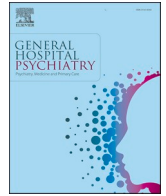




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## Letter to the editor

## COVID-19 pandemic inpatient bed allocation planning – A Canada-wide approach



## ARTICLE INFO

**Keywords**  
Psychiatry  
COVID-19  
Pandemic  
Inpatients  
Planning  
Canada

## ABSTRACT

**Objective:** A Canada-wide survey was disseminated to collect information regarding changes in processes related to providing care to patients on inpatient psychiatry units in response to the COVID-19 pandemic. Our aim was to share this information with those who have an interest in problem-solving these significant and unique challenges.

**Method:** The survey was distributed through the Association of Chairs of Psychiatry of Canada to Department Heads of Psychiatry at all sixteen medical schools. Information was collected via SurveyMonkey April 26–May 9, 2020. Eleven psychiatrists representing 11 different Canadian city/centre/zone(s) completed the survey.

**Results:** Information was collected about process changes: physical separation on the wards, symptom and vital signs screening, testing, isolation, rationales for number of beds allocated for COVID-positive, –suspect and –negative patients and for selecting a particular hospital to provide care to these different groupings of patients. One subsection of the information is presented in this letter. Further information is available upon request.

**Conclusion:** Similarities and differences existed between city/centre/zone(s) regarding approaches to providing care to patients on inpatient psychiatry wards. Significant preparation and consideration was put into determining necessary changes in response to this pandemic, and this is reflected in the information provided from each city/centre/zone.

The COVID-19 pandemic has catalyzed adaptations across health-care. Inpatient management poses unique challenges for psychiatric units, which are less equipped to manage infection control procedures than general medical units. Social interaction is an integral part of treatment as patients share living spaces, attend groups, and engage in off unit passes, providing further opportunity for disease transmission. Many patients may struggle with adhering to infection control procedures due to cognitive impairment associated with mental illness [1]. Reports from China and South Korea have demonstrated the dire consequences of COVID-19 outbreaks on inpatient mental health units with hospitals requiring closure, and several deaths [1].

Recent papers [2,3] have discussed guidelines for management of COVID-19 on inpatient units. Recommendations included isolating and observing patients for 14 days prior to being transferred to regular units, as well as designating units for COVID-positive patients only. However, there is a paucity of information regarding established processes for inpatient units to allocate beds for patients with varying screening COVID-19 statuses [4]. The number of inpatient mental health beds required is dependent on the number of COVID cases and prevalence of mental illness; a previous study from our group demonstrated substantial variation in prevalence of mental disorders across provinces in Canada [5].

To address these limitations, we developed a national survey that collected information regarding approaches to organizing patients on inpatient psychiatric units. The survey included questions on: allocation of inpatient beds for patients with varying COVID screening statuses and rationale for same, rationale for selecting particular hospital or site(s) for COVID-positive inpatients, organization on wards when patients

with multiple COVID-statuses share the same ward, screening processes for new admissions, and COVID statistics in the city/centre/zone at the time of the survey.

The survey was distributed through the Association of Chairs of Psychiatry of Canada to Department Heads of Psychiatry at all sixteen medical schools. Information was collected via SurveyMonkey between April 26 and May 9, 2020. Target audience included psychiatrists with knowledge about inpatient admission process changes and/or organization of physical inpatient space in response to the COVID-19 pandemic. Eleven psychiatrists representing 11 different Canadian city/centre/zone(s) completed the survey.

Table 1 summarizes COVID statistics and mental health bed allocation for COVID positive and suspect patients for each city/centre/zone. A limited amount of data were available from some sites (ie. Toronto). Despite high case counts, very few COVID+ patients were admitted to mental health beds. There was a wide range of approaches to bed allocation across cities, though the majority of cities elected to separate COVID positive and suspect patients.

According to qualitative feedback, practical and logistical considerations were incorporated in determining bed allocations, including availability of ward(s), ability to physically separate patients, availability of individual bathrooms, adequate physical space to provide patients with appropriate individual space on wards combining COVID-positive and COVID-suspect patients, and ability for staff to work on a COVID-positive ward independent from other wards.

The following considerations informed decision-making about which hospital(s) would provide mental health inpatient care exclusively to COVID-positive mental health patients within a city/centre/zone:

<https://doi.org/10.1016/j.genhospsych.2020.12.015>

Received 7 October 2020; Received in revised form 19 December 2020; Accepted 21 December 2020

Available online 26 December 2020

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**Table 1**  
 COVID-19 Statistics on Date of Survey Completion (April 26 – May 9, 2020) Based on City/Centre/Zone.

