

Problems After Discharge and Understanding of Communication With Their Primary Care Physicians Among Hospitalized Seniors: A Mixed Methods Study

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BACKGROUND: Communication and coordination with primary care physicians (PCPs) is recommended to ensure safe care transitions for hospitalized older patients. Understanding patient experiences of problems after discharge can help clinical teams design more patient-centered care transitions.

OBJECTIVE: To report older patients' experiences with problems after hospital discharge and investigate whether PCPs were aware of their hospitalization.

DESIGN: Prospective mixed methods study.

SETTING: Single academic medical center.

PATIENTS: Hospitalized patients and PCPs.

MEASUREMENTS: Telephone interviews of frail, older general medical patients conducted 2 weeks after discharge to elicit patient problems after discharge, such as: (1) obtaining medications, or follow-up appointments; and (2) perceptions of hospital physician communication with their PCP. For each patient interviewed, their PCP was faxed a survey 2 weeks after discharge to assess awareness of hospitalization.

RESULTS: Forty-two percent (27) of patients reported 42 different post-discharge problems. The most frequently reported problems were difficulty with follow-up appointments or tests (12). Other reported problems included readmission and return to the Emergency Department (10), problems with medications (8), not-prepared for discharge (8), and hospital complications or questions (4). Thirty percent of PCPs were unaware of patient hospitalization. Patients were twice as likely to report a problem if their PCP was unaware of the hospitalization (31% PCP aware, vs. 67% PCP not aware; $P < 0.05$).

CONCLUSION: This study suggests that many frail, older patients reported problems after discharge and were twice as likely to do so when the patient's PCP was not aware of the hospitalization. Systematic interventions to improve communication with PCPs during patient hospitalization are needed. *Journal of Hospital Medicine* 2010;5:385–391. © 2010 Society of Hospital Medicine.

KEYWORDS: awareness, communication, problems.

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Recently, there has been an increased focus on improving communication during care transitions for older patients as they leave the hospital. One reason for this focus is the increasing utilization of hospitalists, or hospital-based physicians, caring for patients in the United States.¹ As a result, many primary care physicians (PCPs) no longer care for their patients while in the hospital and may not be informed of their patients' hospitalization.² Additionally, with an emphasis on shorter lengths of hospital stay, more extensive post-discharge follow-up is often warranted for patients, which often becomes the responsibility of a patient's PCP. Recently 6 societies (American College of Physicians, Society of General Internal Medicine, Society of Hospital Medicine, American Geriatrics Society, American College of Emergency Physicians, and Society of Academic Emergency Medicine) have recommended that a patient's PCP is notified during all steps in care transitions and that patient-centered approaches are employed.³ Despite the increased need for improved inpatient-ambulatory care transitions, the communication between hospitalists and PCPs has been characterized as being poor and ineffective.⁴ Prior studies have shown that PCPs are not aware of test results that require follow-up, may not receive timely or high quality discharge materials, and have an overall poor perception of the quality of communication.⁴⁻⁶ Ensuring adequate communication is considered important due to the increased risk of adverse events that patients experience after discharge from the hospital.⁷⁻⁹ Furthermore, recent studies have shown that patients are often able to identify and report adverse events that would not be detected by medical record review alone.^{10,11} Eliciting patient perspectives on their experiences after discharge and their expectations of communication between PCPs and hospital physicians can help clinical teams design more patient-centered solutions for care transitions.

The aim of this study is to report older patients' experiences with problems after hospital discharge and their understanding and expectation of communication between hospital physicians and their PCP. We also explored the relationship between patient experiences and whether their PCPs were aware of their hospitalization.

Methods

Study Design

Patients were recruited for this study from February 2008 to July 2008 using the University of Chicago Hospitalist Study, a large ongoing study that interviews hospitalized patients regarding quality of care.¹ Two enrollment strategies were used; in order to oversample frail elders, all patients who were defined to be "vulnerable elders" using the VES-13, based on age, self-rated health, and physical function are asked to consent to surveying their PCP about their admission.¹² In addition, every tenth hospitalized patient (with medical record number ending in 5) was asked to consent to have his or her PCP surveyed about communication regard-

ing their admission. Patients who could not name a PCP or those patients who named a physician who denied caring for that patient were excluded. The study was approved by the University of Chicago Institutional Review Board.

