Preventability of 30-Day Hospital Revisits Following Admission with COVID-19 at an Academic Medical Center

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Background: The coronavirus disease 2019 (COVID-19) pandemic may have affected the preventability of 30-day hospital revisits, including readmissions and emergency department (ED) visits without admission. This study was conducted to examine the preventability of 30-day revisits for patients admitted with COVID-19 in order to inform the design of interventions that may decrease preventable revisits in the future.

Methods: The study team retrospectively reviewed a cohort of adults admitted to an academic medical center with COVID-19 between March 21 and June 29, 2020, and discharged alive. Patients with a 30-day revisit following hospital discharge were identified. Two-physician review was used to determine revisit preventability, identify factors contributing to preventable revisits, assess potential preventive interventions, and establish the influence of pandemic-related conditions on the revisit.

Results: Seventy-six of 576 COVID-19 hospitalizations resulted in a 30-day revisit (13.2%), including 21 ED visits without admission (3.6%) and 55 readmissions (9.5%). Of these 76 revisits, 20 (26.3%) were potentially preventable. The most frequently identified factors contributing to preventable revisits were related to the choice of postdischarge location and to patient/caregiver understanding of the discharge medication regimen, each occurring in 25.0% of cases. The most frequently cited potentially preventive intervention was "improved self-management plan at discharge," occurring in 65.0% of cases. Five of the 20 preventable revisits (25.0%) had contributing factors that were thought to be directly related to the COVID-19 pandemic.

Conclusion: Although only approximately one quarter of 30-day hospital revisits following admission with COVID-19 were potentially preventable, these results highlight opportunities for improvement to reduce revisits going forward.

The coronavirus disease 2019 (COVID-19) pandemic has resulted in an unprecedented surge in health care resource utilization. This was particularly taxing on health care systems in the United States during the early stages of the pandemic in the spring of 2020. To accommodate the influx of patients with a novel infectious disease, health care systems needed to quickly and dramatically alter their workflows, staffing allocation, and use of space and equipment, while simultaneously managing significant concurrent logistical and financial challenges. It is likely that these changes affected the quality of care that patients received, though quantifying this effect has been challenging.[1]

Policy makers consider unplanned readmission rates to reflect the quality of care related to discharge planning, patient engagement, and care transitions.[2] Hospital readmission rates are therefore linked to Medicare reimbursements through the Hospital Readmissions Reduction Program.[2] However, readmission rates are an inherently limited measure of quality due to inadequate risk adjustment and other unmeasured confounders.[3–5] Indeed, prior studies, done before the pandemic, have demonstrated that only

about one quarter of readmissions are actually preventable.[6] Thus, to use readmission data to understand and improve care processes, individual cases must be reviewed to determine their degree of preventability and to identify common root causes that may lead to readmission.

Although numerous studies have evaluated risk factors for readmission following hospitalization for COVID-19, few have systematically evaluated revisit preventability.[7–14] An understanding of the factors contributing to preventable revisits specifically would allow for more targeted development and deployment of interventions that may help decrease future revisits. In this study, we employ the prior methodology developed by members of the Hospital Medicine Reengineering Network (HOMERuN) to evaluate the preventability of hospital revisits occurring within 30 days of hospital discharge of patients with COVID-19, including hospital readmissions and visits to the emergency department (ED) without admission.[6] We aimed to assess the incidence of 30-day revisits for patients initially hospitalized with COVID-19, to determine the preventability of the revisits, and to identify common contributing factors and potentially preventive interventions in order to focus quality improvement efforts at our institution and inform similar efforts elsewhere.

METHODS

Study Population and Data Source

We used a retrospective cohort design to study adults aged 18 years and older who had an index admission with COVID-19 between March 21 and June 29, 2020, at our 673-bed academic medical center in Boston and were discharged alive. The index admission was defined by an initial positive severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) molecular assay during or up to 14 days prior to the admission. Patients hospitalized under *observation* or *inpatient* status were included as admissions. We excluded hospitalizations resulting in discharge to inpatient hospice, those in which the patient left the hospital against medical advice, or cases in which key clinical data were unavailable.

Demographic and clinical data were abstracted from electronic medical record review. Comorbidity data were derived based on ICD-10-CM discharge diagnosis codes from the index admission using the Healthcare Cost and Utilization Project Elixhauser comorbidity software.[15] An Elixhauser comorbidity readmission index score was derived for each index admission by applying weights to comorbidities as described by Moore et al.[16] Revisit diagnoses were determined by manual review of the medical record, including provider notes and primary clinical data, and were classified by organ system.

