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Telephone Follow-up for Heart Failure Patients Discharged to Skilled Nursing Facilities

Anna Laura Trimbur

Bellarmine University, anniet312@gmail.com

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Anna Laura Trimbur, MSN, APRN, FNP-BC, CHFN

Bellarmine University

Abstract

Reducing hospital readmissions has become a national priority for health care institutions. Telephone follow-up, a cost-effective intervention, has been used with varying degrees of success in reducing 30-day readmissions for heart failure (HF) patients. However, little is known about interventions directed toward HF patients discharged to skilled nursing facilities (SNFs).   The purpose of this project was to test the effect of telephone follow-up with SNF staff by an advanced practice nurse (APN) on 30-day readmission rates. A one-time call to SNF staff was made by the APN to review key components of HF management. Readmission rates for the intervention group (n = 24) were compared to the control group (n = 21). No significant difference was observed in readmission rates between the two groups. Further research is needed to establish the efficacy of telephone interventions in reducing rehospitalizations of HF patients discharged to SNFs.

Introduction

HF is a prevalent and costly chronic disease, placing an enormous burden on the health care system. By 2030 an estimated eight million Americans will have the diagnosis of HF, at a total projected cost of $70 billion (Mozaffarian, et al., 2015). HF is also the leading cause of hospitalization and readmission for persons aged 65 and older (Stamp, Machado, & Allen, 2014). The Centers for Medicare and Medicaid Services (CMS) have reported the median risk-standardized 30-day readmission rate for HF was 23% for years 2009-2013 (Ziaeian & Fonarow, 2015). Reduction of readmission rates has become a national priority. Under provisions of the Affordable Care Act (ACA), hospitals are currently facing reimbursement penalties for readmission rates deemed excessive by CMS (Naylor, et al., 2012). Over and above the financial aspect is the impact of readmission on the quality and continuity of care for HF patients (Stamp, et al., 2014).

Much effort has been directed toward determining the exact reason for the high rate of HF readmissions. Commonly identified elements include poor communication, insufficient discharge planning, inadequate medication reconciliation across settings, patient non-adherence, and less than effective education strategies (Smith, 2013). Health care organizations are employing multiple strategies in the effort to address these issues and reduce rates of readmission.

Despite the work of multiple authors on transitions of care (Coleman, 2003; Feltner, et al., 2014; Johnson, Laderman, & Coleman, 2013; Naylor, Aiken, Kurtzman, Olds, & Hirschman, 2011; Stamp, et al., 2014; Vedel & Khanassov, 2015), there is less research examining the nursing processes involved specifically in the transition of HF patients to SNFs. In one literature

review, out of 20 data-based publications concerning HF and SNFs, only two focused on interventions (Jung, Yeh, & Pressler, 2012). Given that discharge to a SNF is one of the strongest predictors of 30-day readmission, this gap in research is especially concerning (King, et al., 2013). Frequently frail, elderly, and with multiple comorbidities, this population is particularly vulnerable to adverse events resulting from poor transitions between settings (Coleman, 2003). Compared to HF patients discharged to home, those patients discharged to SNFs are more likely to be readmitted (27% versus 23.5%), and have higher mortality rates, both at 30 days (14% versus 4.1%), and at one year (53.5% versus 29.1%) (Allen, et al., 2011).

Transition of care has been defined as a broad range of services designed to enhance continuity and coordination of care, prevent avoidable poor outcomes among high-risk populations, and promote the timely and safe transfer of patients from one setting to another, or from one level of care to another in the same setting (Naylor, et al., 2011). Evidence suggests improving communication and coordination of care may reduce 30-day readmission rates (Johnson, et al., 2013). Telephone follow-up calls are often cited as a cost-effective method for enhancing communication. However, consensus is lacking regarding optimal process for conducting these interventions (Johnson, et al., 2013). Review of the literature suggests nurse administered telephone follow-up may have some positive impact on hospital readmissions for HF patients, though little is known about interventions targeting those patients discharged to SNFs.

Reduction of 30-day readmissions for patients discharged to SNFs, particularly those with HF, has become the focus of many quality initiatives at Baptist Health Louisville. In 2015, of the 817 HF discharges from this facility, 201 (25%) were discharged to SNFs. The

readmission rate for the SNF group was nearly 24%, compared to 19.8% in 2014. In contrast, the readmission rate for HF patients discharged to home, self-care in 2015 was 13%.

Methods

The purpose of this quality improvement pilot project was to test the effectiveness of a telephone follow-up intervention led by an APN in reducing 30-day readmission rates for HF patients discharged to SNFs. A comparison was made between usual care plus this intervention and usual care alone. Usual care at the time of this project consisted of a telephoned report from the transferring hospital nurse to the receiving SNF nurse and a series of weekly emails to the directors of nursing (DONs) at receiving facilities from the post-acute transition coordinator at the hospital. The emails, carried out over a period of four weeks, focused on discharge planning for patients at increased risk for readmission, with discharge diagnoses of stroke, myocardial infarction, pneumonia, joint replacement, chronic obstructive pulmonary disease (COPD), or HF. In this hospital, risk for readmission is determined using a modified version of the LACE tool, automatically calculated daily in the electronic medical record. The LACE score is calculated by assigning points for each of four categories: Length of stay (0-6); Acuity on admission (inpatient, 3 points; observation, 0 points); Comorbidity (0-6); and Emergency room visits during the past six months (0-4). A score ≥ 11 indicates high risk for readmission (Finkel, 2014). Any patient in this hospital with a score ≥ 7, is included on the daily LACE report.