City/Centre/ Zone	Population <sup>a</sup>	COVID+ cases		# COVID+ patients admitted <sup>e</sup>		# MH beds allocated for exclusively COVID+ patients		# COVID SUSPECT patients admitted <sup>e</sup>	# MH beds allocated for exclusively COVID-suspect patients	
		Adult	Peds	Medical Units	MH Units	Adult (Total MH Beds)	Peds		MH Units	Adult
Calgary	1,498,778	2117 (all of Alberta)		1	1	NA (200)	NA	0	8	None
Edmonton	932,546	476		14	0	Adult: 20+ (268)	4	6	11	5
Ponoka (Central Zone)	461,553	90	15	NA	0	0–30 <sup>c</sup> (150)	6	5	8–35	8
Winnipeg	705,244	267 <sup>b</sup>	15	7	0	13 (220)	0	5	19	5
Whitby	128,377	0	0	0	0	6 (326)	*	0	12	12
Toronto	2,731,571	NA	NA	NA	NA	6 (220) <sup>d</sup>	NA	NA	NA	NA
St. John's	108,860	40	0	5	1	8 combined positive & suspect beds (153)	0	1	8 combined positive and suspect beds	0
Sherbrooke	161,323	835	83	50	0	9 (126)	NA	3	11	NA
Saskatoon	246,376	11 total <sup>f</sup>		3	0	6 (56)	0	Not applicable	All newly admitted patients are treated as COVID suspect	
Halifax	403,131	724	0	8	0	12 (200)	3	3	0	0

NA = Not available.

\* Whitby allocated a specific ward for managing COVID-positive pediatric mental health patients; it is unclear how many beds were available on this unit.

<sup>a</sup> Population data derived from Statistics Canada most recent census (2016).

<sup>b</sup> Manitoba active cases.

<sup>c</sup> Range of beds represents available capacity in the event they were required.

<sup>d</sup> This does not represent all Toronto mental health beds, but rather a segment of the Toronto area.

<sup>e</sup> Number of COVID+ or suspect patients admitted at the time of the survey.

<sup>f</sup> Breakdown by age unknown.

admission to hospitals with access to medical COVID unit(s) and specialists, ability to designate one unit solely to isolating patients upon admission, and physical capacity of a facility to open new units for COVID-positive patients.

Regarding wards for patients screened as COVID-suspect, presence of isolation rooms was an important consideration to allow for isolation of patients with droplet precautions until COVID is ruled out. In some city/centre/zone(s), all newly admitted patients were treated as COVID-suspect and isolated for the first 14 days of hospitalization. Only two of eleven programs were testing asymptomatic (or COVID-negative screened) patients at the time of survey. This is in contrast to more recent studies recommending universal testing of all patients pre-admission [3,6].

When combining COVID-positive and COVID-suspect patients on the same ward, sites considered the need for private rooms and bathrooms, and ability to divide the physical space of the ward (using a dividing wall). COVID-positive patients remained in their rooms and on droplet precautions.

As the COVID-19 pandemic continues, it is important to consider the unique challenges of inpatient psychiatric management in future resource planning. This survey provides a national perspective of approaches relatively early in the COVID surge. There are non-academic hospitals not included in the sample; however, the eleven respondents to the survey represent a significant portion of major academic centres in Canada. Future research should consolidate lessons learned into expert national consensus and best practices for subsequent waves.

**Funding**

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

**Declaration of Competing Interest**

The authors have no conflicts of interest to declare.

**Acknowledgements**

The authors would like to thank all psychiatrists who responded to the survey, as well as Kelsey Papineau for organizing the survey data.

**Appendix A. : Survey Questions**

1. How many sites will have COVID positive mental health units in your province?
  - a. Single textbox
2. Please list the sites of COVID positive mental health inpatient units.
  - a. Comment box
3. How did you determine which sites were being allocated as COVID positive mental health units in your province?
  - a. Comment box
4. Please provide the contact information for the Medical Director of the COVID positive mental health unit(s)
  - a. Contact information – please include the following in the question:
    - i. Name
    - ii. University
    - iii. Site
    - iv. City/Town
    - v. Province
    - vi. Email Address
    - vii. Phone number
5. How many COVID positive adult mental health beds are being allocated/planned for in your province?

- a. Single textbox
6. What was the rationale for the allocation of COVID positive inpatient beds?
  - a. Comment box
7. How many COVID suspect mental health beds are being planned?
  - a. Single textbox
8. What was the rationale for the allocation of COVID suspect inpatient beds?
  - a. Comment box
9. What is the process for new non-COVID admissions during the pandemic?
  - a. Comment box
10. Regarding new non-COVID admissions, is isolation being for the first few of days?
  - a. Multiple choice – please include the following in the question:
    - i. Yes
    - ii. No
11. Regarding new non-COVID admissions, are you implementing any additional precautions (Temperature BID and/or screen for ILI symptoms)?
  - a. Multiple choice – please include the following in the question:
    - i. Yes
    - ii. No
12. Regarding new non-COVID admissions, are these patients receiving COVID testing at time of admission?
  - a. Multiple choice – please include the following in the question:
    - i. Yes
    - ii. No
13. How many COVID positive cases are in your province today?
  - a. Single textbox
14. How many individuals have recovered from COVID-19 in your province as of today?
  - a. Single textbox
15. How many COVID positive patients are admitted to inpatient medical units as of today?
  - a. Single textbox

16. How many COVID positive patients are admitted to inpatient adult psychiatric units in your province as of today?
  - a. Single textbox
17. How many COVID suspect patients are admitted to inpatient adult psychiatric units in your province as of today?
  - a. Single textbox
18. What is the total number of adult psychiatric beds in your province as of today?
  - a. Single textbox

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