

Early Follow-Up Phone Calls to Reduce 30-Day Readmissions For Stroke Patients Discharged to Home

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INTRODUCTION

Patients admitted to the acute stroke unit with minor neurologic deficits are frequently discharged directly to home rather than to a rehabilitation center. Data from our tertiary care comprehensive stroke center has shown that in a 7-month period, 37% of patients admitted to the stroke unit were discharged home versus discharged to rehab or other location. Our average 30-day readmission rate for home discharges is 5.14%. More than 30% of these readmitted patients had been discharged on a Thursday or Friday on their index admission. When discharged home, patients typically are tasked with several responsibilities including but not limited to medication management, organizing follow-up appointments, monitoring blood pressure, and coordinating home services. In addition to recovering mentally and physically from stroke, these tasks can lead to additional burden particularly on weekends when access to care may be limited. We hypothesize that those who are discharged home on a Thursday or Friday are at higher risk for readmission and predict that scripted phone calls to these patients over the weekend could result in reduction in readmissions.

METHODS

During a 5 month period (December 2019 to April 2020), we identified patients who were discharged to home from the acute stroke unit on a Thursday or Friday. These patients were called on the Saturday or Sunday immediately following discharge by a resident physician on the study team. All the patients were asked the same questions and their responses were recorded in a database. The questions included whether they had picked up their medications, from a pharmacy, barriers to medication access if they had not picked them up, status of stroke symptoms, whether primary care and vascular neurology follow-up appointments were scheduled, whether they had a blood pressure cuff at home and if they were measuring their blood pressure, whether they had sufficient help at home, and whether they had health concerns for which they were considering an ED visit. Electronic medical record (EMR) was then used to assess if any of these patients had readmissions within 30 days after discharge from the stroke unit. We compared the number of readmissions in our study group to the number of 30-day readmissions during the 5 month period immediately preceding our study, July 2019- November 2019. As per routine discharge protocol, these patients received a phone call 7 days post discharge however did not get an early follow-up call, as our study patients did. To account for any seasonal variation in readmission rates, we also compared our readmission rates to patients discharged during the same 5 month period, one year prior to our study, December 2018- April 2019.

RESULTS

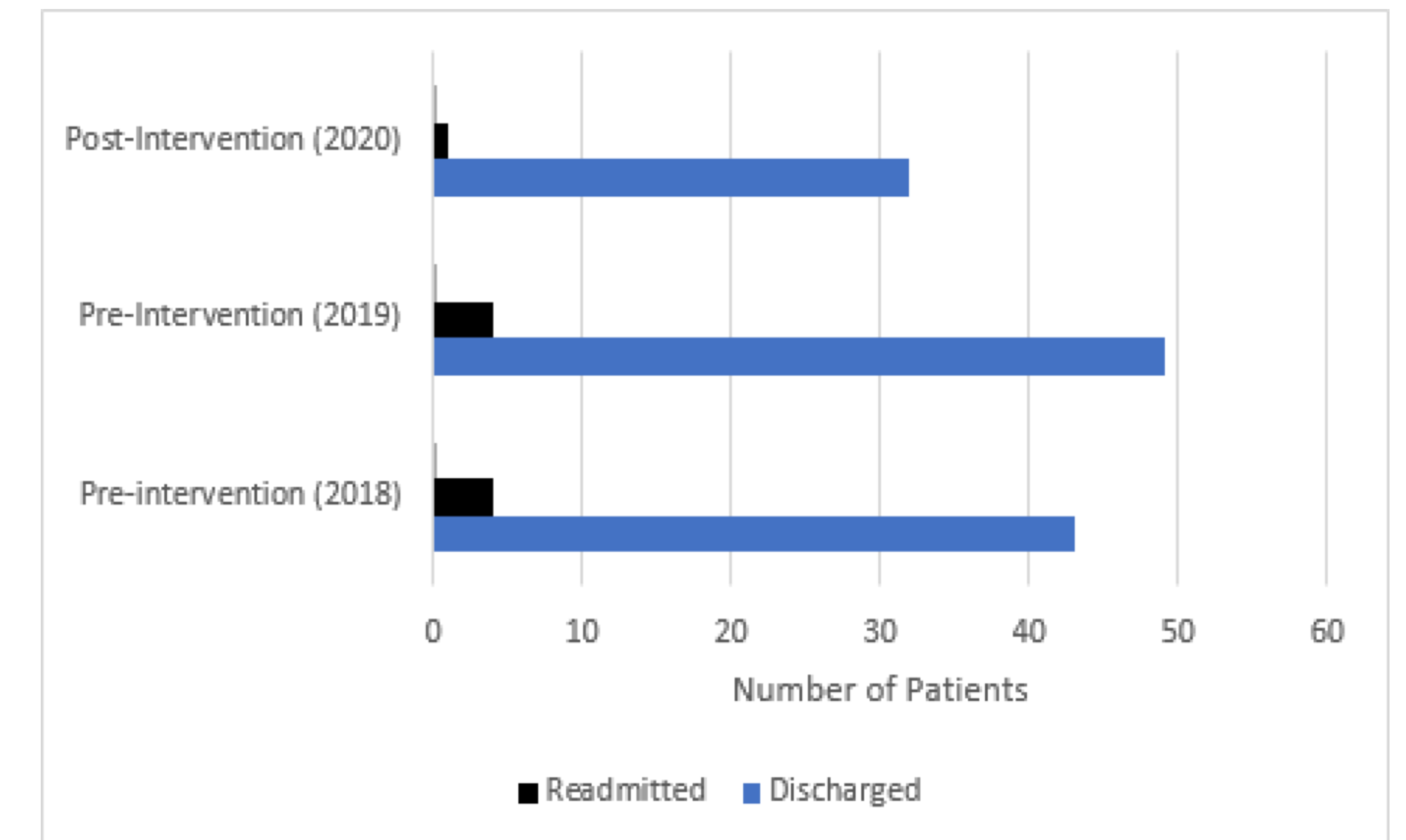
Data was collected via questionnaire during phone call encounters with home discharge patients (Table 1). The primary outcome was 30-day readmission rate for patients discharged home from the stroke unit on a Thursday or Friday. Between 12/2019 - 4/2020 (18 of 24 total weeks were included), there were 50 patients who were discharged home from the acute stroke unit. All 50 patients were given an early post-discharge follow-up phone call; 32 were contacted successfully (64%). Of these 32 patients, 1 patient (3.12%) had a 30-day readmission.