Inpatient Interview and Chart Review

Within 48 hours of hospitalization, patients were approached by trained research assistants and first asked to complete the telephone version of the Mini-Mental Status Exam.¹³ For those patients who scored a 17 or below on this 22-point instrument, a proxy was approached to consent to the study and complete the interview protocol. Patients or their proxies then completed an inpatient interview to ascertain age, sex, self-reported race, income, education and place of residence (home, nursing home). Patients were also asked if their PCP is affiliated with the University of Chicago and whether they had been hospitalized in the year prior to admission. Chart reviews were conducted for calculation of length of stay and location of discharge was also obtained (ie, rehabilitation, home, nursing home).

Two-Week Post-Discharge Phone Interview

To ascertain patient reports of problems after discharge, we conducted telephone interviews of eligible patients and/or their proxies 2 weeks after discharge. During the telephone interviews, each patient was asked 12 open-ended questions to facilitate the reporting of events. Interviews were conducted by trained research assistants, who were blinded to whether the PCP was aware of a patient's hospitalization. Questions focused on the patient's perception of the quality and extent of communication that occurred between his or her identified PCP and the inpatient physician who provided his or her care while hospitalized. For example, the patient was asked if his or her PCP was aware of the hospitalization and if so, the patient was also asked: "*Do you know who told your regular doctor?*" Patients were asked about their perception of their PCP's knowledge of their clinical course.

Because we were interested in understanding problems after discharge, we used critical incident technique to solicit the patient's experience with these events. This technique was initially developed to study aviation accidents and can broaden our understanding of rare and poorly observed events by using subjective reports of an individual's own experience.^{14,15} From the literature, we a priori identified post-discharge problems including difficulties with follow-up tests or appointments, medication changes, and readmission. Thus, we asked each patient, "*Did anything bad or inconvenient happen following your hospital stay, such as problems with new medications, missing a test, going back to the hospital.*" The interviews were audio-taped and transcribed for analysis.

PCP Surveys

To supplement the patient-reported data and to complete our understanding of what communication did or did not

take place, the PCP of each enrolled patient was faxed a survey that ascertained PCP awareness of the hospitalization using the yes or no response to the question “*Were you aware that your patient had been hospitalized?*” For those patients who successfully completed the interview, PCPs who had not responded to the fax were also called by telephone to ascertain whether they were aware of the hospitalization, when they became aware (during or post hospitalization) and how they came to be aware.

Data Analysis

The qualitative analysis of the patient interview data was performed using Atlas.ti 5.2 (Berlin) software program. The deductive approach was used for post-discharge problems that had been characterized in prior literature, such as problems with follow up tests, medications, medical errors, and risk of rehospitalization.^{2,16} The constant comparative method was used for the emergence of new codes.¹⁷ With this inductive method, the interviews were coded with no a priori assumptions, and each incident was characterized during the initial coding process. The incidents were then compared between the interviews to integrate them into themes and categories. This initial coding scheme was developed by a team (VA, JF, MP) from a sample of 5 transcripts. Using these newly emerged codes, the scheme was then applied to the rest of the transcripts (MP). Two new codes emerged from the deductive approach, negative emotions and patient empowerment, which are discussed in detail in the results.

Quantitative data were analyzed using Stata 10.0 (College Station, TX) software. Descriptive statistics were used to tabulate the frequency and percentage that patients reported a post-discharge problem. A post-discharge problem was defined by the patient reporting confusion or having problems at discharge with medications, follow-up tests or appointments. The frequency and percentage for PCP-reported awareness of the hospitalization was also tabulated. A Fisher’s exact test was used to examine the association between post-discharge problems and PCP awareness of hospitalization. Similar tests were performed to assess the association between new codes and post-discharge problems. To assess for responder bias, responders and non-responders were compared using chi-square tests and *t*-tests, where appropriate, to assess for differences in age, race, gender, education, income, admission in the past 12 months, residence, PCP location, mental status, length of stay, and discharge status.

