

Improving Posthospital Discharge Telephone Reach Rates Through Prehospital Discharge Face-to-Face Meetings

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ABSTRACT

Purpose of the Study: The purpose of this study was to determine whether a face-to-face meeting with patients by a telephonic case manager prehospital discharge would result in increased telephone follow-up (TFU) reach rates posthospital discharge.

Primary Practice Setting: Acute care adult medicine inpatient units.

Methodology and Sample: A quasiexperimental design was utilized. Two adult inpatient medicine units were selected as the intervention and comparison groups. The framework of the study is the transitions theory. A convenience sampling technique was used, whereby 88 eligible patients on the intervention unit received face-to-face meetings prehospital discharge whereas 123 patients on the comparison unit received standard care (no face-to-face meetings). Cross-tabulation and chi-square tests were employed to examine the association of face-to-face meeting intervention and TFU reach rates.

Results: Implementing brief (<10 min) face-to-face meetings by a telephonic case manager prehospital discharge resulted in a TFU reach rate of 87% on the intervention unit, whereas the comparison unit only had a 58% TFU reach rate ($p < .001$).

Implications for Case Management Practice: Increasing reach rates by a telephonic case manager facilitates communication with more patients posthospital discharge. A brief prehospital discharge face-to-face meeting with patients assisted them to understand the reasons for a posthospital discharge telephone call, identified the best times to call using accurate telephone numbers, and taught patients how best to prepare for the call. In addition, by meeting patients face-to-face, the telephonic case manager was no longer an unknown person on the telephone asking them questions about their medical condition. These factors combined may have significantly helped to increase TFU reach rates.

Key words: *face-to-face meetings, postdischarge telephone follow-up calls, reach rates*

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The cost of unplanned hospital readmissions in the United States has been estimated to be \$44 billion annually (Hines, Barrett, Jiang, & Steiner, 2014) and 20% of these readmissions occur within 30 days of discharge. Half of these readmissions may be avoidable and, if prevented, could reduce annual health care costs by \$4.4 billion (Shulan, Gao, & Moore, 2013). In the United States, there is a growing interest in improving transitions of care to reduce costly avoidable hospital readmissions (Labson, 2015). Transitions of care are defined as the movement of patients from one setting of care (e.g., hospital, primary care practice, long-term care, and rehabilitation facility) to another (Wang et al., 2016). One component of a program to improve transitions is telephone follow-up (TFU) posthospital discharge to improve patient understanding of the plan of care (CMS Medicare Program, 2011). TFU by case managers (CMs) has been shown to reduce preventable low- to moderate-risk hospital readmissions as one component of a care coordination program (Shepperd et al., 2013; Verhaegh et al., 2014).

BACKGROUND

A health care innovation award from the Centers for Medicare & Medicaid Services established the Johns Hopkins Community Health Partnership (JCHiP) to improve transitions of care at Johns Hopkins Health Systems (Berkowitz et al., 2016). The JCHiP program was rolled out on select adult inpatient units. One component of this program was TFU posthospital discharge. The Patient Access Line (PAL) call center was established that employed registered nurses as telephonic CMs to conduct follow-up calls 24–72 hours posthospital discharge with patients identified as having with a low-to-moderate risk of hospital readmissions (Deutschendorf, 2015). Patients with a low-to-moderate risk of readmissions can be defined operationally as one with a low Early Screen for Discharge Planning (ESDP) score, based on a tool that has been shown to predict the likelihood of hospital readmissions (Holland, Knalf, & Bowles, 2012). These are patients who can be discharged without need for high-intensity interventions such as home care visits or transfer to a rehabilitation unit. The purposes of TFU are to:

- assess the patients' condition posthospital discharge;
- review discharge instructions that contain medication list and plan of care;
- answer questions about self-care management;
- evaluate understanding by using the teach-back method; and
- triage the patient to the appropriate staff member (physician, pharmacist, social worker, homecare services, transition guide nurse, and guest relations) if issues are identified (Brittain et al., 2014).