During the 5-month period immediately preceding our study period(7/2019-11/2019), we identified 39 patients who were discharged home on a Thursday or Friday, 4 of which were readmitted within 30 days. The 30-day readmission rate was higher in this group, compared to our study group readmission rate (10.26% vs 3.12%, $p=0.30$). During the same 5-month period one year prior to our study (12/2018 - 4/2019), there were 43 patients discharged home on a Thursday or Friday, 4 of which were readmitted within 30 days. The 30-day readmission rate was also higher in this group, compared to our study group (9.3% vs 3.12%, $p=0.28$). See Table 1. Analysis completed with T Test of unequal variance given varying sample sizes.

Table 1: Phone Questionnaire Responses

	Yes	No
Picked up Meds	29 (90.6%)	3 (9.4%)
Taking Meds	30 (93.75%)	2 (6.25%)
Issues Picking up Meds	2 (6.25%)	0 (0%)
Symptoms Improving	16 (50%)	16 (50%)
PCP Appt Scheduled	18 (56.25%)	14 (43.75%)
Neurology Appt Scheduled	15 (46.875%)	17 (53.125%)
Appointment on DC Summary	11 (34.3%)	21 (65.6%)
Patient told to check BP at home	11 (52.3%)	10 (47.7%)
Monitoring BP at home	10 (31.25%)	22 (68.75%)
Keeping log of BP	4 (12.5%)	28 (87.5%)
Help at home (RN, PT/OT, family)	30 (93.75%)	2 (6.25%)
Concerns that could bring you back to ED	6 (20%)	24 (80%)

Graph 1: Readmission Rates for Patients Called Post Discharge vs. Patients not Called Post Discharge



CONCLUSION

Patients who receive a diagnosis of acute stroke represent a unique population who require close monitoring and meticulous care even after discharge. Contacting patients within 1-3 days after discharge home from an acute stroke unit seems to be associated with lower readmission rates. During the phone calls, patients were given individualized reminders, stroke education and medical guidance. One patient stated, "That's a good idea. I forgot I'm supposed to check my blood pressure." Furthermore, this project highlighted an issue with the discharge paperwork and process as nearly half of the patients did not recall being told to monitor their blood pressure upon discharge. Another area for improvement is ensuring appointments are made prior to discharge. Nearly half of the patients we contacted did not have a neurology follow-up appointment prior to leaving the stroke unit.

In our analysis of the data we found that our phone call questionnaire responses did not include answers to all the scripted questions. It is unclear why this is the case, however in the future a more uniform frequent review of our reporting system or reinforcement of the script to callers may prevent missing data points.

This study is limited in its power due to its small sample size. Moving forward, we intend to continue contacting discharged patients with early follow-up phone calls and increase the number of patients for analysis. To increase the success rate of contacting patients, we will let them know upon discharge that they should be expecting a follow-up phone call. Another limitation of the study is that only readmissions to hospitals with a shared EMR system were counted, as those admitted to hospitals not utilizing the same EMR system were unknown to us. The number of readmissions therefore might be underreported in our study.