

Direct Phone Communication To Primary Care Physician To Plan Discharge From Hospital: Feasibility and Benefits

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Abstract

Background

The discharge summary is the main vector of communication at the time of hospital discharge, but it is known to be insufficient. Direct phone contact between hospitalist and primary care physician (PCP) at discharge could ensure rapid transmission of information, improve patient safety and promote interprofessional collaboration. The objective of this study was to evaluate the feasibility and benefit of a phone call from hospitalist to PCP to plan discharge.

Methods

This study was a prospective, single-center, cross-sectional observational study. It took place in an acute medicine unit of a French university hospital. The hospitalist had to contact the PCP by telephone within 72 hours prior discharge, making a maximum of 3 call attempts. The primary endpoint was the proportion of patients whose primary care physician could be reached by telephone at the time of discharge. The other criteria were the physicians' opinions on the benefits of this contact and its effect on readmission rates.

Results

275 patients were eligible. 8 hospitalists and 130 PCPs gave their opinion. Calls attempts were made for 71% of eligible patients. Call attempts resulted in successful contact with the PCP 157 times, representing 80% of call attempts and 57% of eligible patients. The average success rate for calls was 47%. The telephone contact was perceived by hospitalist as useful and providing security. The PCPs were satisfied and wanted this intervention to become systematic. Telephone contact did not reduce the readmission rate.

Conclusions

Despite the implementation of a standardized process, the feasibility of the intervention was modest. The main obstacle was hospitalists lacking time and facing difficulties in reaching the PCPs. However, physicians showed desire to communicate directly by telephone at the time of discharge.

Trial registration

French C.N.I.L. registration number 2108852. Registration date October 12, 2017.

Introduction

The hospital discharge is a risky moment in the healthcare process. Medical responsibility is transferred from the inpatient provider or hospitalist to the primary care physician (PCP) [1]. Poor coordination between healthcare professionals leads to discontinuity of care. It can be responsible for adverse events such as medical errors or drugs events, avoidable hospital readmissions and even death [2, 3]. At present, discharge summaries are the main communication medium between the hospitalists and PCPs. Yet, discharge summaries are often incomplete and received too late [4, 5]. This one-way communication is considered insufficient by PCPs in France [6, 7] as in other countries [8–10]. Efforts are being made, in France as in other countries [11], to improve the transmission of information between inpatient and outpatient physicians. Since 2016, the French health authorities have made it mandatory to write a "liaison letter" following a standardized format that must be given to the patient and sent to the PCP on the day of discharge. However, the rate of delivery of this "liaison letter" to the patient on the day of discharge remains insufficient: 45% of French hospitals stays in 2018 [12]. Despite the efforts made, the transmission of information at discharge remains incomplete and delayed, and physicians are dissatisfied [13, 14].

Studies have shown a need for direct physician-to-physician communication at the time of discharge [8, 10, 9, 13, 15]. This need for two-way communication is an expectation of both PCPs [8–10, 13] and hospitalists [10, 13]. This exchange could be done by telephone, email, message in the Electronic Medical Record (EMR), text message or fax [9, 13, 16]. PCPs would prefer the use of the telephone [8]. A phone contact at the time of discharge could ensure rapid transmission of information, improve patient safety and promote interprofessional collaboration by including the PCPs in the discharge planning process. Direct communication between physicians during hospitalization is found at low rates in studies ranging from 23–36.7% [9, 16, 17]. These low rates would be explained by a lack of time, barriers to contact PCPs, and the lack of a standardized process [10, 13]. This study proposes to evaluate a standardized process of direct, two-way, verbal phone communication to improve care transition. Its objective is to study the feasibility and benefits of a phone call from hospitalist to PCP to plan discharge.

Methods

Study design and settings

This study was a prospective, mono-centric, cross-sectional observational study. It took place in a 28-bed-acute medicine unit ("unité de post-urgence médicale" UPUM) of the Grenoble-Alpes University Hospital (GAUH) counting 2100 acute medicine beds.

Participants

All patients discharged from UPUM to home between 11/20/2017 and 2/20/2018 were eligible. Patients transferred to other units and patients who did not declare PCP were excluded.

Intervention

For each eligible patient, the hospitalist responsible for the patient's care had to contact the patient's PCP by telephone within 72 hours before discharge. For this purpose, the hospitalist had a maximum of 3 telephone calls attempts. These 3 calls attempts had to be made more than an hour apart, during working hours (8:30 a.m. to 12:00 p.m. and 2:00 p.m. to 7:00 p.m., Monday to Friday) and spread over 48 hours. The intervention was considered successful if a phone exchange between the PCP and the hospitalist occurred. The intervention was considered to have failed if no phone contact could be made after 3 call attempts. The phone exchange had to contain the key elements of hospitalization: reason and duration of hospitalization, medical management, drug changes, social management, date of discharge, and all necessary information to provide the follow-up. At the end of the phone call, the hospitalist directly asked the PCP for his opinion on the benefit of the calls by means of 4 short closed questions with a binary response modality, that were asked verbally. The content of the telephone calls was not recorded.