Patient information was downloaded from the hospital's electronic medical record (EMR) system. The standard of practice of telephonic CMs at the Johns Hopkins Hospital was to make cold calls to discharged patients identified as eligible for a call. However, because of "cold calling," patients may be unaware on the importance of TFU, which may have the effect of decreasing patient engagement in the call. As a result, many of these calls were not completed successfully, reducing the potential benefits of TFU. In 2015, the medical center's overall TFU reach rate was 60% (Deutschendorf, 2015). Therefore, 40% of eligible patients for a PAL call were not reached.

Organizational findings demonstrated that patients eligible for TFU had a 13% relative decrease in hospital readmission rates (Brittain et al., 2014). In addition, an analysis of data from the hospital found that eligible patients not reached for TFU had a 35% higher risk of hospital readmission (Deutschendorf, 2015). Thus, although the initial rate was somewhat better than the 30% average national TFU reach rate (Rodak, 2012), the department's administration was open to new strategies to increase TFU reach rates.

Based on the CMs' experience, one barrier to achieving better reach rates was that many patients were unaware of the purpose of TFU, thus were unwilling to participate when called. Other barriers included inaccurate telephone numbers listed in the patient EMR, undocumented health care representatives, and inconvenient timing of the TFU call. Previous research studies have demonstrated that a prehospital discharge face-to-face meeting with the patient to discuss TFU may improve reach rates (Coleman, Parry, Chalmers, & Min, 2006; Parry, Kramer, & Coleman, 2006; Jack et al., 2009; Kind et al., 2012).

The Johns Hopkins Nursing Evidence-Based Practice model was utilized to critically appraise the evidence for best practices for contacting patients posthospital discharge (Dearholt & Dang, 2012). The model is designed to specifically meet the need of practicing nurses and uses a three-step process:

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develop a practice question, find and evaluate evidence, and translate the evidence into practice (Dearholt & Dang, 2012).

Conceptual Nursing Framework

The transitions theory was utilized as the framework for the study. Key concepts of this theory include (a) the nature of transition; (b) facilitators and inhibitors of transitions; (c) patterns of response; and (d) nursing therapeutics (Meleis, 2010). According to this theory, the type of a transition experience can be impacted by properties such as *awareness* of the change, and level of *engagement* in the process of transition, changes in levels of ability, a *time span* of the transition, and *critical points* of transition such as chronic illness. Transitions theory also includes the concept of *nursing therapeutic* that informs the importance of developing effective relationships between the nurse and the patient to a successful transition.

Purpose of Study

The purpose of this article is to describe a quality improvement intervention to increase the TFU “reach rate” for patients discharged from a general medicine unit in an academic medical center. Reach rate can be defined as the proportion of completed TFU among eligible patients (Menchine et al., 2013). The primary objective was to determine whether a face-to-face meeting between the patient and a telephonic CM prior to hospital discharge was associated with a higher TFU reach rate posthospital discharge compared with usual practice. A second objective was to determine whether specific demographic variables (gender, race, and age) were associated with TFU reach rate.

METHODS

Design

The study employed a quasiexperimental design to determine the effect of face-to-face meetings on TFU reach rates for patients discharged from intervention and comparison inpatient medicine units. The study was conducted between December 3, 2014, and March 16, 2015. Permission to conduct the study was obtained from the call center’s leadership group. The Johns Hopkins Medicine Institutional Review Board determined this study to be exempt. Written consent was not necessary, but all patients on the intervention group were given the option to participate or to decline. Study data were deidentified and saved to the institutions’ secured server.

Population and Sample Size

The practice setting for this study was adult inpatient medicine units at the Johns Hopkins Hospital. Two different units were selected as the intervention and comparison groups because they had similar baseline TFU reach rates (49.33% and 48.70%, respectively) and were utilizing a novel care coordination program from the JCHiP.