Revisit Definition and Preventability Determination

A 30-day revisit was defined as either a readmission or an ED visit without admission within 30 days of discharge from the index admission. Only the first revisit in the 30-day period was included. Planned/elective readmissions were excluded, including those for elective procedures, chemotherapy, or induction of labor. Only revisits to our medical center were included in this analysis, as revisits to outside facilities were not available for review.

To determine revisit preventability, we used a systematic approach developed by HOMERuN.[6] Charts were manually reviewed simultaneously by two physicians with expertise in hospital medicine and/or infectious diseases [D.T., E.A.M., A.K, S.J.H.] who assigned a preventability score on a six-point ordinal scale, with higher scores reflecting increased likelihood of perceived preventability. To derive this score, reviewers were asked to determine to what degree the discharge and follow-up plan differed from a hypothetical ideal plan in a well-functioning health care system during nonpandemic conditions. Examples of ideal care transitions are detailed in Burke et al.[17] If the two reviewers could not agree on a preventability score, a third physician was asked to adjudicate. For comparisons between preventable and nonpreventable revisits, we used a preventability score of 4 or more to define a preventable revisit.

Determination of Contributing Factors and Potentially Preventive Interventions

For each revisit, reviewers identified contributing factors chosen from a set of 38 potential contributing factors (Appendix 1, available in online article) that were identified and categorized using the framework of the Ideal Transitions in Care, as operationalized in prior work.[6,17,18] For each contributing factor identified, reviewers indicated whether that factor was clearly precipitated by circumstances directly related to the pandemic's effect on the health care system. A hypothetical example of this would be if a physical therapist believed that a patient would benefit from subacute rehabilitation, but the patient was instead discharged home due to lack of availability of subacute rehabilitation beds for patients whose SARS-CoV-2 test remained persistently positive.

Next, for each preventable revisit, the 11 potential preventive interventions developed by HOMERuN were evaluated by two-physician review.[19] Reviewers were asked to assess the anticipated effectiveness of each intervention by assigning it a score of 1 to 6, where 1 represented no probability of preventing the revisit, and 6 represented nearly certain probability of preventing the revisit. For the analysis, scores for each intervention were dichotomized into "no probability" (score of 1) and "potentially preventive" (score of 2–6).

Statistical Analysis

We compared demographic and clinical characteristics of index hospitalizations that resulted in a 30-day revisit to those that did not result in a 30-day revisit, as well as between preventable and nonpreventable revisits. We used the Fisher's exact test to compare dichotomous variables, the chi-square test for multicategory variables, and the Wilcoxon rank sum test for continuous variables, as not all data were normally distributed. For all analyses, statistical significance was set at $p < 0.05$. JMP Pro 15.0 was used for statistical analysis (SAS Institute Inc., Cary, North Carolina).

IRB Approval

Our institution's Committee on Clinical Investigations determined that the protocol met the criteria for exempt status.

Results

During the study period, 594 patients with an index COVID-19 admission were discharged alive from the medical center, 576 (97.0%) of whom met all inclusion criteria for the study. Patients were excluded for the following reasons: discharge to inpatient hospice (15), left the hospital against medical advice (2), and unavailable key clinical data (1). Of the 576 patients, 76 (13.2%) had an unplanned hospital revisit within 30 days of discharge, including 21

Table 1. Characteristics of Index Admission in Patients With and Without 30-Day Revisits

