HHS Public Access

Author manuscript

J Patient Saf. Author manuscript; available in PMC 2022 June 01.

COVID-19-related circumstances for hospital readmissions: a case series from two New York City hospitals

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Abstract

Objectives: To determine the main factors contributing to hospital readmissions and their potential preventability following a COVID-19 hospitalization at two New York City hospitals.

Methods: This was a retrospective study at two affiliated New York City hospitals located in the Upper East Side and Lower Manhattan neighborhoods. We performed case reviews using the Hospital Medicine Reengineering Network (HOMERuN) framework to determine potentially-preventable readmissions among patients hospitalized for COVID-19 between March 3, 2020 (date of first case) and April 27, 2020, and readmitted to either of the two hospitals within 30 days of discharge.

Results: Among 53 readmissions following hospitalization for COVID-19, 44 (83%) were deemed not preventable and 9 (17%) were potentially-preventable. Non-preventable readmissions were mostly due to disease progression or complications of COVID-19 (37/44, 84%). Main factors contributing to potentially-preventable readmissions were issues with initial disposition (5/9, 56%), premature discharge (3/9, 33%), and inappropriate readmission (1/9, 11%) for someone who likely did not require rehospitalization.

Conclusions: Most readmissions following a COVID-19 hospitalization were not preventable and a consequence of the natural progression of the disease, specifically worsening dyspnea or hypoxemia. Some readmissions were potentially-preventable, mostly due to issues with disposition that were directly related to challenges posed by the ongoing COVID-19 pandemic. Clinicians should be aware of challenges with disposition related to circumstances of the COVID-19 pandemic.

INTRODUCTION

Coronavirus disease 2019 (COVID-19) is the largest global pandemic in the past century with over 27 million cases in the United States.[1] The patient characteristics and hospital

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course of COVID-19 in New York City have been well described.[2–4] However, the post-hospital course of COVID-19 patients, specifically contributing factors for hospital readmissions, has not been well characterized. Hospital readmissions within 30 days after a hospital discharge are frequent and potentially harmful. Efforts to reduce readmission rates have drawn significant attention in health policy.[5] In a large observational study conducted by the Hospital Medicine Reengineering Network (HOMERuN), over 25% of hospital readmissions were found to be potentially-preventable.[6]

A better understanding of factors contributing to hospital readmissions in COVID-19—a novel disease with unique challenges—would provide clinicians, researchers, and policymakers valuable insight to inform clinical care. Therefore, we examined hospital readmissions among COVID-19 patients in two New York City hospitals to describe the characteristics of patients who had COVID-19 hospital readmissions at these two hospitals, identify contributing factors for readmissions, use the HOMERuN framework to judge preventability, and describe the reasons for potentially-preventable readmissions.

METHODS

Study population and setting

We included all patients hospitalized at New York-Presbyterian/Weill Cornell Medicine (NYP/WCM) and its affiliate Lower Manhattan Hospital (NYP/LMH) for COVID-19 between March 3, 2020 (date of first case) and April 27, 2020, who were readmitted to either of the two hospitals within 30 days of discharge. Eligible patients were identified using an institutional research data repository that contains a registry of all COVID-19 hospitalized patients. COVID-19 cases were confirmed with a positive nasopharyngeal swab reverse transcriptase-polymerase chain reaction assay.

NYP/WCM is a quaternary referral center and teaching hospital with 862 beds located on the Upper East Side of Manhattan with a yearly volume of 23,000 unique patient hospitalizations. NYP/LMH is a community hospital and non-teaching affiliate of NYP/WCM with 180 beds located in Lower Manhattan. Attending physicians across specialties including emergency medicine, hospital medicine, and critical care medicine practice at both locations.

Case review and outcome adjudication

We performed detailed case review to achieve the study objectives: (1) to describe the characteristics of patients who had COVID-19 hospital readmissions at these two hospitals, (2) to identify contributing factors for readmissions, and (3) to determine the preventability of hospital readmissions in COVID-19. We assigned two independent physician reviewers for each case.

Our case review process for identifying potential factors that contributed to readmissions followed the HOMERuN framework, which was adapted from previously published approaches for adjudication of preventability and identification of underlying causes for readmission.[6,7] A structured study instrument based on this framework included multiple-choice and open-ended response questions that guided reviewers to consider patients'

disease course, inpatient care, and discharge process (Supplementary Appendix). In the case review process, reviewers identified presenting symptoms, active clinical issues at the beginning of the index hospitalization, active issues (medical, psychiatric, cognitive, physical, and nutritional) in the days leading up to discharge, unresolved issues upon discharge, and events prompting rehospitalization.

