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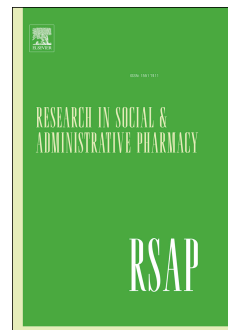
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Title: Transitions of Care: Medication-Related Barriers Identified by Low Socioeconomic Patients of a Federally Qualified Health Center Following Hospital Discharge

Running Title: FQHC Med Barriers

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Introduction

Many healthcare institutions are currently facing the challenge of developing innovative ways to reduce patient readmission rates following the implementation of the 2012 Centers for Medicare and Medicaid readmission penalty.¹ In 2013, for the first year of the program, CMS charged a total of \$280 million in readmission penalties to 2,213 hospitals.² This penalty has led to the widespread adoption of institution-specific transitional care programs, which utilize a broad scope of clinicians to improve discharge processes.²⁻⁴ Healthcare providers including physicians, physician's assistants, nurse practitioners, clinical nurses, and pharmacists have all been shown to play beneficial roles in reducing patient readmissions through a variety of interventions both before and after discharge.⁵⁻¹⁰

Perceived barriers to transitions of care from the perspective of such providers have been extensively addressed in the literature.¹¹⁻¹⁵ There is less data on the *patient's* insight surrounding the difficulty of the discharge process and remaining healthy outside of the hospital.¹⁶⁻¹⁹ Although patients of low socio-economic status (SES) are known to be at particularly high risk for hospital readmissions due to pre-existing health disparities, the literature is especially sparse on the factors that drive such poor outcomes for these patients.²⁰⁻²³ This is likely due to the difficulty, real or perceived, in following up with patients who may be dealing with complex social issues (e.g. – obtaining stable housing) after leaving the hospital. The purpose of this study is to describe such barriers as they relate to medication access, use, and adherence in an effort to improve the transitions of care process for practices serving primarily low SES populations.

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Methods

In order to understand patient perspectives, a qualitative study using semi-structured interviews of recently discharged patients between January and June 2015 was performed. The study was approved by the institutional review board at the University of Pittsburgh Medical Center.

Setting

The UPMC health system, based in Pittsburgh, Pennsylvania, operates more than 20 academic, community, and specialty hospitals, more than 500 outpatient offices, and employs 3,500 physicians throughout western Pennsylvania. UPMC is unique in that it has created an integrated care and delivery finance system by offering its' own commercial health plan. This research study took place at the UPMC Matilda Theiss Health Center (MTHC), the only federally qualified health center (FQHC) under the administration of the UPMC health care system. MTHC is one of few places in the city of Pittsburgh where uninsured individuals can receive primary care.

MTHC is located in a public/private housing program supported in part by the city of Pittsburgh. While the clinic staff can't regulate what happens to the patient outside of the office, a full-time staff of physicians, nurses, social workers, clinical pharmacists, and community organizers are employed and work with the patients to reduce socioeconomic constraints as much as possible. They will also assist patients to locate stable living situations or rehabilitation centers as needed. While the perspective of low SES patients has previously been investigated for those still in the hospital or randomly within the community following discharge²⁴⁻²⁵, MTHC

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offers a unique opportunity to evaluate the barriers for low SES patients of a community health center located within the neighborhood and linked to their discharging institution.

This practice utilizes several distinctive resources to optimize medication management in alignment with the National Committee for Quality Assurance (NCQA) Patient Centered Medical Home (PCMH) 2011 standards.²⁶ MTHC is the recipient of a Health Resources and Services Administration (HRSA) grant which allows eligible patients to access both medical care and medications for an income-based, sliding scale fee.²⁷ The on-site clinical pharmacists work to provide medication education, as well as assist physicians in designing evidence-based, fiscally responsible drug regimens. In conjunction with the pharmacy team, the social worker also identifies opportunities to use patient assistance programs offered by pharmaceutical companies for uninsured patients.