A convenience sampling technique was used for patients admitted to the intervention and comparison units. Eligible patients in this study met the following criteria:

- discharged with a medical diagnosis;
- with low to moderate risk of hospital readmission based on ESDP scores;
- 18 years and older; and
- able to speak and understand English.

Patients with the following posthospital discharge needs and conditions were excluded from this study:

- complex postacute services such as home health and transition guide services;
- left the hospital against medical advice; and
- lacking capacity to consent.

Patients at higher risk for readmissions were excluded because these patients were enrolled in a more comprehensive postdischarge care such as transfers to rehabilitation facilities or home care nurse visitations.

Intervention

The intervention was a prehospital discharge face-to-face meeting with patients by one designated telephonic CM. The purpose of the meeting was to prepare the patient for the TFU and obtain essential information needed for the telephone call such as:

- the best telephone numbers to reach the patient;
- preferred time and date for TFU;
- name of health care representative, if one was designated; and
- items needed at the time of the TFU.

This information was recorded on a handout, a copy of which was given to the patient that served as a reminder that a TFU was scheduled. The designated telephonic CM called patients based on the date and time, agreed to, and recorded on the handout following the steps outlined in Figure 1. The comparison medicine unit received the standard practice of conducting TFU, which included up to three TFU call attempts made by telephonic CMs without seeing the patients prior to hospital discharge. Randomization of units to intervention and comparison groups was made by tossing a coin.

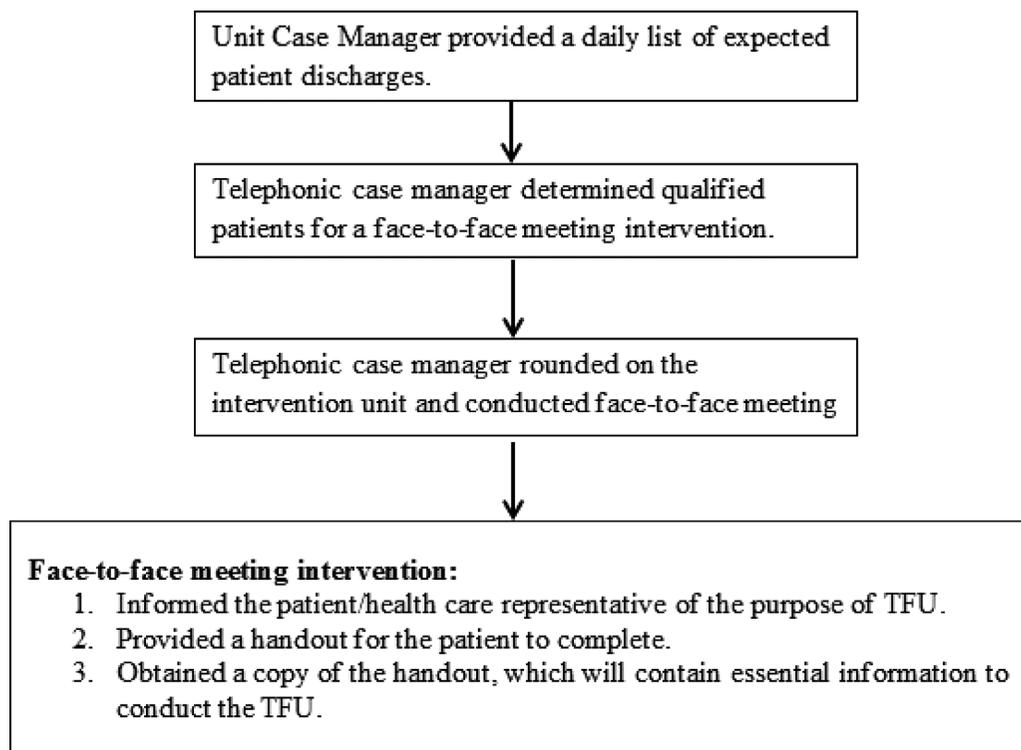


FIGURE 1
Steps in conducting face-to-face meeting interventions.