Data source

The hospitalist had to complete a standardized paper form for each patient included. This form was designed for this study. It had been previously tested for one month in the same unit to ensure its validity and the understanding of the questions by 4 physicians who did not participate to the study. The first part of the form collected the times and dates of the calls. The second part included the collection of PCPs opinion. The third part included the collection of hospitalists opinion. It was collected by means of 12 questions concerning the feasibility and interest of the telephone contact. The occurrence of a change in hospital management (medical, therapeutic or social) as a result of the telephone exchange was also reported. Patient and hospitalization characteristics were collected from the hospital EMR. The variables collected were: gender, age (in years), place of residence (home, residence for independent seniors, or nursing home), presence of social assistance at home, number of treatments ordered on the patient's entry prescription, length of stay (difference between arrival at the emergency room and discharge from the service, in number of whole days), social care during hospitalization (interview with a social worker, reassessment of allowance, assistance plan or living place), evaluation of functional status 15 days before admission with the Katz Activities of Daily Living (ADL D-15) and Lawton Instrumental Activities of Daily Living (IADL D-15) scales. The main diagnosis of the stay was coded using the chapter titles of the International Classification of Diseases, 10th revision (ICD-10). The occurrence of a readmission at the GAUH within 30 days of discharge was recorded. All these data points were entered into a single computerized and anonymous database using an automatic entry grid. The homogeneity and quality of the data were checked.

Statistical methods

Categorical variables were described by numbers and percentages; quantitative variables by the mean and standard deviation (SD). Univariate comparisons were conducted using the following tests: Chi², Fisher's exact test and Student's t test. These tests were performed with R4Web software. The significance threshold was < 0.05.

Authorizations

A registration to the “Commission Nationale de l'Informatique et des Libertés” was made. Study ethics approval was obtained. The informed consent was obtained from all participating physician.

Results

Participants

During the study period, 275 of the 399 patients hospitalized in the unit were eligible (Fig. 1). The eligible patients were mainly men (52%), living at home (86%), with a mean age of 72.6 years and a reduced functional status (mean ADL D-15 4.9). The average length of stay was 7.0 days.

Intervention feasibility

Calls attempts

Call attempts were performed for 196 patients, representing 71% of eligible patients (Fig. 1). Call attempts resulted in successful contact with the PCP 157 times, representing 80% of call attempts and 57% of eligible patients. Two PCPs called the unit on their own initiative to check on their patient before discharge.

Telephone reachability of PCPs

The first call attempt was successful in 50% of cases, the second attempt in 48% of cases, and the third attempt in 31% of cases. The mean success rate for calls was 47% (total number of calls = 317). On average, the hospitalists had to complete 1.42 (\pm 0.63) calls to reach the PCPs. Calls had a better success rate from 3:00 to 5:00 pm and 6:00 to 7:00 pm. Calls had a better success rate on Wednesdays (58%) and Fridays (55%), but no significant difference between days were found ($p = 0.344$).

Respect of the intervention's requirements

For 42% of call attempts ($n = 81$) some of the calls were completed after the patient was discharged because of a lack of response to the first call attempts. The other intervention requirements were properly fulfilled (92–98%).

Calls attempted versus not attempted: comparison of patient characteristics

Patients for whom calls were completed had longer hospital stays (7.5 days versus 6.1; $p < 0.001$), and were more often discharged on a workday than on a weekend ($p < 0.001$) (Table 1). There was no significant difference regarding other patient characteristics.