Results

Of the 114 eligible patients recruited between February and July 2008, 64 patient interviews were completed (56%). The average patient age was 73 years. Most patients were female (69%), African American (70%), live at home (75%), and have a PCP located at the University of Chicago (70%). There were also several who were low income (23% below a

TABLE 1. Patient Characteristics

Patient Characteristics (n = 64)	n (%)
Mean age (year), mean (SD)	73 ± 15
Female sex	44 (69)
African American	45 (70)
Mini Mental Status Exam score, mean (SD)	19 ± 5.8
Proxy used for interview	6 (9)
Length of Stay, mean days (SD)	5.3 ± 6.1
On-site PCP (University of Chicago)	45 (70)
Hospitalized in the year prior to admission	31(48)
Income	
<\$15,000	15 (23)
>\$15,000	15 (23)
Don't know or refused	34 (53)
Residence	
Own house or apartment	48 (75)
Relative or friend house or apartment	6 (9)
Nursing home, group home, long term care home	10 (16)
Education	
No college	33 (52)
At least some college	25 (39)
Not sure or do not know	6 (9)

Abbreviations: PCP, primary care physician; SD, standard deviation.

median yearly income of \$15,000), and did not attend any college (52%). These patients had an average length of stay of 5.3 days, nearly half (48%) having been hospitalized in the past year, and 6 patients (9%) required a proxy to complete the interview (Table 1). There were no significant differences between responders and nonresponders with respect to race, gender, education, income, admission in the past 12 months, residence, PCP location, mental status, length of stay, or discharge status. Responders were more likely to be older than nonresponders (73 years [95% confidence interval {CI} 69–76 years] vs. 63 years for nonresponders [95% CI 57–69 years]; [*P* < 0.01]).

Forty-two percent (27) of patients reported experiencing a post-discharge problem. These 27 patients reported 42 distinct problems, each of which fell into 1 of 5 broad categories (Table 2). The most common of these were patients having difficulty obtaining follow-up tests or appointments. These patients either had delay in getting, or were unable to get, follow-up appointments, or follow-up tests and test results. There were also many patients who needed reevaluation and thus, were either readmitted to the hospital or had to return to the Emergency Department. Another major category was those who had problems getting medication or therapy. For example, “*one of (the patients) treatment meds. . .was very hard to find and it delayed us giving her her meds*”. Others reported they were not properly prepared for discharge. Most of these patients did not receive proper discharge materials which then caused other issues. As one proxy reported, “*The services were supposed to be provided for (the patient) through her social worker, no one has been informed to her being discharged or her being sent home. We*

TABLE 2. Categories of Patient-Reported Events in Care Transition Experience, With Representative Quotes

Category (n)	Sub-Category (n)	Representative Incident (Patient)
Difficulty obtaining follow-up (12)	Appointment issues (8)	<i>"I had an earlier (follow-up appointment) with (my PCP) but by me staying at my daughter's I didn't have access to a car."</i>
	Test issues (4)	<i>"I was in a very weakened state, so I was scared to get on the bus by myself (for the appointment for the chest x-ray)...I'm going to try (to reschedule), because I can't seem to get the phone number."</i>
Needed re-evaluation (10)	Readmission (7)	<i>"They let me come home, and then that morning they said when I got my house I was on the floor. And so that's why I had to go back to the hospital."</i>
	Return to ER or clinic (3)	<i>"I went back to the emergency room after a few weeks of course."</i>
Problems getting treatments (8)	Medication (7)	<i>"I had problems getting my medications because they tell me that the medication was so high, but anyway, I didn't get some of my medications."</i>
	Therapy (1)	<i>"I gave (my insurance company) the information... sent the information they wanted to them and we thought everything was settled...we wasn't having any problems until I got hospitalized and came home and started trying to get my oxygen."</i>
Not prepared for discharge (8)	Discharge material issues (6)	<i>"I needed a copy of his discharge papers from the hospital for insurance purposes...They didn't give me a discharge paper."</i>
	Not ready to go home (2)	<i>"I told them I wasn't ready to leave, they told me I had to go."</i>
Ongoing problem or question after hospitalization (4)	Post-procedural problem (3)	<i>"Now they're finding out all this bleeding but they don't know where I'm bleeding from."</i>
	Diagnosis questions (1)	<i>"I was diagnosed...a long time ago and I went 8 years with this death sentence hanging over my head...she ran a battery of tests and they all came up negative...now they're coming up with the fact that I do have hepatitis C."</i>

Abbreviations: ER, emergency room; PCP, primary care physician.

