Reasons for Readmission in a High-Risk Population

Journal:	*BMJ Open*
Manuscript ID:	bmjopen-2013-003212
Article Type:	Research
Date Submitted by the Author:	13-May-2013
Complete List of Authors:	Long, Theodore; Yale School of Medicine, Internal Medicine Genao, Inginia; Yale University School of Medicine, Internal Medicine Horwitz, Leora; Yale University School of Medicine, Internal Medicine
Primary Subject Heading:	Qualitative research
Secondary Subject Heading:	Health services research, Communication, General practice / Family practice
Keywords:	Quality in health care < HEALTH SERVICES ADMINISTRATION & MANAGEMENT, PRIMARY CARE, QUALITATIVE RESEARCH

Title: Reasons for Readmission in a High-Risk Population

Authors: Theodore Long, MD;[1] Inginia Genao, MD;[2] Leora I. Horwitz, MD, MHS[2,3]

Running Title: High-Risk Readmissions

Author affiliations:

[1]Internal Medicine Residency Program, Department of Internal Medicine, Yale School of Medicine, New Haven, CT

[2]Section of General Internal Medicine, Department of Internal Medicine, Yale School of Medicine, New Haven, CT

[3]Center for Outcomes Research and Evaluation, Yale-New Haven Hospital, New Haven, CT

Corresponding author:
Theodore Long, MD
Yale Traditional Internal Medicine Residency Training Program
PO Box 208030
New Haven, CT 06520-8030
Tel: (203) 785-4123
Fax: (203) 785-7258
theodore.long@yale.edu

Word count: 3000

Tables: 1

Figures: 0

References: 22

Word count (abstract): 214

Key words: access to care, care transitions, underserved populations, qualitative research, primary care

Abstract

Objective: To gather qualitative data to elucidate the reasons for readmissions in a high-risk population of underserved patients.

Design: We created an instrument with 27 open-ended questions based on current interventions.

Setting: Yale-New Haven Hospital.

Patients: Patients at the Yale Adult Primary Care Center (PCC).

Measurements: We conducted semi-structured qualitative interviews of patients who had four or more admissions in the previous six months and were currently readmitted to the hospital.

Results: We completed 17 interviews and identified themes relating to risk of readmission. We found that patients went directly to the Emergency Department (ED) when they experienced a change in health status without contacting their primary provider. Reasons for this included poor telephone or urgent care access and the belief that the PCC could not treat acute illness. Many patients could not name their primary provider. Conversely, every patient except one reported being able to obtain medications without undue financial burden, and every patient reported receiving adequate home care services.

Conclusions: These high-risk patients were receiving the formal services that they needed, but were making the decision to go to the ED because of inadequate access to care and fragmented primary care relationships. Formal transitional care services are unlikely to be adequate in reducing readmissions without also addressing primary care access and continuity.

Article Summary

Article Focus:

- We asked the question of what unique factors were contributing to readmissions in a high-risk urban underserved population
- We explored patient perceptions of areas of current interventions, including home services, medications, and transportation
- We propose interventions based on our findings, and compare our results to other studies looking at readmissions

Key Messages:

- We found that there are factors contributing to readmissions that are not addressed by current intervention strategies
- In our high-risk population, there was a lack of primary care relationship and a tendency to delay seeking care that resulted in patients triaging themselves to the Emergency Department

Strengths and Limitations of this Study:

- Limitations include this being a single site study with a focus on patients at the highest risk of readmission; thus findings may not be comparable to other populations
- Strengths include elucidating the perspectives of an underrepresented population of patients and defining key areas for intervention in this population

Introduction

Hospital readmissions represent a significant cost to the healthcare system and are a burden to patients. Nationally, 19.6% of Medicare beneficiaries discharged from the hospital are readmitted within 30 days and 34.0% are readmitted within 90 days.[1] Many attempts have been made to identify and address the issues leading to readmission. However, no single strategy has been found to reproducibly reduce readmissions.[2] Most studies evaluating this problem have focused on chart review and administrative data, but there is a paucity of qualitative information from the perspectives of patients.[3] It has been unclear what happens to patients once they are discharged from the hospital, and what elements of their outpatient health care are inadequate in preventing hospital readmissions.

This study examined patient experiences after hospital discharge by conducting qualitative interviews of high-risk patients during readmission. We studied the urban underserved population of patients at Yale-New Haven Hospital (YNHH) with the highest incidence of readmission. We chose to assess this population because the urban underserved comprise a disproportionate share of readmissions at many academic medical centers.[4-7] Furthermore, patients with low socioeconomic status have been shown to have a distinctly challenging experience transitioning from inpatient admission to home.[8]

We sought to understand the perspectives of underserved patients at the highest risk of readmission in order to determine how future interventions could be more effective for this population. We examined their transition of care from the hospital to home, focusing on how they interacted with the health system once they left the hospital and what factors drove them to be readmitted so frequently.