Study Variables

The primary outcome was TFU reach rate. Sociodemographic variables such as patients' gender, race, and age were also collected. A retrospective review of the comparison unit was conducted to maintain independence of study participants.

Statistical Analysis

A power analysis was conducted a priori to determine the appropriate sample. It was determined that 88 patients were necessary to achieve 80% power to detect a medium effect size of 0.3000 using a 1 degree of freedom chi-square test with a significance level of .05 (Cohen, 1988). To determine whether the demographic variables were balanced between the intervention and comparison groups, chi-square test (gender) and Fisher's exact test (race and age) were conducted. Cross tabulation and chi-square tests for independence were utilized to examine the effect of face-to-face meetings in the TFU reach rate of the intervention group compared with the comparison group, which received standard of care. Phi coefficient and Cramer's V statistics were estimated to determine the association of demographic variables with the TFU reach rates. Statistical significance was determined at $\alpha = .05$. The Statistical Package for Social Sciences (SPSS) Version 24.0

software (SPSS, Inc, Chicago, Illinois) was used for all statistical analyses.

RESULTS

A total of 296 patients were initially screened as possible participants. One hundred fifteen patients were allocated to the intervention group and 27 patients were excluded, for a total of 88 patients allocated to the intervention group. A total of 181 patients were screened for the comparison group and 58 were excluded, for a total of 123 patients (see Figure 2).

The majority of participants were female (53%), of African American descent (57.8%), and most were between 50 and 59 years (25.1%) (see Table 1). Chi-square and Fisher's exact tests suggest no significant differences between the intervention and comparison groups in terms of sociodemographic variables (see Table 1). The intervention unit had 87% TFU reach rate, in contrast with the comparison group of 58%. Chi-square test demonstrated statistical significance ($p < .001$) (see Table 2). There was no significant association between TFU reach rate and sociodemographic variables (see Table 3).

DISCUSSION

In this study to improve transition of adult medicine patients from hospital to home, we found that a