We used the HOMERuN framework for assessing preventability on a 6-item ordinal scale without a neutral response to make a final determination of "preventable" or "non-preventable" by splitting the ordinal scale in the middle. When determining preventability, we instructed case reviewers to compare to an ideal health system under normal circumstances before the COVID-19 pandemic and assess system flaws and gaps in care that could have been avoided within reason. This framework followed previously published approaches considered standard in defining preventability for adverse drug events and care transition gaps.[6,8–15] Disagreements were reviewed independently by three co-authors (JJC, JHC, MFS). Final adjudication was determined by consensus reached through case discussions.

Data collection and analysis

Data collected from inpatient medical records by manual abstraction using a structured study instrument in REDCap[16] included the following domains: patient demographics, clinical characteristics, comorbidities, social support, functional status, diagnoses, treatments, disposition, and discharge processes. Sources of information included admission notes, progress notes, discharge summaries, social work notes, nursing notes, physical therapy notes, vital sign flowsheets, and diagnostic test results. We calculated mean and median with standard deviation (SD) and interquartile range (IQR), respectively, for continuous variables and number and percentage for categorical variables. Chi-square test was used for comparison of proportions. We performed all analyses using statistical software (RStudio, version 1.2). Our study received approval from the institutional review board at Weill Cornell Medicine.

RESULTS

Patient characteristics of readmitted patients

Among 1666 confirmed cases of COVID-19 patients hospitalized at two New York City hospitals from March 3, 2020 to April 27, 2020, 310 (19%) patients died during hospitalization, 1008 (61%) patients were discharged, and 348 (21%) remained hospitalized at the end of the study period. Of the 1008 discharged patients, 53 (5%) were readmitted to the same two hospitals within 30 days after discharge from the index hospitalization. The median age of readmitted patients was 71 years (IQR 57–82) with 45% (24/53) women, 38% (20/53) Hispanic, 36% (19/53) White, 21% (11/53) Asian, and 6% (3/53) Black (Table 1). Almost half (25/53, 47%) of readmitted patients had a preferred language that was not English, including 28% (15/53) Spanish, 13% (7/53) Mandarin, Cantonese, or other Chinese dialect, and 6% (3/53) other language. Thirty-four percent (18/53) of readmitted patients identified a health care proxy and 15% (8/53) identified a caregiver. The most common comorbidities were hypertension (28/53, 53%), diabetes mellitus (22/53, 42%), chronic

kidney disease (13/53, 25%), coronary artery disease (11/53, 21%), chronic lung disease (10/53, 19%), heart failure (10/53, 19%), and dementia (9/53, 17%).

Of 53 readmissions, we found 9 (17%) to be potentially-preventable and 44 (83%) to be non-preventable (Table 1). Patients with potentially-preventable readmissions were older (median age 79 vs. 68), more frequently non-White (7/9 or 78% vs. 27/44 or 61%), and less likely to have a health care proxy (1/9 or 11% vs. 17/44 or 39%) compared to patients determined to have non-preventable readmissions.

Characteristics of the index hospitalization

Among patients readmitted to our two hospitals, the median hospital length of stay during the index hospitalization was three days (IQR 2–6) (Table 2). Most patients (48/53, 90%) were admitted from home. The most common active clinical issues on admission were hypoxemia (19/53, 36%), acute kidney injury (14/53, 26%), elevated liver enzymes (14/53, 26%), and altered mental status (13/53, 25%). Fever was present in 13% (7/53) of patients less than 48 hours prior to discharge from the index hospitalization. Supplemental oxygen was discontinued less than 24 hours prior to discharge in 15% (8/53) of patients, while 13% (7/53) of patients were discharged on supplemental oxygen.

Most patients (33/53, 62%) did not require any assistive devices and half of patients did not require home care services after discharge. Home care services were either continued or arranged for 26% (14/53) of patients, and 13% (7/53) of patients were discharged to a skilled nursing or rehabilitation facility. In-person follow-up appointments were scheduled prior to discharge from the index hospitalization for 23% (12/53) of patients. Telehealth appointments were arranged for 11% (6/53) of patients. Most patients (35/53, 66%) were instructed to call their outpatient providers for follow-up care.