Methods

Setting

We focused our study on the underserved population at YNHH, a 966 bed urban academic medical center. We interviewed patients cared for at the Yale Adult Primary Care Center (PCC), which is a hospital-based clinic serving primarily the low-income residents of New Haven.

Study Cohort

Our study population was comprised of PCC patients with four or more admissions in the past six months, which is one of YNHH's criteria for high risk. At the time of this study, less than 150 patients at YNHH met this high-risk criterion, and of these 25% were PCC patients. We arranged for our medical record system to send a daily email listing all patients designated as high-risk currently admitted at YNHH. The criteria for this designation are either four or more admissions in the past six months or a diagnosis of heart failure. From the daily list, we identified all patients who had an established primary care provider in the PCC as well as at least two completed clinic notes from the prior 12 months. We set out the requirement for at least two clinic notes to ensure that enrolled patients were actively followed by the PCC. We then restricted this group to patients who were currently readmitted within 30 days of their last date of discharge from YNHH. We conducted the study from October, 2011 to April, 2012. Twenty-one eligible patients were identified during the study period, and four declined.

Design

We created an instrument with 27 open-ended questions based on areas targeted by current interventions as well as other qualitative studies looking at readmissions.[3,9] The instrument was then revised based on pilot interviews and feedback. The final questions in the instrument included the areas of transportation, support systems, medications, formal services, health literacy, access to care, relationship with provider, communication with providers, and transitions of care (see Appendix 1 for list of questions). We also included screening for depression via the Patient Health Questionnaire-2 (PHQ-2)[10] and for unhealthy alcohol use via the National Institute on Alcohol Abuse and Alcoholism (NIAAA) recommended tool.[11] The IRB waived the written consent requirement due to the fact that no identifying information was used. Informed consent was obtained verbally from all study participants. One investigator (T.L.) conducted semi-structured interviews. The interviews were recorded and then transcribed by a subcontracted transcriber.

Analysis

Three investigators (T.L., I.G., L.H.) independently generated codes from the primary transcriptions. The codes represented themes found in the data. The investigators initially coded the first four transcriptions independently and then reviewed the coding scheme and resolved discrepancies collaboratively. This process was repeated two more times, with all transcriptions being coded independently and then meeting to come to a group consensus. A final code list was developed using the constant comparative method.[12] The codes were organized into 11 main themes.

Results

We completed 17 interviews (11 women, 6 men). Every patient except one screened negative for unhealthy alcohol use per the NIAAA tool and 47% had a positive screen for depression per the PHQ-2. We identified 11 themes (Table 1), and describe five relating to risk of readmission: lack of primary care relationship, self triage, formal services, informal support systems, access to care. Overall, we found that while patients described receiving adequate formal services, barriers in accessing care and disjointed primary care relationships led to patients making their own triage decisions and seeking other support systems.

Table 1: 11 Main Themes

Informal Support Systems
Formal Services
Health Literacy
Access to Care
Lack of Primary Care Relationship
Self Triage
Patient Phone Call
Discharge Planning
Patient Characteristics
Readmissions (same or different complaint)
Post-Discharge Course

Lack of Primary Care Relationship

Participants described a fragmented relationship with their providers. Nine patients were able to name their primary provider, while seven patients were unable to. In terms of their connection with their provider, many expressed concern: “I ain’t got no relationship. I don’t even know the person. They don’t even know me. There was no relationship.”

Patients further referred to provider turnover and large provider teams as deleterious to developing a relationship with their providers. One patient explained: “Well, I hate that they keep switching doctors. They can't really keep the same doctor because as soon as you get comfortable with one person they'll let you know somebody else is there. Now it's like you got to learn this person all over. I hate changing doctors. I don't like that."

Self Triage

We found that patients were typically going directly to the Emergency Department (ED) without contacting their primary care provider: "I could tell the pain, if it is severe enough to go to the PCC and sit around to be called in the clinic or do I need to just get out there and go right to the emergency room. So I could tell the difference, I learned to know my body now after getting so sick and the last three years I've been very sick."

Patients commonly cited inability to reach their primary provider via telephone and the belief that the PCC could not treat acute illness as reasons for going directly to the ED. One patient explained that "I know that once I get there [to the PCC], they would send me anyway so I might just as well go to the [ED] first."