Table 1
Eligible patients' characteristics and comparison

	Attempted calls patients (n = 196)	Unattempted calls patients (n = 79)	p
Sex: number of men's (%)	103 (52%)	39 (49%)	
Age: years, average (\pm D)	73,8 (\pm 17)	69,7 (\pm 21)	
Place of residence: number (%)			
Home	171 (87%)	65 (82%)	
Nursing home	16 (8%)	10 (13%)	
Residence for independent seniors	9 (5%)	4 (5%)	
Number of treatments ordered on entry prescription: average (\pm SD)	6,6 (\pm 4)	6,0 (\pm 4)	
Presence of social assistance at home: number of patients (%)	100 (51%)	44 (55%)	
ADL D-15: average (\pm SD) ^a	4,9 (\pm 1)	5,1 (\pm 1)	
IADL D-15: average (\pm SD) ^b	4,9 (\pm 3)	5,0 (\pm 3)	
Main diagnosis of the stay: number (%)			
Diseases of the respiratory system	77 (39,3%)	33 (41,8%)	
Diseases of the circulatory system	23 (11,8%)	9 (11,5%)	
Diseases of the genitourinary system	16 (8,2%)	13 (16,4%)	
Diseases of the digestive system	19 (9,7%)	6 (7,6%)	
Infectious diseases	10 (5,1%)	2 (2,5%)	
Diseases of the nervous system	9 (4,6%)	1 (1,2%)	
Other diseases	42 (21,3%)	15 (19,0%)	
Social care during hospitalization: number (%)	41 (21%)	13 (16%)	
Length of stay: whole days, average (\pm SD)	7,5 (\pm 4,0)	6,1 (\pm 3,9)	0,008*
Day on discharge: number (%)			< 0,001*

	Attempted calls patients (n = 196)	Unattempted calls patients (n = 79)	p
Workdays	183 (93%)	57 (72%)	
Saturday	9 (5%)	18 (23%)	
Sunday	4 (2%)	4 (5%)	
Hospital readmission: within 30 days, number (%)	36 (18%)		
<i>^a missing data = 8 ^b missing data = 26</i>			

Physicians' opinions

Hospitalists' opinions

The calls were conducted by 8 different hospital physicians. The opinion of the hospital doctors on the feasibility of the intervention was good (Table 2). They did not encounter difficulties to reach the PCPs, the additional workload was felt to be low with an estimated time of less than 10 minutes to complete the calls. The response to calls was described as good and cordial for all calls. The telephone exchange was perceived as useful, satisfying and providing security. It often resulted in the collection of new information, considered essential or useful by the hospitalists.

Table 2
Physicians' opinions

HOSPITALISTS' OPINIONS	Answer: Yes
Opinion on the feasibility of the calls (n = 196)	
The workload to successfully reach the PCP is low	85% (168)
The hospitalist did not encounter difficulties to reach the PCP	63% (123)
The time required to establish contact with the PCP is less than 10 minutes	63% (124)
Opinion on the benefits of the calls (n = 157)	
The call was useful and improved patient management	88% (138)
The hospitalist is satisfied with the call	97% (153)
The call is considered redundant with the "liaison letter" and the discharge summary.	53% (83)
The transmitted informations will be taken into account by the PCP in his management	94% (147)
The new informations collected during this call are useful or essential	57% (89)
The call gave the feeling of securing the patient's discharge to the hospitalist	
- in terms of medical care (n = 157)	91% (142)
- in terms of medications (n = 146)	73% (106)
- in terms of social care (n = 71)	50% (35)
PCPs' OPINIONS	
Are you satisfied with this call?	100% (130)
As a result of this call, do you plan to see your patient again within 15 days? ^a	78% (101)
Would you like this call to become systematic to prepare your patient discharge?	83% (109)
Would you prefer to receive this information in another way?	49% (64)
If yes, which one? ^b	
by email	51% (31)
by web-based platform (« Zepira »)	39% (24)
by postal mail	7% (4)
by « liaison letter »	3% (2)
<i>^a missing data = 4 ^b missing data = 3</i>	

PCPs' opinions

132 different PCPs were reached. The PCPs contacted were mainly men (66%), working in urban or suburban areas (92%). The 130 PCPs who agreed to give their opinion were satisfied and would like to see these calls become systematic (Table 2). They preferred the use of the telephone as a first choice and email as a second choice. They thought they would see their patients again shortly after discharge thanks to the calls.

Other points of interest

Hospital management changes

The telephone exchanges resulted in changes in patient management by hospitalist for 34 patients, or 22% of the telephone contacts. These changes were medical in 87% of cases (including changes in treatment) and social in 13% of cases.

Hospital Readmissions

There was no statistically significant difference in re-admission to GAUH between the group of patients where the PCP was contacted (n = 157) and the group where the PCP was not contacted (calls not completed or failed, i.e. n = 118) within 30 days (p = 0.49). There also was no significant difference when only the subgroup of people over 75 years of age was included.