Due to the significant burden of resources directed towards medication management at this practice, the specific objective of this study was to classify barriers for recently discharged patients of an FQHC surrounding medication access, use, and adherence. At the time of the study, approximately 1600 patients were receiving care from the health center. Of these, 30% were uninsured, 60% were insured by Medicare and/or Medicaid, and the remainder were insured privately.

Participant Recruitment

To be eligible for the study, participants must have identified a physician from the MTHC as their primary care physician and been discharged to home from a hospital admission within the past 30 days. Participants were excluded if less than 18 years old, admitted to a psychiatric institution, discharged from the hospital on the same day as admission (ie. outpatient

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surgery), discharged to a skilled nursing facility or rehabilitation center, discharged to a palliative care service, or considered to lack capacity. Additionally, the research opportunity was extended only to English-speaking subjects due to language limitations of the interviewer.

Potential participants were identified through daily review of discharge sheets provided by the UPMC health network to the MTHC. Patients were reviewed by a member of the research team, and those deemed eligible for the study were contacted via telephone seven days post-discharge. Subjects who agreed to the research participated in a semi-structured, open-ended interview which took place at the subject's home, the MTHC, or over the telephone at the subject's convenience.

Data Collection

The interviews were conducted over a four-month period by two female members of the research team. Interviews were audio-recorded, but no full names were used. Only subject code numbers were used to identify participants. Participants were given the choice for the interview to occur at their home, at MTHC, or over the telephone. Only one interviewer was present for each session.

Prior to the interview, participants were asked to fill out a demographic survey which included questions regarding socioeconomic status and health care utilization. Based on previously available literature regarding transitions of care complications¹⁶⁻²³, the research team collaborated to create an interview guide which listed specific, open-ended questions and topics to be probed in a particular order (Table 1). Additionally, previously validated questionnaires for measuring patient medication adherence were reviewed for themes which the interview guide should explore.²⁸ Participants were asked to tell their story in their own words. The interview

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guide was piloted for ease of comprehensibility with one patient whose transcript was not included in the final analysis.

Data Analysis

Interviews were transcribed verbatim in Microsoft Word and transcripts were verified with other members of the research committee to ensure accuracy. An inductive, qualitative content analysis was used, utilizing the interview transcripts as the unit of analysis. Open coding was performed by the same two members of the research team through simultaneous reading of each transcript as it was completed to determine preliminary codes which emerged from the text. The remaining transcripts were then coded together in this manner, and new codes were added as data which did not fit a pre-existing code was encountered. Data analysis was conducted simultaneously with interviewing to identify a point of saturation. The larger research team then met to group similar codes into categories, which were grouped and revised until the final categories were determined to be mutually exclusive.

Results

A total of 12 participants completed interviews. Demographics are reported in Table 2. Thematic analysis from transcriptions identified four themes on medication access, adherence, and use during the discharge and post-hospital transition (Table 3).

Team Assumptions

Participants conveyed the frequent occurrence of assumptions on the part of the discharging team and ancillary services around the patient's ability to access medications in a timely manner, often resulting in delays in care. For example, a mail order pharmacy assumed

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the patient would be home to sign for the package from the mail carrier: “They [the pharmacy] guaranteed me that they would get it [Lovenox] shipped out before the weekend...and that’s why I went to work on Friday...UPS [United Parcel Service] showed up, since they needed the signature they took it back. Well, that’s when on Saturday, I figure, well, I’m out of this Lovenox, I’d better do something.” Additionally, prescribers assumed the patient’s usual pharmacy would be adequate for the patient to obtain medications from, although in the case of mail order pharmacies, this again proved to make obtaining critical medications difficult: “I use [mail order pharmacy], but I couldn't wait for [mail order pharmacy] to send them in the mail...I can’t go days and days without pain medication.”

Participants also described assumptions by the discharging team in regards to the transportation, social support, and time available to them. Several participants offered explanations in support of this, saying “They were well aware that I lived alone...and would have no one to pick the medication up,” and “What they didn’t do is understand all of what I would need...that physically I’m unable to get to a pharmacy.”