Characteristics of readmission course

The median time from discharge to readmission was four days (IQR 2–9) (Table 3). Patients with potentially-preventable readmissions had much shorter times to readmission compared to patients with non-preventable readmissions (median 1.0 vs. 4.5 days). Very few patients (2/53, 4%) were able to attend a follow-up office or telehealth visit prior to readmission. The most common reason for readmission was new or worsening hypoxemia (24/53, 45%). Other reasons for readmission included altered mental status (7/53, 13%), worsening dyspnea without hypoxemia (6/53, 11%), and new chest pain (3/53, 6%). During the rehospitalization course, 6% (3/53) of patients required mechanical ventilation, 91% (48/53) were discharged, and 9% (5/53) died.

Main factors contributing to readmissions

The main factors contributing to the 53 readmissions were disease progression or complication of COVID-19 (37/53, 70%), issues with initial disposition (8/53, 15%), premature discharge (3/53, 6%), onset of new disease (3/53, 6%), and inappropriate readmissions (2/53, 4%).

Non-preventable readmissions

Factors contributing to non-preventable readmissions were disease progression or a complication of COVID-19 (37/44, 84%), issues with disposition (3/44, 7%), onset of new disease (3/44, 7%), and inappropriate readmission (1/44, 2%) for someone who likely did not require rehospitalization. Disease progression or complication of COVID-19 contributed to the great majority of non-preventable readmissions. A representative case example of disease progression due to worsening hypoxemia is summarized here:

> **Case 1.** An older man with hypertension and diabetes mellitus presented with several days of fever, cough, and chest pain and tested positive for COVID-19. His oxygen saturation remained normal on ambient air both at rest and with exertion. A chest radiograph showed bilateral patchy infiltrates, prompting admission to general medicine for closer monitoring. He symptomatically improved and was discharged one day after admission to home without needs for home oxygen therapy or physical therapy. Three days after discharge, he developed dyspnea and presented back to the emergency department where he was found to have hypoxemia. He was initially admitted to the floors on low-flow nasal cannula; however, he developed worsening acute hypoxemic respiratory failure and required invasive mechanical ventilation on the fourth day of rehospitalization.

Six cases had evidence of borderline oxygenation upon initial discharge, defined as oxygen saturation <90% on ambient air or low-flow nasal cannula device in the 24–48 hours prior to discharge. In comparison, 45 of 579 (8%) discharged patients who were *not* readmitted during our study period had evidence of borderline oxygenation by the same criteria. The difference between readmitted and non-readmitted patients with borderline oxygenation upon initial discharge was not statistically significant (6/53, 11% vs. 45/579, 8%, p=0.36).

Three cases with issues relating to discharge disposition were considered non-preventable due to families initially refusing discharge to a skilled nursing or rehabilitation facility as recommended by physical therapists and social workers. All three patients returned to the hospital due to their families' inability to manage care at home. While these readmissions may have been *avoidable* if the patients were discharged directly to skilled nursing facilities, they were not preventable by the medical team, given the patient and family preferences for discharge to home.

Potentially-preventable readmissions

Factors contributing to potentially-preventable readmissions were issues with disposition (5/9, 56%), premature discharge (3/9, 33%), and inappropriate readmission (1/9, 11%) for someone who likely did not require rehospitalization.

Five potentially-preventable readmissions involved an issue with discharge disposition from the index hospitalization as the main factor for readmission. In one case illustrated here, both a home care worker and a family caregiver were affected by their own COVID-19 illness, which compromised their ability to care for the patient at home and therefore the patient would have benefitted from alternative home care services or discharge to a skilled nursing facility (with the assumption that the patient and family would have accepted it):

Case 2. An older man with dementia, hypertension, and chronic kidney disease was admitted with COVID-19 pneumonia complicated by acute kidney injury, hypernatremia, and delirium. He improved over the course of four days and was recommended for discharge to home with continuation of his home care services. However, his home care worker was unavailable due to illness from COVID-19, and a family caregiver was also recovering from COVID-19. The family decided to bring the patient home under their care; however, the patient was readmitted one day after discharge due to the inability of the family to care for the patient at home. The patient was admitted for placement to a skilled nursing facility and was transferred the following day.

The other four cases of disposition issues, in which the readmissions were judged to be potentially-preventable, were attributed to an inability to resume or establish home care services because patients were positive for COVID-19. These patients had insufficient support at home that led to their presentation back to the hospital. In one case, private aides were unwilling to visit the patient due to the COVID-19 pandemic.