Finally, amongst patients who decided to go to the ED instead of going for an urgent primary care visit, a common theme was delaying action until the situation became more serious. One patient commented "I wait[ed] instead to get better […] my head was pounding and when I walked to the bathroom I'd be staggering […] I mashed my lifeline, and the ambulance picked me up."

Formal Services

We found that patients had limited or no difficulty accessing formal services such as medication assistance, home care, and transportation. All patients except one were able to obtain medications either despite financial barriers or with no financial barriers. One patient noted "I got medical and they basically pay for [medications]." Patients similarly found home care accessible, describing “Well, I have a nurse coming usually once a week and more often if there is something going on.” Formal transportation was obtained with minimal difficulty, with one patient explaining “They have a car that gets me […] I have to call and make an appointment and they would call people telling them two days in advance.”

Informal Support Systems

Despite the widespread availability and use of formal post-discharge support systems, patients reported still relying heavily on informal support from friends and family members to help with transportation and medication management. One patient described “So my daughter sets them out now so it makes it easier for the visit nurse, so that’s how I manage my medication at home. They put it in a little blue container and my daughter sets them up by the week.” Another patient commented “If I can’t move, my family give me a ride - my daughter, my man, my niece, my nephew, my son.”

Access to Care

The most commonly cited problem inhibiting patients from accessing medical care was an impaired ability to speak to their provider on the telephone. This was described as both difficulty in reaching someone on the phone as well as long waiting times before receiving a call back from a provider. As one patient noted, “I don’t call primary care because it takes too long to get through to anybody until you get the call – I could have gone on a trip to Europe and back.”

Patients also noted that they had stopped even trying to call based on prior experiences: “I try to call the Primary Care Center. But it’s like that one time that took 7 hours. I haven’t called them [since]. So it’s like either I stick it out and let the pain or whatever subside, or I go down to the ER. If I called them one time and it took them some hours to get back to me, I feel that it’s useless if I call again.”

Discussion

In this study of underserved patients with a high frequency of hospital readmissions, we found that there may be factors contributing to readmissions that are not addressed by most current interventions, which typically target access to formal outpatient services.[3,13,14] Contrary to our expectations, patients did not have difficulty accessing medications, home care, or transportation. Rather, the primary factors contributing to readmissions that were consistently brought up by patients in our study were self triage to the ED and a lack of primary care relationship.

While other studies have examined the challenges in transitions from inpatient care,[8] we explored how patients were interacting with the health system when they were home. We found that patients were delaying care and then making the decision to go to the ED without attempting to contact their primary providers. This delay of care likely resulted in a worsening of their health status which consequently precipitated another hospital admission. The most consistent reasons for not reaching out to their primary providers were inability to speak with a provider on the phone, the belief that their primary care provider could not manage urgent issues, and patient perception that their primary care provider could not address their concerns in a timely manner.

Our results differ from other qualitative studies evaluating readmissions. In a recent article by Strunin et al (2007), patients expressed that they had inadequate medical care at home and lacked transportation to appointments.[3] In contrast, we found that these needs were being met for our high-risk patients. Similarly, a recent survey by Kangovi et al (2012) of patients that had been readmitted found that lack of medication adherence after discharge was commonly attributed to difficulty paying for medications and obtaining transportation.[8] In our sample of patients, only one patient reported not being able to obtain medications due to cost. Although other studies have included patients with one or more readmission within 30 days of discharge, we utilized more stringent enrollment criteria, requiring patients to have had four or more admissions in the prior six months. The high-risk underserved patients that we enrolled likely had more interaction with the health system than other patients with fewer hospital admissions, and therefore more opportunity to be linked in with formal services such as VNA and arranged transportation. Thus our findings suggest that this population of patients needs more targeted interventions to address the consistently stated problems of self triage and a lack of primary care relationship.

First, it is critical to have easy telephone access to primary care offices, as this is the preferred method of communication for patients and is linked to improved patient outcomes.[15-17] Inadequate telephone access contributes to patients having difficulty obtaining urgent care when they have a change in health status. An effective telephone system would triage urgent issues, and would ensure that a member of the patient's provider team is available to field urgent calls. Patients in our study commonly mentioned that they wanted to receive a timely call back for urgent issues. Several strategies exist to improve telephone access. Open access scheduling, which minimizes scheduled appointments to maximize same-day visit availability, typically also improves telephone access by opening up the calendar and streamlining the types of appointments that can be made. The time taken per call is consequently shorter.[18,19] Alternatively, many new electronic medical record systems allow secure messaging through the electronic medical record. This feature provides an alternative method of communication for patients, thereby reducing demand for telephone access, and facilitating timely responses to urgent calls.[20]

Second, many patients in our study had stopped calling their primary care provider because of their perceptions of the primary care clinic as incapable of handing acute medical concerns. Patient experiences, such as being transferred from their primary care office to the ED, shaped their perception of the primary care clinic. We would suggest educating patients about the scope of their primary care clinics as urgent care centers, as well as the role of their primary providers in their care when they have a change in their health status. In addition, providers should discuss their role in helping patients make triage decisions when they get sick at home.