Characteristic	Overall (n = 576)	30-day revisit (n = 76)	No 30-day revisit (n = 500)	p value
Female sex, n (%)	293 (50.9)	42 (55.3)	251 (50.2)	0.46
Age in years, median (IQR)	63 (50–74)	66 (54–78)	62 (49–74)	0.12
Length of stay in days, median (IQR)	8 (4–15)	8 (3–15)	8 (4–16)	0.71
ICU admission, n (%)	217 (37.7)	28 (36.8)	189 (37.8)	0.90
Limited English proficiency, n (%)	144 (25.0)	17 (22.4)	127 (25.4)	0.67
Discharge location, n (%)				0.03
Extended care facility	250 (43.4)	31 (40.8)	219 (43.8)	
Home	209 (36.3)	21 (27.6)	189 (37.6)	
Home with services	117 (20.3)	24 (31.6)	93 (18.6)	
Race/ethnicity,* n (%)				0.36
Black	170 (32.6)	21 (28.4)	149 (33.3)	
Hispanic/Latino	102 (19.6)	14 (18.9)	88 (19.7)	
White, non-Hispanic	203 (39.0)	35 (47.3)	168 (37.6)	
Other	46 (8.8)	4 (5.4)	42 (9.4)	
Comorbidities,† n (%)				
Congestive heart failure	92 (16.3)	14 (18.7)	78 (16.0)	0.61
Chronic lung disease	124 (22.0)	24 (32.0)	100 (20.4)	0.04
Diabetes	216 (38.3)	29 (38.7)	187 (38.2)	1.00
Liver disease	48 (8.5)	8 (10.7)	40 (8.2)	0.50
Malignancy	35 (6.2)	1 (1.3)	34 (7.0)	0.07
Obesity	129 (22.9)	15 (20.0)	114 (23.3)	0.66
Alcohol and/or substance use disorders	26 (4.6)	3 (4.0)	23 (4.7)	1.00
Hypertension	307 (54.4)	40 (53.3)	267 (54.6)	0.90
Elixhauser comorbidity readmission index score,† median (IQR)	20 (8–33)	23 (13–33)	19 (8–33)	0.05

* Race/ethnicity data were unavailable for 55 patients (2 in the 30-day revisit group and 53 in the no 30-day revisit group).

† Comorbidity data were unavailable for 12 patients (1 in the 30-day revisit group and 11 in the no 30-day revisit group). "Uncomplicated diabetes" and "diabetes with chronic complications" were combined. "Lymphoma," "solid tumor without metastasis," and "metastatic cancer" were combined into the diagnosis "malignancy."

IQR, interquartile range.

ED visits without admission (3.6%) and 55 readmissions (9.5%). The median number of days to revisit was 8 (interquartile range 3–18). Of the 55 patients who had a readmission, 5 (9.1%) died in the hospital or were discharged to inpatient hospice, and 5 (9.1%) were readmitted twice in the 30-day period.

Characteristics of the index admissions for patients with and without 30-day revisits are shown in Table 1. There was a statistically significant difference in discharge location between the groups, driven by a higher proportion of "home with services" discharges in the 30-day revisit group (31.6% vs. 18.6%, p = 0.03). Patients with revisits also had a greater prevalence of chronic lung disease (31.6% vs. 20.0%, p = 0.04). Among patients with 30-day revisits, the most common diagnosis at revisit was worsening or persistent COVID-19 (11.8%), followed by bacterial pneumonia (7.9%), and urinary tract infection (6.6%) (Appendix 2, available in online article).

Of the 76 revisits, 20 (26.3%) were classified as preventable (preventability score of 4 or more) (Table 2), which consisted of 6 ED visits without admission and 14 readmis-

sions. There were no statistically significant differences in the characteristics of the index admissions for preventable vs. nonpreventable revisits (Table 3). None of the patients with preventable revisits died or were discharged to inpatient hospice during their readmission. Two patients with preventable revisits (10.0%) were readmitted twice in the 30-day period following their index admission.

The most commonly cited contributing factors for preventable revisits were "inappropriate choice of discharge location (for example, skilled nursing facility vs. home)" and "patient/caregiver misunderstanding of the discharge medication regimen," each implicated in 25.0% of preventable revisits (Table 4). Of the 20 patients with preventable revisits, 5 (25.0%) had at least one contributing factor that was determined to be directly related to the COVID-19 pandemic and would have been unlikely to have otherwise occurred.

The most frequently cited potentially preventive intervention was "improved self-management plan at discharge," which may have prevented the revisit in 65.0% of cases (Table 5). This intervention strategy focuses on ef-

Table 2. Preventability Scores for 30-Day Hospital Revisits

Preventability scores for 30-day revisits (n = 76)	n (%)
1. No evidence for preventability	31 (40.8)
2. Slight evidence for preventability	19 (25.0)
3. Preventability less than 50/50 but close call	6 (7.9)
4. Preventability more than 50/50 but close call	11 (14.5)
5. Strong evidence for preventability	7 (9.2)
6. Virtually certain evidence for preventability	2 (2.6)

Table 3. Characteristics of the Index Admission in Patients with Preventable and Nonpreventable Revisits