Finally, assumptions regarding the patient’s ability to understand changes to their medication led to a lack of education and counseling, which negatively impacted adherence. This caused one individual to discontinue nearly all her medications once arriving home after bariatric surgery: “I can’t take pills and everything that they’ve given me is liquid and common sense tells me, you know, they must not want pills in my stomach.” Another reported, “They wanted to change my insulin back to the old one...well I’m not sure they did, but they gave me a refill for the old medication [insulin] that I didn't take anymore.” Rarely did individuals report a discharge counseling session lasting longer than 10-15 minutes.

Care Coordination (Patient assumptions)

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A perceived lack of communication between the hospital and the MTHC (which utilizes hospitalist services to care for inpatients) was repeatedly expressed as a source of frustration. As the MTHC is considered to be part of the hospital system, patients assumed that all information from their electronic health record would be accessible to both parties: “During the course of my stay there, they asked me about medications I was taking, which to me was dumb as hell because they oughta be able to look in their own system and understand exactly what I take.” Insufficient cross-over between the EHRs used in the outpatient and inpatient settings can lead to errors in medication reconciliation which persist well into the post-hospital transition if not identified. Another individual described how the communication between the pharmacy and physician in the post-discharge period could have been improved by utilizing a team approach: “That was the most frustrating part of this whole ideal. Was the medication end. It was like nobody was on the same page.”

A sense of betrayal was portrayed by participants who perceived their primary care physician to be under performing in their expected capacity as the “gatekeeper to health.” One individual explained, “The reason they call primary is primary means first....The first point of contact...So you’re the people who most know about me and so there should’ve been communication between the two doctors [hospitalist and PCP] and I should’ve known about it [the opinion of my PCP].” Individuals additionally differed in their expectations of who should be the one to reach out following discharge. While some individuals felt it was entirely their responsibility to notify the MTHC of their hospitalization and schedule a follow-up appointment, one participant stated, “I expected you to know that I was in there. The doctor didn’t even contact me until the next day or two days later...after I left.”

Disconnect Leads to Disengagement

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Participants internalized both verbal and non-verbal cues from the health care workers who participated in their hospitalization, discharge, and post-hospital transition. When negative, these interactions can cause patients to disengage from the health care system. The most commonly described experience was a sense that the health care system lacks accountability to patients by being unable to accept responsibility for mistakes or perceptions of deliberately attempting to hide errors: “I guess they figured I was going to sue them. If I had a lawyer, I would have sued, you know? They was all scared, I can tell.” Another participant explained, “I was sort of upset that nobody seemed to want to take credit for that UPS [United Parcel Service] screw up, but that’s the way the world is these days. Nobody wants to take responsibility for screw ups.”

Participants related a sense of feeling uncared for in response to inappropriate or insensitive interactions with healthcare workers. This often occurred as a result of unmet patient expectations around the role of the healthcare team: “No. No. They should’ve done that [scheduled a post-discharge appointment] while I was in the hospital. They should - they should be making it more convenient for me. I’m sick. They’re not sick.” It is important for healthcare workers to note that all professions are able to impact the patient’s discharge experience for better or worse. One participant, who felt as if she had been discharged home under unsafe conditions, explained, “That was my problem...not with the doctor, but with the physical therapist [who] was so insensitive not to even know how, you know, where I live or what kind of conditions existed where I lived for me to be able to do the things that I would need to do in order to even get inside my house.”

Personal Contact

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Over the previous year, an automated phone messaging system was installed at the MTHC to direct patients to the appropriate contact person within the office (ie: scheduling, pharmacy, nursing, etc). While intended to streamline communication, participants frequently cited the inability to speak immediately and directly with an office employee as a barrier to follow-up care during the post-hospital period: “That is a lot of machines on y’ all side. I was shocked when I got you on the phone. I was really shocked, like what? A human being?”

This impacted access to care by preventing participants from being able to schedule follow-up appointments in a timely manner. One participant stated, “I was going to call in to make the appointment cause the last few times I’ve tried to make the appointment I was on hold, I was put on hold...the first time for 45 minutes. The second time I don’t know how long...and then it said please try your call later.” Another patient who lives in the neighborhood explained, “It’s difficult to get someone on the phone, it’s better to walk over.”

