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Short communication

Inpatient psychiatry response to the SARS-CoV-2 Omicron variant surge

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ABSTRACT

The increased transmissibility of the omicron variant of the SARS-CoV-2 virus resulted in a rapid increase in infection among many psychiatric inpatients in our hospital between December 2021 and February 2022. This required our institution to close affected units to new admissions. In response, we implemented a model utilizing universal SARS-CoV-2 polymerase chain reaction (PCR) testing at the time of admission, the development of “admitting units” where all patients were quarantined for four days followed by repeat PCR testing, and subsequent transition to COVID-19 negative and COVID-19 positive “receiving units” based on the results of the second test. No unit closures occurred following full implementation of the model.

1. Introduction

Inpatient psychiatric units and hospitals faced unprecedented challenges during the initial surge of the COVID-19 pandemic in 2020. These challenges and the approaches used to address them have been well-described (Brody et al., 2020; Kanellopoulos et al., 2021; Li et al., 2021; Russ et al., 2021; Brody et al., 2021). The recent COVID-19 omicron variant surge, however, presented new challenges. Here, we describe a successful protocol designed to respond to SARS-CoV-2 variants with higher transmissibility than the wild type.

The omicron surge was fundamentally different from the previous experiences: the severity of illness was generally considered milder than previous variants, the omicron variant was significantly more contagious (Meo et al., 2021). The relative ease of transmission resulted in an increased rate of infection on our inpatient units necessitating closure of many units to new admissions. By comparison, 62% of our units experienced closures during the first six weeks of the omicron variant surge in December 2021-January 2022 while only 38% of our units closed during the delta variant surge in April-May 2020. The high transmissibility of the omicron variant required that we alter previously successful protocols (Brody et al., 2020; Russ et al., 2021, 2021) to maintain patient access to our hospital, a 230-bed free-standing psychiatric hospital in White Plains, New York. Our hospital is comprised of thirteen inpatient units, many of which provide specialty care, e.g., geriatrics, eating disorders, personality disorders, psychotic disorders, child and adolescent psychiatry.

2. Protocol modification for Omicron surge

Although we still maintained a COVID-positive Unit throughout the pandemic (maximum census 16), the number of patients with comorbid COVID-19 had dwindled to 0–2 patients beginning in June 2021. Since the start of our hospital’s pandemic response in 2020 and during the subsequent periods of low COVID-19 prevalence leading into December 2021, mainstays of our infection control protocol consisted of performing COVID-19 PCR testing for all patients just prior to admission, requiring universal surgical mask use among patients, repeating the PCR test on Day 4 of hospitalization, social distancing during patient meals, and periods of limiting visitation to depending on the community prevalence of COVID-19 cases (Russ et al., 2021). Patients were not room restricted during the first four days of hospitalization. Visitation was permitted with screening protocols during periods of lower community transmission. During the early weeks of December 2021, the Day 4 PCR testing revealed outbreaks on the majority of our units, eventually resulting in the closure of 8 of 13 units. The number of psychiatric patients with COVID-19 comorbidity increased, eventually filling the COVID-19 unit (16 beds) and overflowing to a second unit. During the first six weeks of the Omicron surge (December 1-January 12), the proportion of hospitalized patients impacted by these closures ranged between 14% and 37%. During this same six-week period, 46 patients were known to be infected with COVID-19 on admission, 4 patients who were negative on admission tested positive on Day 4, and 21 patients tested positive beyond Day 4 due to a presumed exposure in the hospital.

Given the prospect of having to close the hospital to admissions, we instituted a number of changes that incorporated successful practices