Discussion

Main results

This study shows that it is difficult to establish direct telephone communication between hospitalists and PCPs to plan discharge. Hospitalists were not able to complete the calls for all eligible patients. Patients with longer hospital stays and who were discharged during workdays benefited the most from the calls attempts. These are situations where the hospitalists had more time to do them. As stated by Jones et al. [10], the main obstacle to their realization was the lack of availability of hospitalists. On the other hand, PCPs were not always reachable by phone, even when calling them repeatedly. More than half of the attempted calls were not answered. Mussman et al. encountered the same type of difficulties [18]. This poor rate of reachability can possibly be explained by part time practices or the absence of a regulation secretariat. To improve the availability of both actors, we could imagine inciting physicians to reserve dedicated time slots for telephone exchanges between caregivers. Another possibility would be to arrange a telephone appointment before discharge by the secretariats or by sending an email to the PCP. Despite these barriers to communicate, when contact could be established, hospitalists and PCPs declared themselves satisfied. They showed a mutual interest in verbal communication at discharge. The PCPs surveyed would even like to see this exchange becoming systematic.

Which patients to focus on?

The poor feasibility of the calls justifies the identification of a priority patient profile. According to Munchoff et al. physicians would like a direct communication at discharge for patients who are socially vulnerable and for whom hospitalists have a "concern" based on their clinical judgment [13]. According to Sheu et al., PCPs would like direct exchange for complex hospitalizations (multiple readmissions, multiple comorbidities, high-risk medication changes) [9]. Targeting patients at high risk of readmission and adverse events for whom continuity of care is a priority, such as the geriatric population, is warranted [24, 25].

When to establish contact?

In our study, the changes in the hospital management recorded are an objective evidence of collaboration between PCPs and hospitalists. They are only possible if contact is established before discharge. In our study, as for Zackhof et al., contacts made before discharge allow better level of collaboration [22]. Discharge summaries are infrequently available at the first post-hospitalization appointment [4, 14], leading to an increased risk of readmission [14, 23]. Early contact should reduce the delay in transmission of information and improve patient safety. Moreover, calls prior to discharge could also allow physicians to clarify the dispatch and urgency of the follow-up [13]. This was the case in our study, as the PCPs reported seeing their patients promptly after discharge as a result of these calls.

Hospital readmissions

The 30-day readmission rate reflects the local healthcare organization (coordination of actors, access to care, cooperation between primary and secondary caregivers). In our study, readmission rates were higher than national (15.8%) and local (15.6% for Isère) rates. These results may be explained by the high rate of post-influenza readmission during the winter months. Telephone contact did not reduce the readmission rate. It is possible that the study was underpowered. It has also been shown that the implementation of isolated interventions is not effective on readmission rates [19]. Multimodal and composite interventions are preferable, combining for example pre-discharge and post-discharge interventions [20]. Moreover, the proportion of avoidable readmissions is estimated to be only one quarter of all readmissions [21]. It was therefore unlikely that an isolated pre-discharge intervention could significantly reduce the readmission rate.

Limitations

The main limitation of this study is that it took place in a single unit of a single center. It is uncertain whether the observations are transferable to other settings. The study probably suffered from a lack of power because the numbers of patients and physicians were modest. Readmissions were recorded only at the GAUH and not in other hospitals. Repetition of the surveys by a small number of hospitalists probably biased the responses by reducing their diversity. PCPs opinions were collected verbally through close-ended questions, which may have led to higher satisfaction rates. The daily workload in the unit, which likely influences calls completion, was not evaluated.

How to communicate directly at patient discharge?

Sending discharge summaries only allows one-way communication from hospital to primary care providers. Such communication gives the information provider the status of "expert and holder of the truth". A two-way information exchange would improve collaboration [26], by giving PCPs the opportunity to ask questions, exchange information and collaboratively plan follow-up [1, 22]. As in our study, Pantilat et al. reported that treating physicians preferred the use of the telephone [8]. Telephone numbers are easily accessible. Spoken language is interactive, spontaneous, transitory and allows for greater levels of collaboration [27]. Vocal intonation allows the transmission of subtle emotive cues that aid comprehension [28]. The content of a spoken communication differs from a written communication. This is well established in the field of nursing handovers. Verbal language allows us to communicate information that we would not be comfortable to write down [29], such as difficulties in management [30] or the psychological state of the patient [31]. It provides a more complete picture of the patient's condition [29]. In hospital teams, it is considered the best way to transmit lots of information in a short amount of time [32]. It would further better compliance to recommendations [33]. Nevertheless, telephone communication has certain limitations. Telephone communication can be a source of breach in medical confidentiality [34]. The telephone is a frequent source of interruption of general practice consultations [35] and can affect the doctor-patient relationship [36], and even be a source of errors [37].