We identified three cases of premature discharge from the index hospitalization. One patient was discharged with blood pressure readings up to 200/100 mmHg on the day of discharge, and two had ongoing, gastrointestinal symptoms on the day of discharge that were not well-controlled. All three returned to the hospital primarily for management of these unresolved issues.

DISCUSSION

Our analysis of hospital readmissions for COVID-19 patients at two New York City hospitals during the first eight weeks of the pandemic found that most readmissions were a consequence of the natural progression of the disease, specifically worsening dyspnea or hypoxemia, and were not preventable (83%). Seventeen percent of readmissions were potentially-preventable, mostly due to issues with disposition that were directly related to challenges posed by the ongoing COVID-19 pandemic. We found a lower proportion of potentially-preventable readmissions than the HOMERuN study which, using similar methodology, reported that 27% of readmissions on general medicine services were potentially-preventable.[6] This may suggest that COVID-19 disease progression and processes of care may be less modifiable through outpatient interventions and closer follow-up than non-COVID hospitalizations. Furthermore, policymakers, administrators, and quality and safety researchers should use caution when using readmissions as a metric for quality of care.[17]

The overall readmission rate (5%) in our study was similar to other recently published studies on COVID-19 readmissions. Single-center studies in the United States, Spain, Turkey, and South Korea have reported readmission rates of 4% to 9%.[18–22] A large, multicenter study of the Veterans Affairs (VA) health system reported a higher readmission rate of 20%.[23] However, the VA health system cares for a unique patient population that is predominantly male, a demographic that is at increased risk of death and intensive care compared to female populations worldwide.[24] In addition, this study included COVID-19

cases that were confirmed by testing outside the index hospitalization—during the 14 days preceding or the 7 days following the index hospitalization—raising the possibility of including readmissions that were not related to COVID-19.

Our study of readmitted patients demonstrated that disease progression and worsening oxygenation in some patients were a part of the natural history of illness in COVID-19 and were largely unavoidable. Remaining in the hospital for the earlier phase of the disease course when vital signs and oxygenation were stable might not have been feasible when the hospital was at capacity during the peak of the outbreak in New York City. Patients and families may also have preferred to be at home, where they could see family members. Physicians should be aware—and perhaps expect—that some patients who are discharged early in their course of illness may need to return. This might also suggest an increased need for the use of telemonitoring with home pulse oximetry or the availability of field hospitals to discharge high-risk patients—both strategies have been used during this pandemic.

We found that some readmitted patients were initially discharged with borderline oxygenation; however, the proportion of readmitted patients with unstable oxygenation did not differ significantly from the proportion among patients who were not readmitted. Time to worsening oxygenation status can follow a bimodal distribution, highlighting the importance of monitoring oxygenation both during hospitalization and post-discharge in COVID-19.[4,25] This is especially true early in the course of illness, as our study and others have shown a correlation between shorter hospital length of stay and higher readmission rates in patients with COVID-19.[26,27] However, not all patients with borderline oxygenation progress to respiratory failure, and oxygenation saturation alone should not dictate discharge decisions—one should always consider the clinical context.

COVID-19 presented issues with disposition and barriers to care that were not present prior to the pandemic. Home care services were difficult to establish or reinstate on the day of discharge due to isolation precautions or sick home care workers and private aides due to COVID-19. In addition, sick family caregivers also compromised the ability to care for dependent, older adults during the pandemic at home. Finally, it is possible that families refused placement in skilled nursing and rehabilitation facilities due to perceived risks of additional COVID-19 exposure and limited family visitation policies. COVID-19 also restricted family visitation in the hospital during the peak of the pandemic. In-person family assistance with communication, especially with older adults, might have improved safe discharge planning.

Our study did not directly compare readmitted patients with other discharged patients; however, previously published data of 393 hospitalized adults in March 2020 at the same two hospitals reveal interesting comparisons.[2] First, and perhaps not surprisingly, our population of readmitted patients were older and had a higher burden of co-morbid conditions including chronic lung disease, coronary artery disease, and diabetes mellitus, and heart failure. Second, the proportion of White versus non-White patients were similar between our readmitted patients and the hospitalized cohort. Third, initial presentation with hypoxemia occurred at similar rates; however, the need for invasive mechanical ventilation was far more prevalent in the overall hospitalized cohort (33%) while only one patient

among those who were readmitted required invasive mechanical ventilation during the index hospitalization, suggesting that patients who were readmitted were often hospitalized earlier in the disease course.