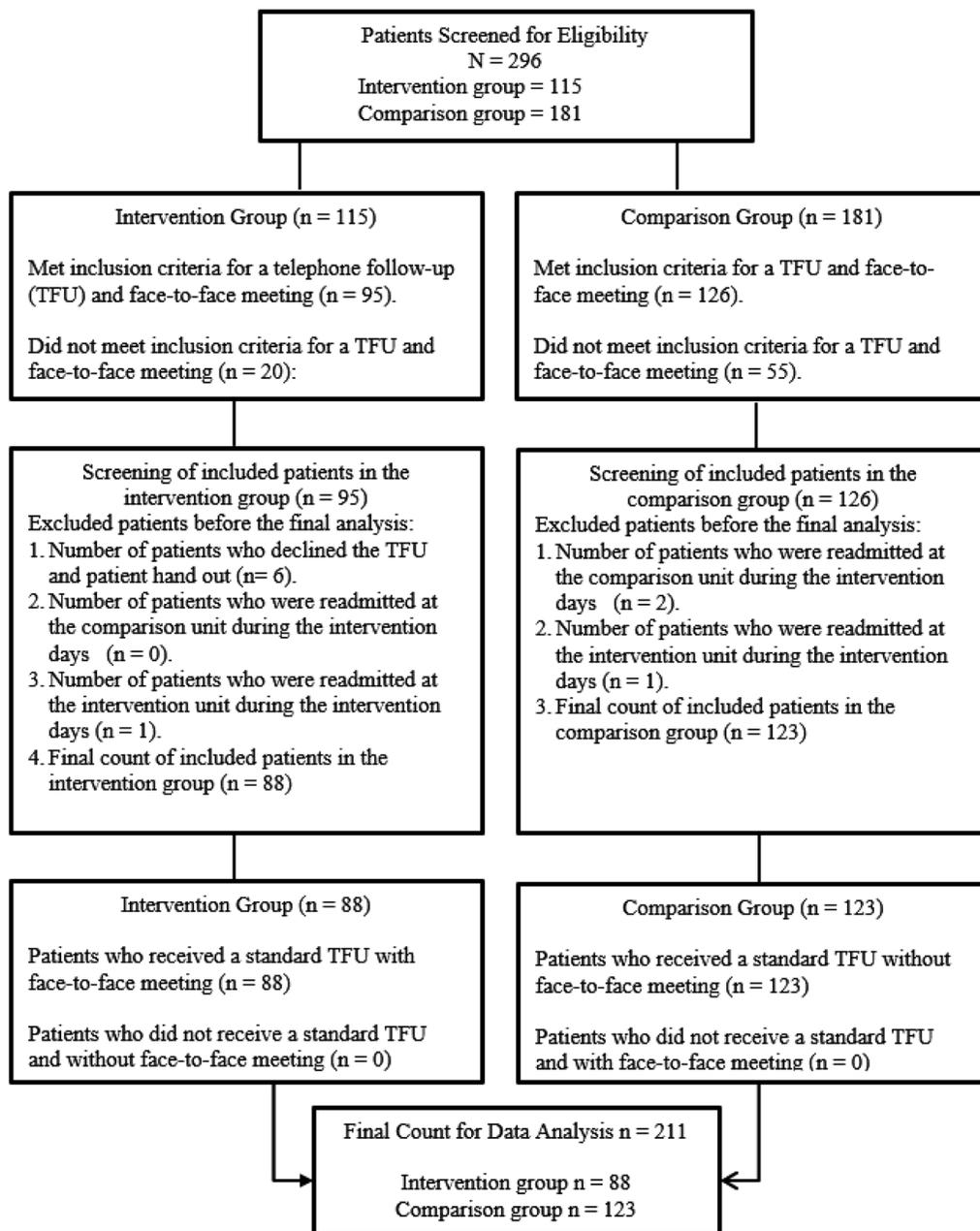


FIGURE 2
Screening of eligible patients.

face-to-face meeting between a telephonic nurse case manager and patient prior to hospital discharge was associated with a 29% increase in completion of the subsequent call. The findings of the study are consistent with the results four prior studies utilizing face-to-face meetings with patients by transitional nurses before hospital discharge, with TFU reach rates between 86% and 99% (Coleman et al., 2006, 2004; Kind et al., 2012; Parry, Min, Chugh, Chalmers, & Coleman, 2009). However, we did not find any association between a limited set of patient demographic variables.

Meleis' (2010) concepts of improving patients' awareness and engagement in posthospital discharge

care plans may be key to the success for increasing reach rates. The face-to-face meeting intervention served as a facilitator of a successful follow-up call in several ways. The meeting was a way to establish a convenient time frame for the TFU as well as provide information about the purpose of the call. Finally, the development of an effective relationship between the telephonic CM and the patient facilitated a feeling of connectedness and promoted interaction; rather than accept and participate in a TFU with an unknown person, the patient could talk with a person already established as someone invested in their successful transition home.

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Limitations

The main limitation of study is the lack of true randomization between groups and selection of participants. Because of the small number of groups, it is possible that confounding variables could have explained the observed difference in outcome. In addition, because of multiple factors that could impact TFU reach rates, such as patient availability at the time of the call, it is difficult to determine which factor is the most influential in successfully reaching the patient posthospital discharge. Furthermore, face-to-face meeting intervention was only applied to adult medicine patients, and the study was not representative of a more diverse population.

Implications for Case Management Practice

With the recent focus on reducing hospital readmissions, the CM's role is becoming more complex and specialized as evidenced by the growing importance of telephonic CMs. The TFU helps ensure the patient is in satisfactory and safe condition at home, understands discharge instructions, and is aware of and has transportation to physician appointments. The telephone call is also a safety net to identify issues that may result in a preventable readmission. As such it is essential that reach rates are high. This study demonstrated face-to-face meetings significantly improved TFU reach rates. This could be due to several factors or all combined; the patient understands the reason for the call; the best time to call using an accurate phone number is determined; the patient is instructed on how to best prepare for the call; and the person making the telephone call is not a stranger to the patient. This has implications for changing case management practice. Most telephonic CMs are stationed in a call center and seeing the patient at the bedside is not part of routine practice. If telephonic CMs are unable to reach a patient posthospital discharge, the benefits of the call are not realized, making it difficult to ensure a seamless transition of care.