Components of the project intervention were developed by the APN based on the review of the literature. The intervention plan was finalized and submitted for review and approval by stakeholders in hospital administration of the 519-bed acute care facility. These stakeholders included the vice-president of quality, and directors of case management and quality.

Institutional review board approval through the hospital system, as well as the project director's university, was obtained before implementation of the intervention and data collection. In addition, prior to implementation, the project director and post-acute transition coordinator met with leadership representatives of each of six selected SNFs, for review and approval of the project. SNFs were selected based on frequency of disposition for HF patients in the six months preceding the project.

Subjects were identified by the APN's daily review of a HF data base compiled by the facility's clinical outcomes nurses. Subjects were enrolled over a period of four months (October 2015-January 2016). The destination SNF was identified by review of case management progress notes, again by the APN. Prior to the patient's discharge, the APN met with each subject and/or family members, to explain the project and obtain informed consent. The intention of the project was to include all eligible subjects in the intervention. However, due to unforeseen circumstances, such as last-minute changes in discharge planning and timing of discharge, all eligible subjects did not receive the intervention. Those subjects who refused participation, or for whom informed consent was not obtained, were designated as the control group.

Follow-up telephone calls were initiated as early as 24 hours following discharge, with the intent of completing calls within 72 hours of discharge. Calls were made to the contact person designated in discussions with SNF leadership. Elements of the follow-up calls were based on those commonly identified in the literature as part of transitional care for HF (Albert, et al., 2015; Johnson, et al., 2013), and included:

1. Confirmation of 2-gram sodium diet

2. Reminder of the necessity of provider follow-up within five days of transfer to SNF

3. Daily weight monitoring. SNF staff was informed of the subject's discharge and/or dry weight. Weight gain of > two pounds in 24 hours or > four pounds in one week were to be reported to a provider.

4. Confirmation and clarification of diuretic orders; abbreviated medication reconciliation of other cardiac medications.

Phone calls were documented on an Excel spreadsheet by the project APN. Each subject was then tracked for a period of 30 days following hospital discharge. The primary outcome measure for this project was 30-day readmission rates.

Categorical variables (gender, SNF destination, readmit status), expressed as absolute numbers and percentages, were compared using Chi-square test or Fisher's exact test, as indicated. Continuous variables (age, LACE score, number of year-to-date admissions) were expressed as the mean ± standard deviation (SD). Those with normal distribution were compared using independent sample t-test; those with asymmetric distribution were compared using Mann-Whitney U test. All data were analyzed using SPSS, version 22. A p-value of < .05 was considered statistically significant for this project analysis.

Results

Between October 2015 and January 2016, a total of 45 eligible patients were enrolled: 24 in the intervention group and 21 in the control group. The intervention group was predominantly male (54%), with mean age of 81.4 ± 8.3 years. The control group was predominantly female (62%), with mean age of 75.9 ± 13 years. No significant difference was observed between groups regarding distribution among the selected SNFs (p=.636). Mean LACE scores were similar for each group: 12.5 (SD 3.2) for the intervention group and 10.9 (SD 2.9) for the control

group. No significant difference was observed between groups in mean number of year-to-date admissions: 1.8 (SD 1.3) in the intervention group and 2.4 (SD1.4) in the control group (p=.139). Patient characteristics are summarized in Table 1.

Completion of follow-up calls within 72 hours of hospital discharge was the intent in this project. However, this time frame was met in only eight of 24 cases (33%). In over a third of cases (38%), multiple calls were required to complete the follow-up communication. Confirmation of all four elements of HF follow-up occurred in only seven of 24 cases (29%). Average time spent in each call actually speaking with SNF staff was 10 minutes, excluding time spent in calls when messages were left for staff.

A readmission rate of 29% was observed for the sample as a whole and both the intervention and control groups (p=.965). This is slightly lower than the reported rate for all HF discharges to SNFs in quarter four of 2015 (31.5%). The average time elapsed from hospital discharge to readmission was 14 days for the intervention group and 16 days for the control group. Heart failure as the readmission diagnosis was seen in 50% of the readmits in the control group and 43% of those in the intervention group. A summary of readmission data is shown in Table 2.

Discussion

For the patient sample of this project, no significant difference in rate of readmission was observed between the intervention and control groups, similar to findings in previous research studies (Vedel & Khanassov, 2015; Wong, et al., 2014). Telephone follow-up as a singular intervention has shown to be successful in reducing readmission rates in other studies (Scott, 2010; Jacobs, 2011). Only HF-specific readmissions were reduced by telephone support in a systematic review of transitional care interventions (Feltner, et al., 2014). Other studies suggest

some benefit from telephone interventions (Brandon, et al., 2009; Kind, et al., 2012; Slater et al., 2008; Dunagan, et al., 2005), though none deal specifically with SNF patients and heterogeneity of interventions make direct comparison difficult.