While our methods of adjudication borrow from the HOMERuN framework, there are important differences that deserve discussion. First, the full list of contributing factors from the HOMERuN framework were collapsed into distinct categories. For example, more specific contributing factors such as inability to access services at home, required additional or different home services that those services included in discharge plans, required additional help from family that was not available, and required community programs not included in discharge plans were combined under the overarching contributing factor of issues with disposition. Another key difference in our methods was that we did not survey patients, the inpatient providers caring for the patients, or their primary care physicians, all of which were done in the original HOMERuN study.

There are several limitations to our study. First, we only included patients readmitted to the same two New York City hospitals; thus, our sample is not representative of the true rehospitalization rate of all discharged patients. Similarly, issues regarding family and home care workers being ill with COVID-19 may be not be generalizable to other settings in which community transmission rate is low. Second, data were collected from review of the electronic health record. While our review found documentation to have sufficient detail, it is possible that hospital events or details of care processes were omitted. Surveying or interviewing patients and providers might have provided additional insight not available in the medical records. Third, critically ill COVID-19 patients with prolonged hospitalizations in the intensive care unit may not have been discharged by the end of study period for this paper. Thus, our study sample is not representative of all patients who needed mechanical ventilation during their index hospitalization. Finally, we acknowledge that judgment of clinical appropriateness is subjective by nature and consensus on adjudication of readmission factors and their preventability may vary among physicians.

CONCLUSION

In conclusion, we found that some readmissions were related to circumstances reflecting specific problems associated with the COVID-19 pandemic, such as the availability of home care services and patient caregivers, and willingness of patients and their families to be discharged to skilled nursing facilities. Most other hospital readmissions in COVID-19 were associated with disease progression and were judged to be not preventable by the patient care team. Physicians should be aware of the possibility that COVID-19 symptoms can progress or recur, and that new symptoms of COVID-19 can develop in the days or weeks following hospitalization. The medical team should assure careful follow-up and monitoring of symptoms and oxygenation, especially early in the disease course. Home telemonitoring programs with home pulse oximetry might mitigate risk in this unique disease. Future studies should expand on these issues and also identify specific risk factors for readmission that may inform physician judgment of patient readiness for discharge.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgments

We would like to acknowledge Mangala Rajan for her contributions to this work.

Conflicts of Interest and Source of Funding:

Dr. Choi reported receipt of consulting fees from Allergan and Roche Diagnostics for topics unrelated to this work. Dr. Safford has received research support from Amgen in a topic unrelated to this manuscript. All other authors have no conflicts of interest to disclose. This study was supported by grants KL2-TR-002385 (Choi) and UL1TR00047 from the National Institutes of Health/National Center for Advancing Translational Sciences.

Funding received:

National Institutes of Health (NIH)/National Center for Advancing Translational Sciences (NCATS)

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Table 1:

Baseline characteristics of readmitted patients with COVID-19

	No. (%)		
Characteristic	**Overall (N=53)**	**Potentially-preventable (N=9)**	**Non-preventable (N=44)**
Age, median (IQR), years	71 (57–82)	79 (64–85)	68 (57–81)
Female	24 (45)	4 (44)	20 (46)
Race			
White	19 (36)	2 (22)	17 (39)
Black	3 (6)	3 (20)	0 (0)
Asian	11 (21)	3 (33)	8 (18)
Hispanic	20 (38)	1 (11)	19 (43)
Preferred language			
English	28 (53)	4 (44)	24 (55)
Spanish	15 (28)	1 (11)	14 (32)
Chinese language[a]	7 (13)	3 (33)	4 (9)
Other[b]	3 (6)	1 (11)	2 (5)
Had health care proxy	18 (34)	1 (11)	17 (39)
Had identified caregiver	8 (15)	4 (44)	4 (9)
Comorbidities			
Cancer	2 (4)	0 (0)	2 (5)
Chronic kidney disease[c]	13 (25)	2 (22)	11 (25)
Chronic lung disease[d]	10 (19)	2 (22)	8 (18)
Coronary artery disease	11 (21)	4 (44)	7 (16)
Dementia	9 (17)	2 (22)	7 (16)
Diabetes mellitus	22 (42)	4 (44)	18 (41)
Heart failure	10 (19)	2 (22)	8 (18)
Hypertension	28 (53)	6 (67)	23 (52)
Stroke	7 (13)	3 (33)	4 (9)

Abbreviations: COVID-19, coronavirus disease 2019; IQR, interquartile range.

[a]Chinese language includes Cantonese, Mandarin, Fuzhounese, and Toisanese.