Characteristic	Preventable (n = 20)	Nonpreventable (n = 56)	p value
Revisit type, n (%)			
ED revisit	6 (30.0)	15 (26.8)	
Readmitted	14 (70.0)	41 (73.2)	
Female sex, n (%)	12 (60.0)	30 (53.6)	0.79
Age in years, median (IQR)	66 (54–80)	67 (54–78)	0.81
Length of stay in days, median (IQR)	6 (3–15)	8 (3–14)	0.96
ICU admission, n (%)	8 (40.0)	20 (35.7)	0.79
Days to revisit, median (IQR)	6 (2–13)	9 (3–19)	0.10
Limited English proficiency, n (%)	5 (25.0)	12 (21.4)	0.76
Discharge location			0.31
Extended care facility	7 (35.0)	24 (42.9)	
Home	4 (20.0)	17 (30.4)	
Home with services	9 (45.0)	15 (26.8)	
Race/ethnicity,* n (%)			0.26
Black	8 (42.1)	13 (23.6)	
Hispanic/Latino	2 (10.5)	12 (21.8)	
White, non-Hispanic	9 (47.4)	26 (47.2)	
Other	0 (0)	4 (7.3)	
Comorbidities,[†] n (%)			
Congestive heart failure	3 (15.0)	11 (20.0)	0.75
Chronic lung disease	4 (20.0)	20 (36.4)	0.26
Diabetes	9 (45.0)	20 (36.4)	0.59
Liver disease	3 (15.0)	5 (9.1)	0.43
Malignancy	0 (0)	1 (1.8)	1.00
Obesity	2 (10.0)	13 (23.6)	0.33
Alcohol and/or substance use disorders	1 (5.0)	2 (3.6)	1.00
Hypertension	10 (50.0)	30 (54.5)	0.80
Elixhauser comorbidity readmission index score,[†] median (IQR)	29 (16–31)	21 (11–38)	0.51
Fever 24 hours prior to discharge	3 (15.0)	3 (5.5)	0.18
Supplemental oxygen 24 hours prior to discharge	4 (20.0)	11 (20.0)	1.00
Discharge on supplemental oxygen	1 (5.0)	7 (12.7)	0.67
Follow-up arranged within 7 days from discharge[‡]	9 (69.2)	17 (53.1)	0.51

* Race/ethnicity data were not available for two patients (one in each group).
[†] Comorbidity data were not available for one patient in the nonpreventable group.
[‡] Follow-up arrangement was determined only for the patients discharged to home (with or without services).
  ED, emergency department;
IQR, interquartile range.

forts by the multidisciplinary care team to ensure that the patient and caregiver understand and have the ability to follow through with the discharge plan. The second most frequency cited intervention was "improved clarity, timeliness, or availability of information provided at discharge," which may have prevented the revisit in 45.0% of cases. This intervention focuses on timely and accurate communication with postdischarge providers, including the primary care provider and the medical team at postdischarge facili-

ties. The third most cited intervention was "more complete communication of information" in 35.0% of cases. This focuses on the quality and completeness of the discharge documentation, including the discharge summary and postdischarge patient instructions.

Discussion

In this retrospective analysis of patients with COVID-19 discharged from an academic medical center in the first

Table 4. Factors Contributing to Preventable Revisits, Directly and Not Directly Related to the COVID-19 Pandemic

Contributing factors	n, not directly pandemic related	n, directly pandemic related	n, total (% of cases, N = 20)*
Discharge planning			
Inappropriate choice of discharge location (for example, skilled nursing facility vs. home)	4	1	5 (25.0)
Patient discharged too soon from index hospitalization	2	1	3 (15.0)
Follow-up appointments not scheduled prior to discharge	2	0	2 (10.0)
Inappropriately long time between discharge and first follow-up with outpatient provider(s)	1	0	1 (5.0)
Medication safety			
Patient/caregiver misunderstanding of the discharge medication regimens	5	0	5 (25.0)
Errors in discharge orders	2	0	2 (10.0)
Patient/caregiver inability to manage medications at home/inadequate drug level monitoring	1	0	1 (5.0)
Diagnostic or therapeutic problems			
Discharge without needed procedure	1	2	3 (15.0)
Inadequate treatment of medical conditions during the index admission (other than pain)	2	1	3 (15.0)
Missed diagnosis during the index admission	1	0	1 (5.0)
Educating patients and promoting self-management			
Patient lacked awareness of whom to contact, when to go (or not to go) to the ED	2	0	2 (10.0)
Patient or family had difficulty managing other self-care activities at home	2	0	2 (10.0)
Patient lacked awareness of follow-up appointments or other postdischarge plans	1	0	1 (5.0)
Patient/family had difficulty managing symptoms at home	1	0	1 (5.0)
Enlisting help of social and community supports			
Patient required additional or different home services than those included in discharge plans	2	0	2 (10.0)
Patient was not able to access services at home (or turned them down after plans were made)	0	1	1 (5.0)
Patient required additional help from patient's family, caregivers, friends that was not available or sufficient	1	0	1 (5.0)
Other			
Team did not relay important information to the primary care provider or other outpatient providers	2	0	2 (10.0)
Patient inappropriately sent from subacute facility to ED	1	0	1 (5.0)
Lack of disease monitoring (for example, following daily weights)	1	0	1 (5.0)