According to Munchhof et al. the preferred communication medium for PCPs would be email [13]. Written language has a better traceability and medico-legal value. Being asynchronous, it does not generate work interruptions. However, emails reduce interactions. Emails are not widely used for communication between healthcare providers [38]. The barriers to email use would be issues related to data security and confidentiality [38]. Another barrier is the lack of email directories for physicians. It is important to develop interface platforms for bi-directional and secure exchanges between primary and secondary care providers. In France, since 2014, a secure health messaging system ("Messagerie Sécurisée Santé") is being deployed. It is a secure, national and free messaging system, reserved for healthcare professionals that incorporates a common directory. It is a promising tool that should promote interprofessional communication.

Conclusions

These calls are easily implementable in any discharge process, but they depend on the availability of actors on both sides. This study showed that physicians desire to communicate directly by telephone at the time of discharge, despite difficulties in getting in touch. These simple calls should be encouraged and become part of physicians' routine practice to ensure effective transitional care.

List Of Abbreviations

ADL D-15

Katz Activities of Daily Living scale 15 days before admission

EMR

Electronic Medical Record

GAUH

Grenoble-Alpes University Hospital

IADL D-15

Lawton Instrumental Activities of Daily Living scale 15 days before admission

ICD-10

International Classification of Diseases, 10th revision

PCP

primary care physician

UPUM

“Unité de Post-Urgence Médicale” acute medicine unit

SD

standard deviation

Declarations

Ethics Approval and Consent to Participate: All methods were carried out in accordance with the declaration of Helsinki. Study ethics approval was obtained on 15 September 2021 an Institutional Review Board (CECIC Rhône-Alpes-Auvergne, Clermont-Ferrand, IRB 5891). Written informed consent was obtained from all participants in the study. In accordance with the French law, registration to the “Commission Nationale de l'Informatique et des Libertés” was made on the date of October 12, 2017. The registration number is 2108852.

Consent for publication: Not applicable.

Availability of data and materials: The datasets analyzed during the current study are available from the corresponding author on reasonable request.

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Figures

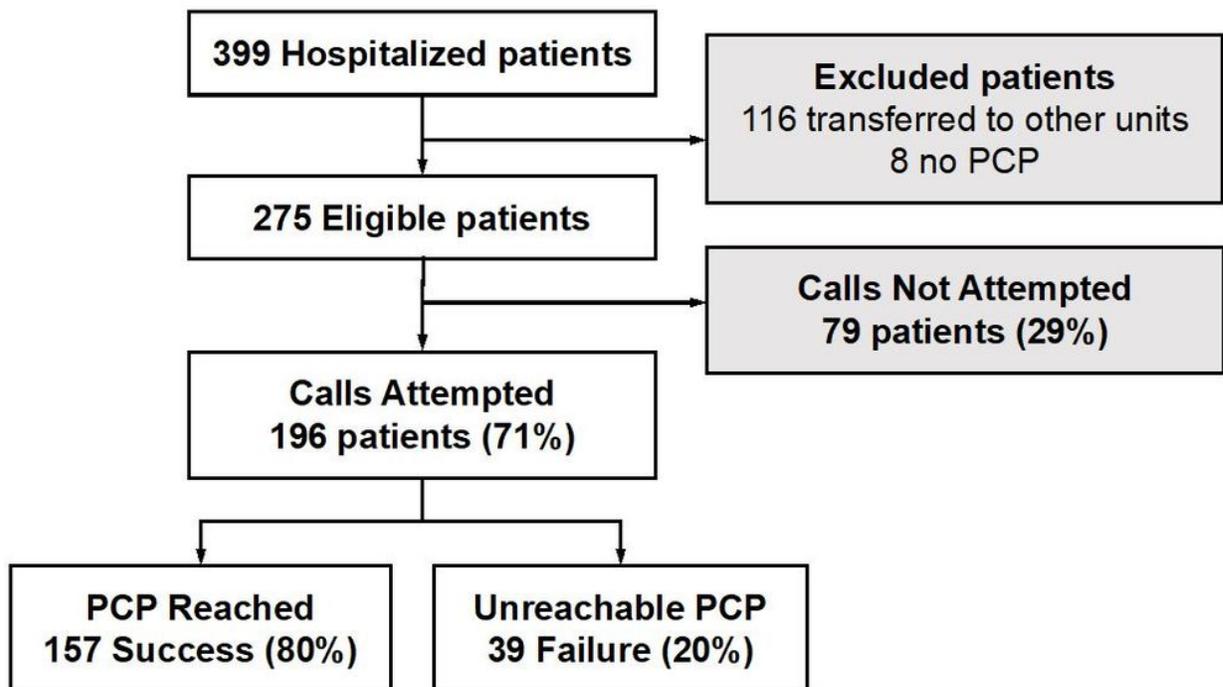


Figure 1

Flow Chart