Third, patient-provider continuity is essential and has been consistently associated with improved patient outcomes and satisfaction.[21,22] To address the lack of primary care relationship that patients described, there must first be a system in place that enables patients to have continuity with their teams when they have a change in their health status. This is especially difficult in clinics staffed by residents who are present one half day per week, which is a common model for internal medicine residency programs. When patients have urgent issues that arise, they are often seen by providers who are not part of their primary care team. A strategy for improving upon this situation would be to arrange residents into practice-partner teams where they would work together to care for a larger panel of patients. Residents would rotate ambulatory blocks such that a member of the team would be in clinic daily for the duration of an outpatient block to handle urgent issues that arise for any patient on the team panel. The patients would be well-known to a small group of rotating residents. While the patients would still need to become familiar with a team of resident physicians, this has the potential to make patients feel more comfortable seeking care for acute issues. This team-based care would also aid in the conversion of primary care clinics to patient-centered medical homes, where continuity is an essential tenet.

Our study has several limitations. First, we focused on an underserved population; our results may not apply to other populations. Second, our sample size is small, though we did employ a comprehensive strategy to identify patients meeting our enrollment criteria during the study period, and we did reach theoretical saturation as evidenced by no new themes being introduced in the final interviews. Third, we conducted our study at a single site, and there may be other factors more prevalent at other sites contributing to readmission.

In summary, we found that even though patients were receiving the formal services that they needed, they were still being driven to make the decision to go to the ED based on based on long phone wait times for primary care and their belief or experience that primary care cannot treat their acute problems. We propose that educating patients about the capability and role of the primary care provider while concurrently streamlining telephone access to providers could enhance continuity and thereby prevent readmissions. Focusing entirely on arranging formal transitional care services, such as transportation and medications, is unlikely to be adequate in reducing readmissions.

Acknowledgements

Funders: Dr. Horwitz is supported by the National Institute on Aging (K08 AG038336) and by the American Federation for Aging Research through the Paul B. Beeson Career Development Award Program. This work was also supported by a grant from the Claude D. Pepper Older Americans Independence Center at Yale University School of Medicine (P30AG021342 NIH/NIA). No funding source had any role in the study design; in the collection, analysis, and interpretation of data; in the writing of the report; or in the decision to submit the article for publication. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institute on Aging, the National Institutes of Health, or the American Federation for Aging Research.

Access to data: Leora Horwitz had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

Prior presentations: An earlier version of this work was presented as an oral presentation at the Society of General Internal Medicine Annual Meeting in Orlando, FL on May 12, 2012.

Conflicts of interest: The authors have no conflicts of interest to report.

Contributorship: The three authors are justifiably credited with authorship, according to the authorship criteria of ICMJE guidelines. Theodore Long: project management, conception, design, analysis and interpretation of data, drafting of the manuscript, final approval given; all remaining authors: conception and design, analysis, critical revision of manuscript, final approval given.

References

1. Jencks SF, Williams MV, Coleman EA. Rehospitalizations among patients in the Medicare fee-for-service program. *N Engl J Med*. 2009;360(14):1418-1428.

2. Hansen LO, Young RS, Hinami K, et al. Interventions to reduce 30-day rehospitalization: a systematic review. *Ann Intern Med*. 2011;155(8):520-528.

3. Strunin L, Stone M, Jack B. Understanding rehospitalization risk: can hospital discharge be modified to reduce recurrent hospitalization? *J Hosp Med*. 2007;2(5):297-304.

4. Weissman JS, Stern RS, Epstein AM. The impact of patient socioeconomic status and other social factors on readmission: a prospective study in four Massachusetts hospitals. *Inquiry*. 1994;31(2):163-172.

5. Billings J, Zeitel L, Lukomnik J, et al. Impact of socioeconomic status on hospital use in New York City. *Health Aff (Millwood)*. 1993;12(1):162-173.

6. Kalra AD, Fisher RS, Axelrod P. Decreased length of stay and cumulative hospitalized days despite increased patient admissions and readmissions in an area of urban poverty. *J Gen Intern Med*. 2010;25(9):930-935.