* Cases could have more than one contributing factor, so percentages total more than 100.
ED, emergency department.

three months of the pandemic, we found that 13.2% had a hospital revisit within 30 days of hospital discharge, of which 26.3% (3.5% overall) were determined to be likely preventable. Of the 20 preventable revisits, 5 (25.0%) were believed to be due to circumstances directly attributable to the pandemic.

The proportion of 30-day revisits that were preventable in our study (26.3%) is comparable to the proportion of preventable 30-day readmissions in the HOMERuN study (26.9%), a 2016 analysis of 1,000 general medicine discharges from 12 US academic medical centers,[6] along with other prior research.[20] The lack of deviation from the findings of these prepandemic studies may be reflective of our health care system's ability to quickly adapt to changes brought forth by the pandemic. Despite the low overall rate

of preventable readmissions, our in-depth analysis of each individual revisit elucidated some key lessons that may be valuable going forward, particularly during times of strain on the health care system.

The major contributing factors implicated in this study have been well described outside of the pandemic,[6] but several factors were directly influenced by pandemic-related conditions. Problems related to discharge planning (timing and location) and difficulty obtaining adequate home support occurred in three revisits directly attributable to the pandemic. Discharge planning requires multidisciplinary decision making with regard to illness trajectory, functional status, the patient's care goals, and resource availability.[21] Conditions related to the pandemic likely added to this complexity. For example, in some situations, the infec-

Table 5. Interventions That May Have Prevented Hospital Revisits

Possible interventions	Mean score*	Potentially preventive interventions[†]		
		n, not pandemic related	n, pandemic related	n, total (% cases, N = 20)[‡]
Improved self-management plan at discharge (for example, discharge coach, discharge information in the patient's own language, increased engagement of patient/caregiver to ensure understanding of the discharge plan)	3.5	10	3	13 (65.0)
Improved clarity, timeliness. or availability of information provided at discharge (for example, timely communication with postdischarge providers)	2.2	7	2	9 (45.0)
More complete communication of information (for example, improved discharge documentation)	2.2	5	2	7 (35.0)
Improved physician or care team recognition of or attention to patient symptoms (such as pain, dyspnea, depression, anxiety)	1.8	4	2	6 (30.0)
Improved coordination between inpatient and outpatient providers (for example, with primary care office, shared medical records, communication that includes all team members, provider continuity)	1.9	4	2	6 (30.0)
Improved discharge planning (for example, faster follow-up with ambulatory providers, appointments made at times patient could attend)	1.9	4	2	6 (30.0)
Improved attention to medication safety (for example, medication list with pictures, filling prescriptions prior to discharge or having them delivered to home, improved medication reconciliation)	2.1	4	1	5 (25.0)
Provision of resources to manage care and symptoms after discharge (for example, follow-up phone call, nurse home visit, intensive disease management system, postdischarge ongoing case management, access to index hospital team for questions/concerns after discharge)	1.8	4	1	5 (25.0)
Greater engagement of home and community supports (for example, nonclinical social support assistance such as adult day care, meals on wheels)	1.4	2	0	2 (10.0)
Financial, insurance, or transportation assistance	1	0	0	0 (0)
Improved advance care planning (for example, establishment of health care proxy, discussion of goals of care, palliative care consultation, hospice services)	1	0	0	0 (0)

* For each preventable revisit, each intervention was evaluated and a score of 1 to 6 was assigned, where "1" represented no probability of preventing the revisit, and "6" represented nearly certain probability of preventing the revisit.

[†] An intervention was considered potentially preventive if it received a score of 2–6. It was considered "pandemic-related" if it was associated with a revisit with contributing factors directly related to the pandemic.

[‡] Cases could have more than one intervention, so percentages total more than 100.

tion control policies of postdischarge facilities and home care services resulted in restricted access to patients with COVID-19. In addition, isolation requirements may have led to inadequate assessment of patients' functional status prior to discharge.