TABLE 3. Patient Perceptions of Communication

Category (n)	Sub-Category (n)	Representative Incident (Patient)
Patient Perceptions of inpatient physician communication with PCP (80)	Uncertainty or confusion about the communication (63)	<i>"I don't know if they spoke to each other over the phone or if they had any kind of communication."</i>
	Assumption of good communication (24)	<i>"Well I thought by me going to the hospital the doctors would let them know I was there because they all doctors."</i>
	Obligation to communicate with PCP (16)	<i>"I think they should because there are two doctors who are attending me and they should have communication with each other."</i>

NOTE: n represents number of incidences/quotations.

Abbreviation: PCP, primary care physician.

have not gotten any services." Lastly, a few patients reported having hospital complications, such as post-procedural complications, or questions, such as diagnosis questions.

Patients were often uncertain of whether and how communication between the inpatient physician and PCP (Table 3) took place. One patient said, *"I don't know what the procedure is as far as giving him the message. Does she fax it to him? I don't know... She told me that she was going to call and inform him on everything that happened. I don't know anything from there."* The second most commonly expressed perception was from patients who assumed good communication had taken place between his or her physicians. This assumption was grounded in a belief that good communication naturally occurred between physicians. For example 1 patient expressed: *"(doctors) let the other doctors in too. That's the way to take care of stuff."* Lastly, many patients expressed the feeling that their physicians were obligated to communi-

cate with each other. As 1 patient reported, *"I think that they should have let (my PCP) know that I was in the hospital."*

Two new themes emerged from the inductive analysis (Table 4). Forty-five percent of patients reported experiencing negative emotions. These negative emotions were most often expressed as frustration or confusion. For example, 1 patient expressed confusion by saying, *"When I usually have lab work done I have prescription signed...maybe they changed the way of doing it. Now the pharmacy called me. But I'm supposed to have a note or something"*. Patients who reported a post-discharge problem were more likely to report negative emotions (67% vs. 26%, $P < 0.01$). Feelings of empowerment were reported by 31% of patients. Empowerment was expressed most often as the patient being proactive in communicating with the PCP. One patient reported, *"We informed (my PCP)... and we filled in all of the information that we wanted him to know about"*.

TABLE 4. Categories of Patient Reported Feelings in Care Transition Experience

Category (n)	Sub-Category (n)	Representative Incident (Patient)
Negative emotions (43)	Frustration (28)	<i>"...you don't have any decision in your own healthcare at all. I think that's terrible." "there were all sorts of other tests that different doctors whom I never even knew why they wanted to do these things."</i>
	Confusion (15)	
Patient empowerment (24)	Patient proactive in physician communication (19)	<i>"I made certain that everybody let (PCP) know exactly what I was doing the whole time I was in and out and all of that" (63457) "I took it upon myself to call (PCP)."</i>
	Has a third party advocate (8)	<i>"The only reason [home follow-up services] found out is because her nurse was concerned enough to call and keep inquiring about how she was doing."</i>
	Patient proactive in his or her own healthcare (5)	<i>"I am not scared of the doctors and scared to speak up, especially when it comes to my body and my health."</i>

NOTE: n represents number of incidences/quotations.

Abbreviation: PCP, primary care physician.