7. Allaudeen N, Vidyarthi A, Maselli J, et al. Redefining readmission risk factors for general medicine patients. *J Hosp Med*. 2011;6(2):54-60.

8. Kangovi S, Grande D, Meehan P, et al. Perceptions of readmitted patients on the transition from hospital to home. *J Hosp Med*. 2012;7(9):709-712.

9. Annema C, Luttik ML, Jaarsma T. Reasons for readmission in heart failure: Perspectives of patients, caregivers, cardiologists, and heart failure nurses. *Heart Lung*. 2009;38(5):427-434.

10. Kroenke K, Spitzer RL, Williams JB. The Patient Health Questionnaire-2: validity of a two-item depression screener. *Med Care*. 2003;41(11):1284-1292.

11. Smith PC, Schmidt SM, Allensworth-Davies D, et al. Primary care validation of a single-question alcohol screening test. *J Gen Intern Med*. 2009;24(7):783-788.

12. Glaser BG, Strauss AL. *The Discovery of Grounded Theory: Strategies for Qualitative Research*. New York: Aldine; 1967.

13. Boling PA. Care transitions and home health care. *Clin Geriatr Med*. 2009;25(1):135-148, viii.

14. Pearson S, Inglis SC, McLennan SN, et al. Prolonged effects of a home-based intervention in patients with chronic illness. *Arch Intern Med*. 2006;166(6):645-650.

15. LaVela SL, Schectman G, Gering J, et al. Understanding health care communication preferences of veteran primary care users. *Patient Educ Couns*. 2012;88(3):420-426.

16. Wasson J, Gaudette C, Whaley F, et al. Telephone care as a substitute for routine clinic follow-up. *JAMA*. 1992;267(13):1788-1793.

17. Curry SJ, McBride C, Grothaus LC, et al. A randomized trial of self-help materials, personalized feedback, and telephone counseling with nonvolunteer smokers. *J Consult Clin Psychol*. 1995;63(6):1005-1014.

18. Steinbauer JR, Korell K, Erdin J, et al. Implementing open-access scheduling in an academic practice. *Fam Pract Manag*. 2006;13(3):59-64.

19. Rose KD, Ross JS, Horwitz LI. Advanced access scheduling outcomes: a systematic review. *Arch Intern Med*. 2011;171(13):1150-1159.

20. Zhou YY, Garrido T, Chin HL, et al. Patient access to an electronic health record with secure messaging: impact on primary care utilization. *Am J Manag Care*. 2007;13(7):418-424.

21. Wasson JH, Sauvigne AE, Mogielnicki RP, et al. Continuity of outpatient medical care in elderly men. A randomized trial. *JAMA*. 1984;252(17):2413-2417.

22. van Walraven C, Oake N, Jennings A, et al. The association between continuity of care and outcomes: a systematic and critical review. *J Eval Clin Pract*. 2010;16(5):947-956.

Appendix 1: List of questions from interview instrument

Tell me what happened to you since you went home between last discharge and now?

Do you think there is anything else that could have been done to have prevented you from coming back to hospital, and if so what?

When you have a change in your health at home, or start to feel sick at home, how do you make the decision to try to reach your PMD versus going to the ED?

How often do you try to reach your PMD as opposed to going to the ED?

When you have a change in your health at home, or start to feel sick at home, how long have you waited in the past before contacting your provider?

Can you tell me about the medications you take at home?

Has a financial barrier or problem ever resulted in you not being able to obtain the medications that you need? If so, tell me about it. Has this been a common problem for you?

How do you manage your medications at home?

Do you have any difficulty with your medications?

Tell me what it's like at home for you?

Do you have people who can help you at home?

Do you feel safe at home?

How do you think of the social support you have at home?

What is your financial situation?

In what ways do you have difficulty getting to and from your primary care appointments, if at all?

How do you get around?

In the last couple of weeks, have you been feeling depressed?

Have you ever been on any medications for depression?

Do you feel like these feelings of depression have caused you to have to come to hospital more than you otherwise would have to?

What's your relationship with your primary doctor at the Primary Care Center?

Do you know the name of your PMD, and do you have difficulty reaching your primary doctor if you're having a problem?

How can your primary doctor help to prevent you from having to be readmitted to the hospital do you think?

Can you think of anything more your primary doctor, or the Primary Care Center here at Yale could do?

What do you think are some other things that can be done to help prevent you from having to come back to the hospital, if anything?

Is there anything else that you think that either you or the physicians in the community could do to help you with that?

Do you need any more home support (home nursing care, VNA, etc) than you currently are receiving?