Two additional pandemic-attributable revisits occurred because patients were discharged without a needed procedure. In these cases, the decision not to perform the procedure was influenced by a desire to decrease the exposure of health care workers to SARS-CoV-2. Unfortunately, in these cases, the need for a revisit may have resulted in exposure to more health care workers than would have occurred had the procedure not been deferred.

In 65.0% of the preventable revisits in our study, the reviewers believed that an intervention that focused on im-

provement in the self-management plan at discharge may have helped prevent the revisit. Self-management planning involves educating patients and caregivers about medication changes, follow-up appointments, and symptom management.[18] Moreover, it involves shared decision making about whether the self-management plan is feasible, or whether functional or cognitive limitations necessitate additional home services or discharge to a skilled nursing facility. Improvement in self-management planning has been identified as an important intervention in prepandemic studies.[19] In our study, it was thought to be helpful for preventing revisits both related and unrelated to the pandemic.

At our institution, we used the contributing factors and interventions identified in this study to guide the development of a hospitalwide interdisciplinary guideline for dis-

charging patients with COVID-19. This guideline provides strategies to improve self-management planning in the context of pandemic-related challenges, such as the inability of caregivers to communicate with the patient and care teams in person. For example, the guideline encourages the use of videoconference calls between the care team, the patient, and the patient's caregivers to help provide education surrounding the discharge plan. Discharge planning through videoconferencing has been effectively used to identify care transition errors in other studies.[22] The use of video ensures that the caregiver can visualize and raise concerns about the patient's current functional status, which may have deteriorated relative to their preadmission baseline and may limit their ability to manage their conditions at home. The guideline also outlines a standardized workflow for discharge medication prescribing, education, and bedside delivery. Finally, the document offers a checklist of topics that should be addressed on interdisciplinary rounds to ensure that the patient has adequate access to resources if they need to continue self-isolation. The uptake and effectiveness of this guideline will require further study.

The results of our study also highlight the need for attention to chronic disease management during hospitalization and after discharge for patients with COVID-19. Exacerbations of chronic illnesses such as congestive heart failure, renal disease, diabetes, and cirrhosis were common diagnoses at revisit. Conversely, worsening respiratory symptoms due to COVID-19 represented only 11.8% of readmission diagnoses (Appendix 2). This contrasts with the results of a review of COVID-19 patients admitted to two hospitals in New York City in March–April 2020, in which 56.6% of readmissions were due to dyspnea or hypoxia from COVID-19.[14] This may be related to differences in the index admission length of stay, which was three days in the New York City cohort vs. eight days in our study, when the acute phase of COVID-19 is more likely to have resolved. Despite this discrepancy, the proportion of preventable readmissions in both studies were similar (17.0% vs. 25.0%). This underscores the need to individualize strategies for revisit prevention based on factors specific to each institution's patient population. At our institution, we educated providers on the importance of providing patients with symptom monitoring strategies and timely follow-up appointments to avoid acute decompensation of chronic conditions.

Limitations

This study had several limitations. First, it was performed at a single academic medical center, which may limit its generalizability. Second, we were unable to determine whether patients were readmitted to other hospitals or died during the follow-up period, so our revisit rate may underestimate the true 30-day revisit rate. Third, because SARS-CoV-2 polymerase chain reaction (PCR) positivity was used for inclusion in the cohort, we were unable to exclude patients with an admission diagnosis unrelated to COVID-19 if they had an initial positive asymptomatic SARS-CoV-2 PCR screening test. Fourth, determination of revisit preventability is an inherently subjective process and may be influenced by the biases of each reviewer. We attempted to mitigate this by using a previously published standardized methodology.[6] An evaluation of inter-rater reliability was not performed but should be considered in future analyses. Fifth, reliance solely on retrospective chart review may limit the accuracy of preventability determinations if key information was not documented in the medical record. Finally, the number of patients with preventable revisits was low, which limited the ability to detect differences in index admission characteristics between the preventable and nonpreventable groups.

CONCLUSION

This study suggests that although most revisits of patients admitted with COVID-19 during the study period were not preventable, there were several key opportunities for improvement. These findings have led to the development of interventions designed to reduce hospital revisits for patients with COVID-19 at our institution. These lessons could also be applied to help prevent revisits in the future, in both pandemic and nonpandemic conditions. Other institutions should consider performing in-depth analyses of revisit preventability to inform local revisit reduction strategies.

Conflicts of Interest. All authors report no conflicts of interest.

SUPPLEMENTARY MATERIALS

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.jcjq.2021.08.011.

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