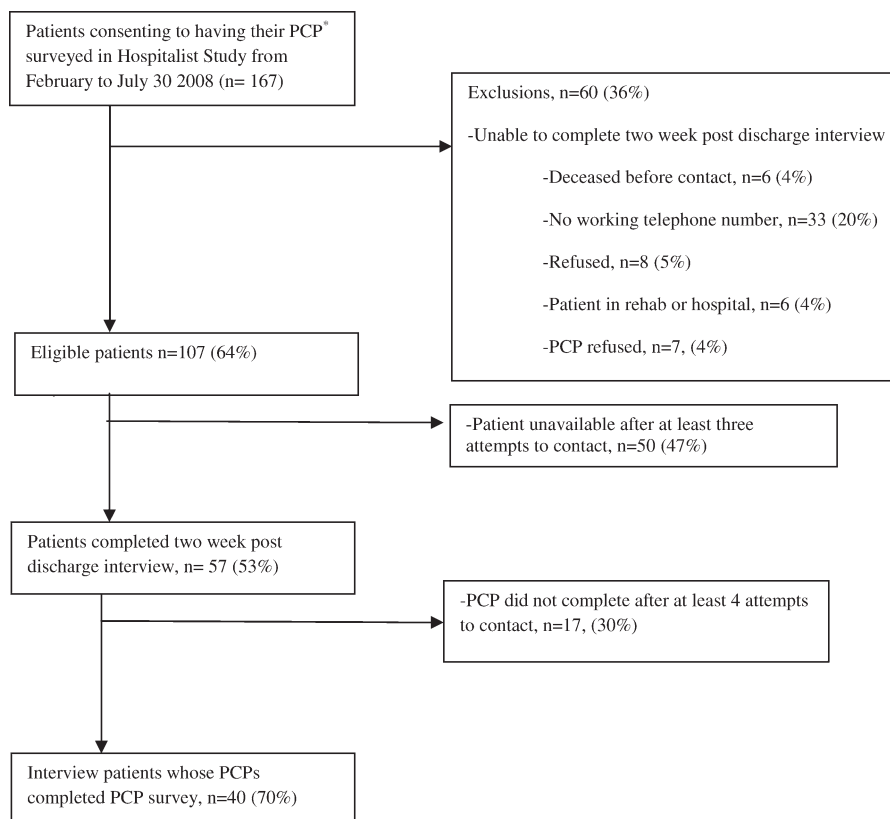


FIGURE 1. Enrollment methods: every 10th patient admitted to University of Chicago is asked to consent to contacting their PCP as part of a large ongoing study of quality of care. Because we were interested in oversampling frail older patients, those patients that were screened as frail using the Vulnerable Elder Survey-13 during the inpatient interview were also asked to consent to contact their PCP.

Empowerment was also expressed as being proactive in advocating for communication between the inpatient team and the PCP (Table 3). Some patients expressed feeling empowered through the support of a third party, such as a home nurse. In addition, patients who have a third party advocate are more likely to report being empowered. Empowerment was expressed by 26% of patients with no third party advocate compared with 71% of patients with a third party advocate ($P = 0.02$).

From our sample of patients who completed a 2-week post-discharge interview, we were able to obtain PCP surveys for 40 (63%) of these patients (Figure 1). Thirty percent (12) of PCPs reported being unaware of the hospitalization. In all but 4 cases, PCPs had communicated with the medical team during hospitalization. Examining the association between PCP knowledge and patient reported post-discharge problems showed that patients whose PCPs were not aware of the hospitalization were 2 times more likely to

report a post-discharge problem. A post-discharge problem was reported by 67% of patients whose PCP was not aware of the hospitalization, while a post-discharge problem was reported by 32% of patients whose PCP was aware ($P < 0.05$). Six patients reported returning to the ED or being readmitted. Four patients (33%) of PCPs who were unaware of hospitalization reported returning for reevaluation whereas 7% ($n = 2$) of patients whose PCP was aware of hospitalization reported returning for evaluation ($P = 0.055$). Interestingly, patients whose PCPs were not aware of the hospitalization reported feeling more empowered (58%) than those patients whose PCP were aware of the hospitalization (21%, $P = 0.03$). Because of possible confounding (patient report of problems post-discharge problems may be affected by PCP awareness of hospitalization), we examined whether patients whose PCPs were aware of their hospitalization differed from those that did not. Patients whose PCPs were aware of their hospitalization were often older (75 vs. 69 years old), white (80% white vs. 65% nonwhite) and female (75% female vs. 54% male). While this small sample size prohibits examining for statistical significance, the magnitude of these differences suggests the need for a larger study to examine patient predictors of PCP awareness of hospitalization.