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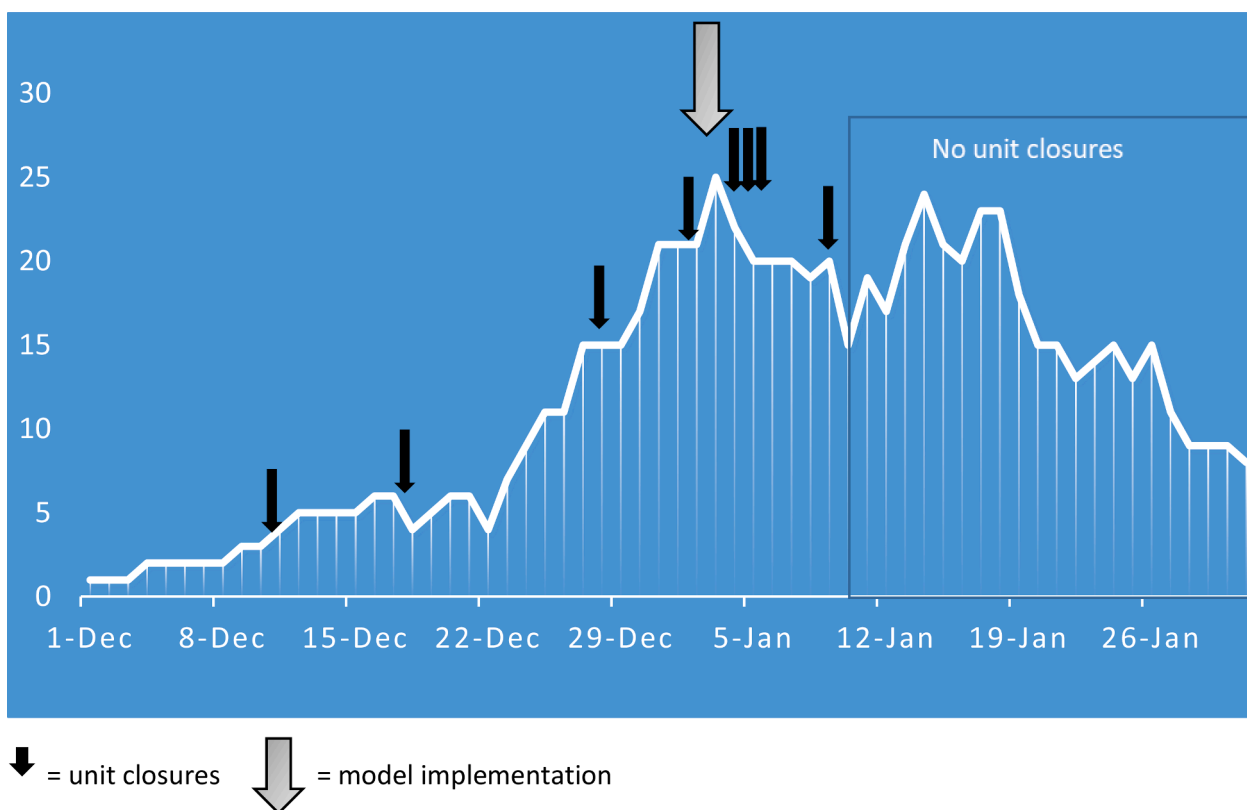


Fig. 1. COVID-19 hospital census and unit closures during the COVID-19 omicron surge.

adopted during initial waves while operating in an evolving environment of vaccination and increased testing. Instead of allowing patients free access to the unit during the first four days of hospitalization, in mid-December 2021, we restricted all newly admitted patients to their rooms until the Day 4 PCR result was obtained. Patients were asked to remain in a single room with digital tablet use for communication with staff and family, as well as for entertainment and clinical programming. The use of this technology had been established in the original COVID-19 surge in 2020 (Kanellopoulos et al., 2021). Maintaining effective levels of isolation on all 13 units proved to be unsuccessful: many patients were unable to comply with this regimen and we continued to experience outbreaks despite these precautions. Therefore, we shifted to a protocol with a smaller number of units focused on this isolation protocol.

On December 30, 2021, we designated two units as “admitting units” where all newly admitted patients who had tested COVID-19 negative on admission were triaged and placed in room-based isolation pending a second, Day 4 COVID-19 test result. Two units remained dedicated COVID-19-positive units, where patients with community acquired COVID-19 infections at the time of psychiatric admission were triaged. If a patient on an admitting unit tested positive on Day 4, they were transferred to one of the two COVID-19 positive units to complete their treatment. Alternatively, if a patient tested negative on Day 4, they were transferred to a “receiving unit.” This model was successful. No unit closures followed the implementation of the new triage protocol (Fig. 1). However, the new protocol negatively impacted the normal operations of the hospital, especially the clinical programs of the specialty units. Most specialty units had to abandon their normal clinical program and adopt more diverse patient populations in order to support the effort to keep the hospital operational.

3. Discussion

Adopting mandatory 2-stage SARS-CoV-2 PCR testing prior to

admission and again after a 4-day quarantine on dedicated “admitting” units stopped in-hospital outbreaks and subsequent unit closures during the omicron surge. Our experience suggests that the model described is effective in psychiatric hospitals with the capacity to establish units with discrete admitting and receiving functions, and thereby mitigate the risk of unit closures during a pandemic.

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Mark Russ developed the idea for the manuscript, gathered relevant data, and was the principal writer.

Lisa Sombrotto assisted in developing the idea for the manuscript and provided significant editorial support.

Benjamin Brody assisted in developing the idea for the manuscript and provided significant editorial support.

Declaration of Competing Interest

The authors have no competing/conflicts of interest.

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