Finally, do you think it would be helpful for your primary doctor to call you at home to check in with you on a regular basis, and why?

Consolidated criteria for reporting qualitative studies (COREQ): 32-item checklist

No	Item	Guide questions/description
Domain 1: Research team and reflexivity		
Personal Characteristics		
1.	Interviewer/facilitator	Which author/s conducted the interview or focus group? Theodore Long
2.	Credentials	What were the researcher's credentials? *E.g. PhD, MD* MD
3.	Occupation	What was their occupation at the time of the study? Internal Medicine resident
4.	Gender	Was the researcher male or female? Male
5.	Experience and training	What experience or training did the researcher have? Researcher received training from both Dr. Horwitz, who has extensive experience with qualitative interviewing, as well as relevant textbooks on qualitative studies.
Relationship with participants		
6.	Relationship established	Was a relationship established prior to study commencement? No
7.	Participant knowledge of the interviewer	What did the participants know about the researcher? e*.g. personal goals, reasons for doing the research* Participants knew that the researcher was conducting interviews for the purpose of this research study.
8.	Interviewer characteristics	What characteristics were reported about the interviewer/facilitator? e.g. *Bias, assumptions, reasons and interests in the research topic* Researcher stated interest in research topic.
Domain 2: study design		
Theoretical framework		
9.	Methodological orientation and Theory	What methodological orientation was stated to underpin the study? *e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis* Grounded theory
Participant selection		
10.	Sampling	How were participants selected? *e.g. purposive, convenience, consecutive, snowball* Purposive
11.	Method of approach	How were participants approached? e*.g. face-to-face, telephone, mail, email* Face-to-face
12.	Sample size	How many participants were in the study? 17
13.	Non-participation	How many people refused to participate or dropped out? Reasons? 4 patients refused, stating that they were not interested in

No	Item	Guide questions/description
		participating
Setting		
14.	Setting of data collection	Where was the data collected? e*.g. home, clinic, workplace* Workplace
15.	Presence of non-participants	Was anyone else present besides the participants and researchers? No
16.	Description of sample	What are the important characteristics of the sample? *e.g. demographic data, date* No identifying information was used, we only used status as a primary care patient
Data collection		
17.	Interview guide	Were questions, prompts, guides provided by the authors? Was it pilot tested? The interview guide was iterative and tested through evaluating interviews sequentially.
18.	Repeat interviews	Were repeat interviews carried out? If yes, how many? No
19.	Audio/visual recording	Did the research use audio or visual recording to collect the data? We used an audio recording device
20.	Field notes	Were field notes made during and/or after the interview or focus group? No
21.	Duration	What was the duration of the interviews or focus group? 15 to 20 minutes per interview
22.	Data saturation	Was data saturation discussed? Yes, we felt that we reached theoretical saturation
23.	Transcripts returned	Were transcripts returned to participants for comment and/or correction? No
Domain 3: analysis and findingsz		
Data analysis		
24.	Number of data coders	How many data coders coded the data? Three
25.	Description of the coding tree	Did authors provide a description of the coding tree? Yes
26.	Derivation of themes	Were themes identified in advance or derived from the data? Derived from data
27.	Software	What software, if applicable, was used to manage the data? None
28.	Participant checking	Did participants provide feedback on the findings? No
Reporting		
29.	Quotations presented	Were participant quotations presented to illustrate the themes / findings? Was each quotation identified? e*.g. participant number* Quotations were used but not identified
30.	Data and findings consistent	Was there consistency between the data presented and the findings?

No	Item	Guide questions/description
		Yes
31.	Clarity of major themes	Were major themes clearly presented in the findings? Yes
32.	Clarity of minor themes	Is there a description of diverse cases or discussion of minor themes? Yes

Reasons for readmission in an underserved high-risk population: A qualitative analysis of a series of inpatient interviews

Journal:	*BMJ Open*
Manuscript ID:	bmjopen-2013-003212.R1
Article Type:	Research
Date Submitted by the Author:	09-Jul-2013
Complete List of Authors:	Long, Theodore; Yale School of Medicine, Internal Medicine Genao, Inginia; Yale University School of Medicine, Internal Medicine Horwitz, Leora; Yale University School of Medicine, Internal Medicine
Primary Subject Heading:	Qualitative research
Secondary Subject Heading:	Health services research, Communication, General practice / Family practice
Keywords:	Quality in health care < HEALTH SERVICES ADMINISTRATION & MANAGEMENT, PRIMARY CARE, QUALITATIVE RESEARCH

Title: Reasons for readmission in an underserved high-risk population: A qualitative analysis of a series of inpatient interviews