Discussion

In this sample of frail, older hospitalized patients, nearly half reported at least 1 post-discharge problem. Most patients have perceptions of what communication did or did not take place between their physicians. While most do not understand the communication process, many expect good communication to occur, and feel that physicians are obligated to communicate with each other. However, patients' perceptions of communication highlight that patient expectations are far from the actual practice in some cases. Nearly half of patients reported feeling negative emotions, such as confusion and frustration, and patients were more likely to experience negative emotions when they also reported a post-discharge problem. One-third of patients reported feeling empowered. Empowerment was associated with having a third party who helped advocate for them. Paradoxically, patients whose PCP were not aware of their hospitalization were more likely to feel empowered. Lastly, more patients reported a post-discharge problem when their PCP was not aware of the hospitalization.

Because this is predominantly a qualitative observational study, it is important to consider the mechanism for these findings since we cannot assume causal relationships. The association of negative emotions, like confusion and frustration, with post-discharge problems could be explained due to additional stress of the problem itself or that a distressed frame of mind is associated with reporting more problems that may have been overlooked otherwise. In addition, the association between patient empowerment and lack of PCP awareness could be due to the fact that patients are forced to assume a more proactive role in contacting their PCP if they

feel that their PCP was not aware. It is equally possible that PCP communication is selectively initiated by hospital physicians when the patients are least empowered. For example, our comparison of demographics for patients whose PCP was aware versus those that were not do suggest that patient characteristics might play a role in whether a patient's PCP is contacted. The association between a third party advocate and patient empowerment is likely explained as the third party is able to keep the patient informed and empowered.

This study has implications for efforts to design a more patient-centered care transition for hospitalized older patients. First, patients and their proxies should be advocates for good communication to avoid the risks of care transitions. Prior interventions such as use of "coaches" to boost patient empowerment have had positive results for hospitalized older patients. Moreover, hospitals should keep in mind that problems after discharge are common and are linked to negative emotions, which may lower patient satisfaction or increase liability risk. Similarly, these findings also highlight the importance of keeping PCPs aware of patient hospitalization. For example, PCPs that are aware of hospitalization are better prepared to properly follow-up on medications, tests, and appointments. The PCP can also help to better prepare the patient for discharge and ease the transition for the patient.

There are several limitations to our study. First and foremost, our small sample size limits our ability to examine statistical significance. This study was part of a short planning grant to design interventions to improve communication with PCPs during hospitalization. Efforts are currently underway to design a communication solution and educational intervention to highlight the importance of contacting PCPs during hospitalization. Because these patients were hospitalized on the teaching service, the resident with the guidance of the teaching attending is responsible for communicating with the PCP. The teaching attending was either a generalist, hospitalist, or specialist who routinely had no a priori relationship with patients prior to the hospitalization. Only 53% of patients were reached by telephone which raises the concern for nonresponse bias. Our low response rate highlights the challenge of doing this type of work with recently discharge patients in low income, underserved areas. In comparing responders and nonresponders, the only difference between the 2 groups was that responders were more likely to be older. One possible reason for this difference may be that older people are more likely to be at home and easier to contact over the phone. Similarly, since data were collected through interviews and adverse events were discussed, these results are subject to recall bias. Efforts were made to reduce this by calling within 2 to 3 weeks after discharge. Lastly, these findings are limited by generalizability. All the patients included in this study were from the University of Chicago Medical Center, which serves largely underserved, African American patients. The experiences of these patients may be unique to this site. In addition, we only studied patients who had a PCP, excluding a population of patients that are at inherent risk due to lack of a coordinating physician to guide ongoing care.

In conclusion, this study suggests that many frail, older patients reported experiencing a post-discharge problem and patients whose PCPs did not know about their admission were more likely to report a post-discharge problem. Systematic interventions to improve communications with PCPs during patient care transitions in and out of the hospital are needed.

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