Discussion

In this qualitative study of primarily low-SES patients at an FQHC, several barriers related to optimal medication access, use, and adherence during the post-hospital transition were identified. It was clear during the interviews that participants expected the MTHC to play an active role in both their hospitalization and transition process. Additionally, unmet patient expectations pertaining to the role of health care workers and communication between team members affected participant’s ability to access medications during discharge. Such experiences caused participants to become frustrated and disengaged as they become skeptical of the system’s ability to keep them healthy.

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While the lack of communication between hospital and PCP can be disappointing to patients, it is not uncommon. One study reported PCPs to be unaware of their patients' hospitalizations as much as 70% of the time.²⁹ Although the MTHC is unique in that it is able to generate a daily report of patients discharged from an affiliated institution, sufficient communication between the hospital and PCP was shown to remain a challenge.

Patients frequently assume the PCP will be responsible for their care should they become hospitalized, however, the use of hospitalists to care for inpatients has become increasingly prevalent over the last number of years. Due to increased workload within their own practices, many PCPs no longer have the time or ability to care for their patients both in and out of the hospital. A survey of PCPs reported that 70% of practices had at least one hospitalized patient seen by a hospitalist in the past year, and over 30% had used a hospitalist to care for more than three-quarters of their hospitalized patients.³⁰ While there are certainly upsides to the use of hospitalists to provide inpatient services, care coordination is perhaps the biggest downfall. One study reported direct communication between PCPs and hospitalists occurred only 23% of the time and discharge summaries were available to the PCP only 42% of the time.³¹ Inadequate care coordination can potentially lead to missed test results, medication errors, and patient harm.

One way to prevent patients from being disappointed or discouraged at the lack of communication between the hospital, PCP, and patient is to set clear expectations at the practice prior to a hospitalization occurring. If patients are already aware that a hospitalist will be in charge of their care in case of an admission, and the roles for each party are clearly defined in terms of responsibility for communication, the workflow during inpatient stays may provide less of a shock to hospitalized patients.

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Timely post-discharge follow-up with a PCP is critical for identifying issues with medication access, use, or adherence, and for preventing re-admissions. One study reported that patients who did not have a follow-up appointment with a PCP within 30 days of discharge had a ten-fold higher risk of being readmitted to the hospital. Uninsured patients were found to be particularly vulnerable as 70% of such individuals did not have timely PCP follow-up, in contrast to only 44% of those who had insurance going without an office visit.³²

While inadequate coordination of care and lack of provider follow-up often impact medication use and adherence, multiple barriers to medication access were also identified during our study. Factors which negatively impacted medication access were use of pharmacy delivery services, the need to use multiple pharmacies, financial costs, inability to contact prescriber, and lack of medication awareness due to inadequate discharge counseling. While the use of delivery services has been shown to improve adherence of chronic medications over time,³³⁻³⁴ patients and their families should be encouraged to utilize other types of pharmacy services for medications needed at discharge to prevent delay in therapy. Optimally, patients would be able to access an adequate supply of all necessary medications from one pharmacy location prior to or immediately following discharge.

Hospital discharge teams can help improve medication access, and therefore adherence, by making it a point to assess the patient's plan to obtain medications after leaving the hospital. This is particularly important for low-SES patient populations, who have special vulnerabilities beyond the needs of the average patient. Specific challenges may include low health literacy, financial constraints, lack of transportation, limited social support, unstable housing, and stress. All of these factors may greatly impact an individual's ability to access medications in a timely manner. Ensuring patient's medications have been reconciled at discharge, adequate education

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has been provided on medication changes, and prescriptions for all medications/supplies have been sent to the most convenient pharmacy will cut down on the time spent resolving issues later on, in addition to preventing medication errors and frustration for the entire team.

It is critical for all individuals involved in the care of such patients to be mindful of their role in fostering patient engagement. Being respectful and transparent with our patients, initiating open lines of dialogue, and spending adequate time addressing the specific needs of low-SES patients may increase their desire to speak up or reach out when issues do arise.

Limitations

Certain underserved populations were likely excluded by our study methodology, including those without access to a telephone or unable to speak English. The demographic information for this study also indicates a very specific cohort of primarily African-American females. Such limitations are expected for qualitative research, which by nature focuses on the experiences and perceptions of the population included.