Authors: Theodore Long, MD;[1] Inginia Genao, MD;[2] Leora I. Horwitz, MD, MHS[2,3]

Running Title: High-Risk Readmissions

Author affiliations:

[1]Internal Medicine Residency Program, Department of Internal Medicine, Yale School of Medicine, New Haven, CT

[2]Section of General Internal Medicine, Department of Internal Medicine, Yale School of Medicine, New Haven, CT

[3]Center for Outcomes Research and Evaluation, Yale-New Haven Hospital, New Haven, CT

Corresponding author:
Theodore Long, MD
Yale Traditional Internal Medicine Residency Training Program
PO Box 208030
New Haven, CT 06520-8030
Tel: (203) 785-4123
Fax: (203) 785-7258
theodore.long@yale.edu

Word count: 3347

Tables: 1

Figures: 0

References: 26

Word count (abstract): 214

Key words: access to care, care transitions, underserved populations, qualitative research, primary care

Abstract

Objective: To gather qualitative data to elucidate the reasons for readmissions in a high-risk population of underserved patients.

Design: We created an instrument with 27 open-ended questions based on current interventions.

Setting: Yale-New Haven Hospital.

Patients: Patients at the Yale Adult Primary Care Center (PCC).

Measurements: We conducted semi-structured qualitative interviews of patients who had four or more admissions in the previous six months and were currently readmitted to the hospital.

Results: We completed 17 interviews and identified themes relating to risk of readmission. We found that patients went directly to the Emergency Department (ED) when they experienced a change in health status without contacting their primary provider. Reasons for this included poor telephone or urgent care access and the belief that the PCC could not treat acute illness. Many patients could not name their primary provider. Conversely, every patient except one reported being able to obtain medications without undue financial burden, and every patient reported receiving adequate home care services.

Conclusions: These high-risk patients were receiving the formal services that they needed, but were making the decision to go to the ED because of inadequate access to care and fragmented primary care relationships. Formal transitional care services are unlikely to be adequate in reducing readmissions without also addressing primary care access and continuity.

Article Summary

Article Focus:

- We asked the question of what unique factors were contributing to readmissions in a high-risk urban underserved population
- We explored patient perceptions of areas of current interventions, including home services, medications, and transportation
- We propose interventions based on our findings, and compare our results to other studies looking at readmissions

Key Messages:

- We found that there are factors contributing to readmissions that are not addressed by current intervention strategies
- In our high-risk population, there was a lack of primary care relationship and a tendency to delay seeking care that resulted in patients triaging themselves to the Emergency Department

Strengths and Limitations of this Study:

- Limitations include this being a single site study with a focus on patients at the highest risk of readmission; thus findings may not be comparable to other populations
- Strengths include elucidating the perspectives of an underrepresented population of patients and defining key areas for intervention in this population

Introduction

Hospital readmissions represent a significant cost to the healthcare system and are a burden to patients. Nationally, 19.6% of Medicare beneficiaries discharged from the hospital are readmitted within 30 days and 34.0% are readmitted within 90 days [1]. Many attempts have been made to identify and address the issues leading to readmission. However, no single strategy has been found to reproducibly reduce readmissions [2]. Most studies evaluating this problem have focused on chart review and administrative data, but there is a paucity of qualitative information from the perspectives of patients [3]. It has been unclear what happens to patients once they are discharged from the hospital, and whether their health care outside of the hospital could be improved in order to prevent hospital readmissions.

This study examined patient experiences after hospital discharge by conducting qualitative interviews of high-risk patients during readmission. We studied the urban underserved population of patients at Yale-New Haven Hospital (YNHH) with the highest incidence of readmission. We chose to assess this population because the urban underserved comprise a disproportionate share of readmissions at many academic medical centers [4-7]. Furthermore, patients with low socioeconomic status have been shown to have a distinctly challenging experience transitioning from inpatient admission to home [8-10].

We sought to understand the perspectives of underserved patients at the highest risk of readmission in order to determine how future interventions could be more effective for this population. We examined their transition of care from the hospital to home, focusing on how they interacted with the health system once they left the hospital and what factors drove them to be readmitted so frequently.

Methods

Setting

We focused our study on the underserved population at YNHH, a 966 bed urban academic medical center. We interviewed patients cared for at the Yale Adult Primary Care Center (PCC), which is a hospital-based clinic serving primarily the low-income residents of New Haven. The PCC is staffed by internal medicine residents who are typically present for one half day per week as well as part and full time attending providers. Residents are assigned to the PCC for their entire three years of training.