The challenges in transitions of care are numerous for HF patients discharged to SNFs. Studies have suggested care coordination is a key component in preventing rehospitalization (Hernandez, et al., 2010). Care coordination is absolutely dependent upon bidirectional communication between SNF and hospital staff (Jurgens, et al., 2015). Until such time as electronic medical record systems are universally utilized with capacity for interface between facilities, communication will continue to be accomplished by written and verbal means. Though in this project telephone follow-up alone was not shown to be successful in reducing readmissions, further research will be needed to determine if and how telephone interventions may be utilized in preventing avoidable rehospitalizations.

Barriers to be addressed in future interventions include turnover in SNF leadership and staff. Changes in leadership occurred in three of six SNFs in this project, complicating the timely completion of follow-up calls. Speaking directly with staff nurses was not always possible in this project. Direct contact with clinical staff who have ready access to patient records, would likely allow more efficient use of telephone interventions, and be less disruptive to SNF staff workflow. Two major tenets of HF management, reduced dietary sodium and daily weight monitoring, were found to be lacking for multiple patients in the intervention group. Certainly opportunity exists for education in and heightened awareness of HF management guidelines in the SNF environment.

Any discussion of strategies to address readmissions must include adequate discharge planning. The acute care team must determine if the HF patient can be safely managed in a SNF

setting. Higher patient to staff ratios, limited access to on-site providers, and fewer licensed

nursing staff, are all factors to consider when making the decision to transfer a HF patient to a

SNF (Jurgens, et al., 2015). Given the progressive nature of HF, review of goals of care is

recommended with signs of advancing disease (Nazir & Smucker, 2015). Discussion of the

benefits of repeated hospitalizations and appropriate referral for palliative care may reduce some

transfers to acute care (Allen, et al., 2011). Though in this project no data was collected

regarding documented discussion of goals of care, it would certainly seem such discussions

would be warranted in this sample, given that slightly more than half of patients in the total

sample experienced two or more admissions in the past year. It is also interesting to note that in

this project sample, 27% of patients had high LACE scores ($\geq$14), reflecting the complexity of

the group and the need for comprehensive discharge planning.

Efforts to reduce avoidable readmissions for these complex, chronically ill patients will

require ongoing collaboration between acute care and post-acute care facilities. Delivering high

quality care, improving patient outcomes, and enhancing patient/family satisfaction are common

areas of focus for both levels of care. Though readmission rates were unchanged by the

intervention utilized in this project, the outreach to selected SNFs helped form relationships

between staff members, laying the groundwork for collaboration on future initiatives. In early

2016, Baptist Health began quarterly meetings with SNF leadership to discuss quality issues, as

well as a pilot project testing direct telephone handoff between medical providers.

Limitations for this project include utilization of a one-time intervention, carried out over

a short period of time. Therefore, the number of subjects receiving the intervention was quite

small, threatening the generalizability of findings. None of the findings reached statistical

significance, again likely due to small sample size. The intervention was directed toward only

six selected SNFs and did not include all HF discharges to SNFs.

Conclusion

Telephone follow-up has been used with varying degrees of success in reducing 30-day

readmissions for HF patients, though few studies address those patients discharged to SNFs. The

feasibility of telephone interventions may or may not be borne out by future research, but it

represents only a small piece of the larger puzzle of transition of care processes. Fostering

partnerships with community SNFs to address problems with transitions will serve to strengthen

efforts to reduce preventable readmissions. The optimal program will be tailored to population

and resources, developed after analysis of current processes. Further research is needed with

particular emphasis on goals of care discussions and comprehensive discharge planning. A

multidisciplinary approach, coupled with engagement of patients, families, and caregivers, will

be essential (Coleman, 2003). The value of 30-day readmission as a reliable marker for quality

is debatable, but the ultimate prize will be enhanced quality and coordination of care.

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Table 1

Patient Characteristics

		Intervention n=24 Frequency(%)	Control n=21 Frequency(%)	*p*-value
Gender	Male	13(54%)	8(38%)	.281
	Female	11(46%)	13(62%)	
Destination SNF	1	4(17%)	2(10%)	.636
	2	3(13%)	2(10%)	
	3	7(29%)	3(14%)	
	4	1(4%)	1(5%)	
	5	5(21%)	9(43%)	
	6	4(17%)	4(19%)	
		Mean(SD)	Mean(SD)	
Age		81.4(8.3)	75.9(13.0)	.107
LACE score		12.5(3.2)	10.9(2.9)	.079
Year-to-date admits		1.8(1.3)	2.4(1.4)	.139

Table 2

Readmission Data

		Intervention n=24		Control n=21		p-value
		Discharges	Readmits(%)	Discharges	Readmits(%)	
SNF	1	4	1(25%)	2	2(100%)	
	2	3	1(33%)	2	0	
	3	7	2(29%)	3	0	
	4	1	0	1	1(100%)	
	5	5	1(20%)	9	1(11%)	
	6	4	2(50%)	4	2(50%)	
Total		24	7(29%)	21	6(29%)	.965