Only one site was selected for identification of participants based on the investigator's familiarity with this location. Previous experience at this site may have led to assumptions and biases, both in the creation of the semi-structured interview guide and during the interviews. Additionally, the two investigators responsible for coding were 1) a pharmacy resident, and 2) a student pharmacist. As both investigators are relatively early within their training, they may have interpreted the data differently than a more seasoned practitioner would have.

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Conclusion

Inadequate communication between patients and providers may be the primary driver behind barriers to medication access and adherence in low SES patients during the discharge and post-hospital transition periods as perceived by the study population at this urban FQHC.

Respectful and engaging healthcare teams, who are mindful of the health disparities affecting this population, are necessary to optimize medication use during the transitions of care process.

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Table 1. Semi-Structured Interview Guide Topics and Sample Questions

Topic	Sample Question
Medication education at discharge	“What were you told about your medications when leaving the hospital?”
Accessing medication post-discharge	“What made it difficult to get the medications and medical supplies you may have needed after discharge?”
Managing medications at home	“Since you’ve been home, how have you been remembering to take your medications?”
Medication beliefs	“What do you think about taking these medications long-term?”
Barriers to best use of medications	“What kinds of things make it hard to take your medications the way you are supposed to?”
Communication between hospital and FQHC	“What did you expect MTHC to know about your time in the hospital?”
Provider follow-up	“What was your communication with the MTHC like after leaving the hospital?”

FQHC = Federally Qualified Health Center; MTHC = Matilda Theiss Health Center

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Table 2. Participant Demographics (N=12)

Demographic	
Female <i>n</i> (%)	10 (83%)
Age:	
45-55 years <i>n</i> (%)	1 (8%)
56-65 years <i>n</i> (%)	9 (75%)
>65 years <i>n</i> (%)	2 (17%)
Race	
African-American <i>n</i> (%)	10 (83%)
White <i>n</i> (%)	2 (17%)
Highest Level of Education:	
High School Diploma <i>n</i> (%)	6 (50%)
Associate Degree or higher <i>n</i> (%)	6 (50%)
Living alone <i>n</i> (%)	6 (50%)
Employed <i>n</i> (%)	2 (17%)
Annual income <i>mean</i> (range)*	\$12,663 (\$0-\$24,000)
Insurance	
None	2 (17%)
Medicaid	3 (25%)
Medicare	3 (25%)
Private	4 (33%)
Hospital admits in past year <i>mean</i> (range)	2.1 (1-6)
ED visits in past year <i>mean</i> (range)	2.1 (0-7)
Living >10 miles from FHC <i>n</i> (%)	3 (25%)
Prescribed \geq 10 medications <i>n</i> (%)	7 (58%)

*8/12 patients provided an answer

Table 3. Representative Quotes of Common Themes

Theme	Representative Quote
Team assumptions regarding patient plans to access or appropriately use discharge medications negatively impact adherence	“I can’t take pills and everything that they’ve given me is liquid and common sense tells me, you know, they must not want pills in my stomach”
Unmet expectation for care coordination between PCP and hospital	“During the course of my stay there, they asked me about medications I was taking, which to me was dumb as hell because they ought to be able to look in their own system and understand exactly what I take.”
Disconnect between patients and health care workers leads to disengagement	“No. No. They should’ve done that while I was in the hospital. They should - they should be making it more convenient for me. I’m sick. They’re not sick.”
Lack of personal contact hinders access to services	“That is a lot of machines on y’all side. I was shocked when I got you on the phone. I was really shocked, like what? A human being?”

PCP = Primary Care Physician

Summary

This article describes a qualitative research study using a semi-structured interview process to describe barriers surrounding medication access, use, and adherence for recently discharged patients of a federally qualified health center. Common themes which emerged were: 1) Team assumptions regarding patient plans to access or appropriately use discharge medications negatively impact adherence; 2) Unmet expectation for care coordination between primary care physician (PCP) and hospital; 3) Disconnect between patients and health care workers leads to disengagement; and 4) Lack of personal contact hinders access to services.