between classification mechanisms.

Primary Discharge Diagnosis	n (%)
Pneumonia	24 (14.8)
Failure to thrive	20 (12.4)
Altered level of consciousness	18 (11.1)
Fall	10 (6.2)
Hyponatremia	10 (6.2)
Kidney injury	10 (6.2)
Sepsis	8 (4.9)
Pulmonary embolism	6 (3.7)
Upper respiratory tract infection	6 (3.7)
Fever	5 (3.1)
Respiratory failure	5 (3.1)

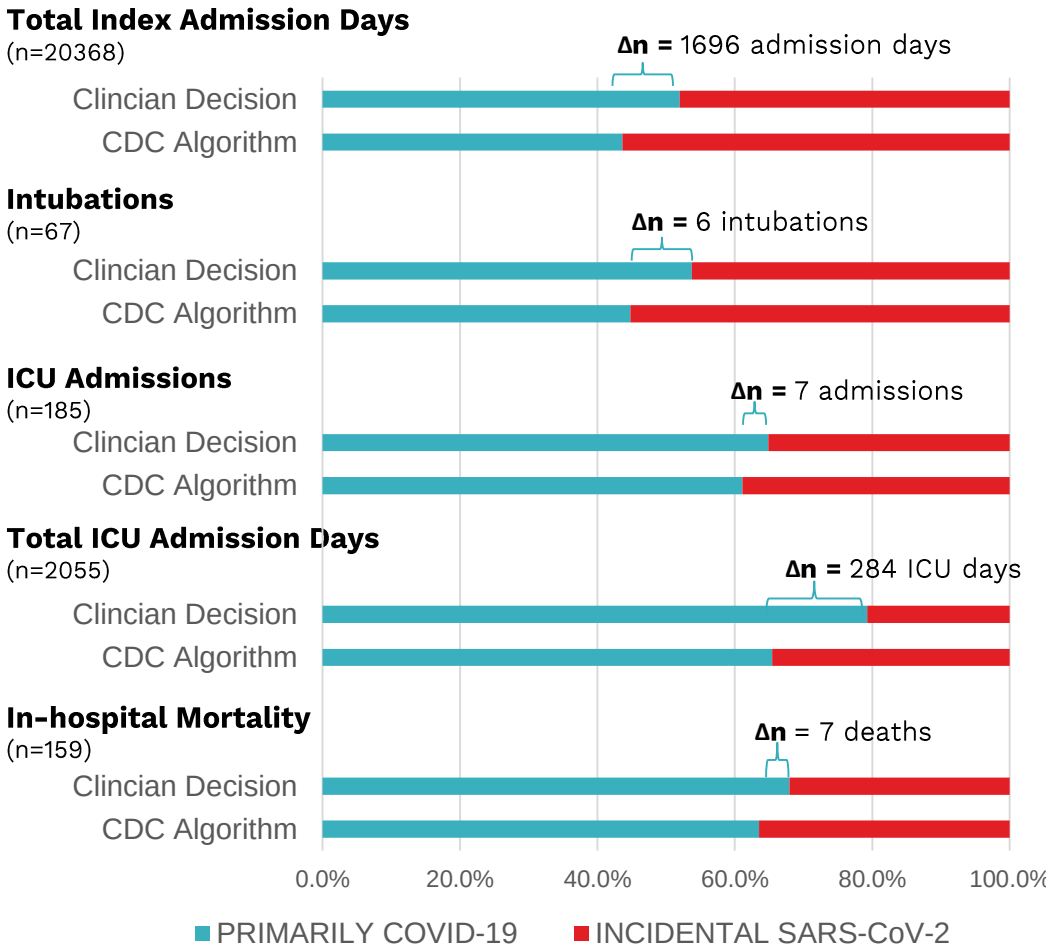
Conclusions

Half of Omicron SARS-CoV-2 hospitalizations were primarily for COVID-19 and associated with poor outcomes.

Discordance in classification occurred most in complex and resource intensive cases with less obvious COVID-19-related diagnoses

Compared to classification by clinical judgement, classification by CDC algorithm underestimated COVID-19-related resource utilization.

Figure 2. Resource utilization and outcomes of hospitalized SARS-CoV2 positive patients, by admission status and classification mechanism used to determine admission status.



References

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