CONCLUSION

Hospitalized patients face many challenges at discharge such as making physician appointments,

TABLE 1
Demographic Characteristics

Characteristics	Intervention n = 88	Comparison n = 123	Total n = 211	p Value
Gender, n (%)				.329 ^a
Male	45 (51.1)	54 (43.9)	99 (46.9)	
Female	43 (48.9)	69 (56.1)	112 (53.1)	
Race, n (%)				.970 ^b
African American	52 (59.1)	70 (56.9)	122 (57.8)	
Caucasian	32 (36.4)	47 (38.2)	79 (37.4)	
Others	4 (4.5)	6 (4.9)	10 (4.7)	
Age, n (%)				.583 ^b
18–29	11 (12.5)	15 (12.2)	26 (12.3)	
30–39	18 (20.5)	15 (12.2)	33 (15.6)	
40–49	9 (10.2)	22 (17.9)	31 (14.7)	
50–59	22 (25.0)	31 (25.2)	53 (25.1)	
60–69	13 (14.8)	21 (17.1)	34 (16.1)	
70–79	11 (12.5)	15 (12.2)	26 (12.3)	
>80	4 (4.5)	4 (3.3)	8 (3.8)	

^aChi-square test.

^bFisher's exact test.

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TABLE 2
Telephone Follow-up Reach Rates

Call Status	Comparison n = 123	Intervention n = 88	p Value
Reached, n (%)	71 (58)	77 (87)	.001
Not reached, n (%)	52 (42)	11 (13)	

obtaining necessary medications and supplies needed at home, and most importantly, understanding the medical plan. Employing TFU can be an effective organizational initiative to assist patient's transition to home after hospital discharge and reduce readmission rates. To fully realize these benefits, it is essential that reach rates are high. Conducting face-to-face meetings has shown significant implications in the daily practice of the telephonic case managers.

TABLE 3
Bivariate Association Between Variables

Characteristics	Reached n = 148	Not reached n = 63	Coefficient (p Value)
Gender, n (%)			-.009 ^a (0.894)
Male	69 (69.7)	30 (30.3)	
Female	79 (70.5)	33 (29.5)	
Race, n (%)			.081 ^b (.504)
African American	82 (67.2)	40 (67.2)	
Caucasian	58 (73.4)	21 (26.6)	
Others	8 (80.0)	2 (20.0)	
Age, n (%)			.244 ^b (.051)
18–29	20 (76.9)	6 (23.1)	
30–39	20 (60.6)	13 (39.4)	
40–49	15 (48.4)	16 (51.6)	
50–59	42 (79.2)	11 (20.8)	
60–69	25 (73.5)	9 (26.5)	
70–79	19 (73.1)	7 (26.9)	
>80	7 (87.5)	1 (12.5)	

^aPhi coefficient.

^bCramer's V.

Although this study showed face-to-face meetings prehospital discharge improved reach rates, further studies are needed on different patient populations, health care settings, and clinical specialties to fully understand the overall impact of face-to-face meetings. Specifically, it would be important to explore whether increased reach rates translate to a decrease in preventable hospital readmissions, emergency department visits, and overall health care utilization. Also, although we found no relationship between patient demographic variables and reach rates, the sets of variables we selected were limited. It is possible that a more extensive set of variables that reflect social determinants of health could be related to success in reaching patients. Further studies are needed to evaluate any potential impact of more sociodemographic variables on TFU reach rates. It is also recommended to utilize a true experimental design in the future to determine whether face-to-face meetings increase reach rates and improve patient outcomes.

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