[b]Other language includes Greek, Russian, and Hebrew.

[c]Chronic kidney disease includes patients with baseline serum creatinine >2 mg/dL (N=6) and patients with end-stage renal disease (N=7).

[d]Chronic lung disease includes asthma and chronic obstructive pulmonary disease.

Table 2:

Characteristics of index hospitalization in readmitted patients with COVID-19

	No. (%)		
Characteristic	**Overall (N=53)**	**Potentially-preventable (N=9)**	**Non-preventable (N=44)**
Hospital length of stay, median (IQR), days	3 (2–6)	5 (3–7)	3 (2–6)
Location prior to admission			
Home	48 (90)	8 (89)	40 (91)
Skilled nursing facility	2 (4)	0 (0)	2 (5)
Homeless shelter	1 (2)	0 (0)	1 (2)
Other	3 (6)	1 (11)	2 (5)
Active clinical issues on admission			
Altered mental status	13 (25)	4 (44)	9 (20)
Acute kidney injury	14 (26)	2 (22)	12 (27)
Elevated liver enzymes	14 (26)	2 (22)	12 (27)
Hypoxemia	19 (36)	2 (22)	17 (39)
Hemodynamically instability	1 (2)	1 (11)	0 (0)
Required mechanical ventilation	1 (2)	0 (0)	1 (2)
Time from last fever to discharge[a]			
<24 hours	3 (6)	0 (0)	3 (7)
24–48 hours	4 (8)	1 (11)	3 (7)
Time from last supplemental oxygen use to discharge			
<24 hours	8 (15)	1 (11)	7 (16)
<48 hours	3 (6)	1 (11)	2 (5)
Discharged with oxygen	7 (13)	0 (0)	7 (16)
Functional needs on discharge			
None	33 (62)	3 (33)	30 (68)
Cane or walker	13 (25)	3 (33)	10 (23)
Wheelchair	6 (11)	3 (33)	3 (7)
Bedbound	1 (2)	0 (0)	1 (2)
Discharge location[b]			
Home without home care services	28 (53)	3 (33)	25 (57)
Home with home care services	14 (26)	3 (33)	11 (25)
Skilled nursing or rehabilitation facility	7 (13)	3 (33)	4 (9)
Homeless shelter	1 (2)	0	1 (2)
Hotel	1 (2)	0	1 (2)
Acute care hospital	1 (2)	0	1 (2)
Follow-up care arrangements			
Scheduled for patient	12 (23)	3 (33)	9 (20)
Call instructions provided	35 (66)	5 (56)	30 (68)

	No. (%)		
Characteristic	**Overall (N=53)**	**Potentially-preventable (N=9)**	**Non-preventable (N=44)**
Telehealth arranged	6 (11)	2 (22)	4 (9)

Abbreviations: COVID-19, coronavirus disease 2019; IQR, interquartile range.

[a] Fever was defined as ≥38.0° Celsius.

[b] One patient left against medical advice.

Table 3:

Characteristics of readmission course among patients with COVID-19

	No. (%)		
Characteristic	**Overall (N=53)**	**Potentially-preventable (N=9)**	**Non-preventable (N=44)**
Time from discharge to readmission, median (IQR), days	4 (2–9)	1 (1–2)	4.5 (3–9.5)
Patient had follow up office or telehealth visit following discharge and prior to readmission	2 (4)	1 (11)	1 (2)
Reason for readmission			
Altered mental status	7 (13.)	3 (33)	4 (9)
New or worsening hypoxemia	24 (45)	2 (22)	22 (50)
Worsening dyspnea	6 (11)	1 (11)	5 (11)
New chest pain	3 (6)	0 (0)	3 (7)
Other[a]	13 (25)	3 (33)	10 (23)
Required mechanical ventilation	3 (6)	2 (22)	1 (2)
Discharged	48 (91)	9 (100)	39 (89)
Died	5 (9)	0 (0)	5 (4)

Abbreviations: COVID-19, coronavirus disease 2019; IQR, interquartile range; NYC, New York City.

[a]Other chief concerns on readmission included anorexia (N=2), nausea and vomiting (N=2), fever (N=1), headache (N=1), worsening cough (N=1), dysphagia (N=1), orthostatic hypotension (N=1), acute kidney injury (N=1), inability to care for self at home (N=1), retroperitoneal bleeding in the setting of anticoagulation for presumed pulmonary embolism (N=1), skin and soft tissue infection (N=1).