Study Cohort

Our study population was comprised of PCC patients with four or more admissions in the past six months, which is one of YNHH's criteria for high risk. At the time of this study, less than 150 patients at YNHH met this high-risk criterion, and of these 25% were PCC patients. We arranged for our medical record system to send a daily email listing all patients designated as high-risk currently admitted at YNHH. The criteria for this designation are either four or more admissions in the past six months or a diagnosis of heart failure. From the daily list, we identified patients who had four or more admissions in the past six months and who had an established primary care provider in the PCC as well as at least two completed clinic notes from the prior 12 months. We set out the requirement for at least two clinic notes to ensure that enrolled patients were actively followed by the PCC. We then restricted this group to patients who were currently readmitted within 30 days of their last date of discharge from YNHH. All interviews were conducted inpatient during the patients' readmission stays. We completed the study from October, 2011 to April, 2012. Interviews were completed on both weekdays and weekends. Twenty-one eligible patients were identified during the study period, and four declined.

Design

We created an instrument with 27 open-ended questions based on areas targeted by current interventions as well as other qualitative studies looking at readmissions [3, 11]. We then conducted pilot interviews and solicited feedback about the interview questions from patients. The instrument was revised based on this feedback. We also extensively reviewed the first complete interview transcription, and further revised the instrument based on this feedback as well. The final questions in the instrument included the areas of transportation, support systems, medications, formal services, health literacy, access to care, relationship with provider, communication with providers, and transitions of care (see Appendix 1 for list of questions). For questions asking for an affirmative/negative or numerical response, we used a strategy of planned prompts and probes to extend the narrative. We also included screening for depression via the Patient Health Questionnaire-2 (PHQ-2) [12] and for unhealthy alcohol use via the National Institute on Alcohol Abuse and Alcoholism (NIAAA) recommended tool [13]. The IRB waived the written consent requirement due to the fact that no identifying information was used. Informed consent was obtained verbally from all study participants. One investigator (T.L.) conducted semi-structured interviews. The interviews were recorded and then transcribed by a subcontracted transcriber.

Analysis

Three investigators (T.L., I.G., L.H.) independently generated codes from the primary transcriptions. The codes represented themes found in the data. The investigators initially coded the first four transcriptions independently and then reviewed the coding scheme and resolved discrepancies collaboratively. The transcriptions were saved as Microsoft Word documents, with codes being tracked as Comments within these documents. This process was repeated two more times, with all transcriptions being coded independently and then meeting to come to a group consensus. It was decided ahead of time that transcriptions would be coded until theoretical saturation was reached and no new codes were being introduced in the interviews. A final code list was developed using the constant comparative method [14]. The codes were organized into 11 main themes.

Results

We completed 17 interviews (11 women, 6 men). On average, the interviews were 15 to 20 minutes long. Every patient except one screened negative for unhealthy alcohol use per the NIAAA tool and 47% had a positive screen for depression per the PHQ-2. We identified 11 themes (Table 1), and describe five relating to risk of readmission: fragmented primary care relationships contributing to avoidance of ambulatory care, self triage leading to potentially avoidable ED use, adequacy of formal services, heavy reliance on informal support systems, inadequate access to care. The codes contributing to these five themes were consistent throughout the interviews and pertained to either reasons for readmission or current interventions targeted at decreasing readmissions. The other themes represented self-reported descriptions, such as substance abuse for the theme of patient characteristics. Overall, we found that while patients described receiving adequate formal services, barriers in accessing care and disjointed primary care relationships led to patients making their own triage decisions and seeking other support systems.

Table 1: 11 Main Themes

Heavy Reliance on Informal Support

Systems
Adequacy of Formal Services
Health Literacy
Inadequate Access to Care
Fragmented Primary Care Relationships Contributing to Avoidance of Ambulatory Care
Self Triage Leading to Potentially Avoidable ED Use
Patient Phone Call
Discharge Planning
Patient Characteristics
Readmissions (same or different complaint)
Post-Discharge Course

Fragmented Primary Care Relationships Contributing to Avoidance of Ambulatory Care

Participants described a fragmented relationship with their providers. Nine patients were able to name their primary provider, while seven patients were unable to. In terms of their connection with their provider, many expressed concern: “I ain’t got no relationship. I don’t even know the person. They don’t even know me. There was no relationship.”

Patients further referred to provider turnover and large provider teams as deleterious to developing a relationship with their providers. One patient explained: “Well, I hate that they keep switching doctors. They can’t really keep the same doctor because as soon as you get comfortable with one person they'll let you know somebody else is there. Now it's like you got to learn this person all over. I hate changing doctors. I don't like that." Another patient described improving the relationship with her primary provider, stating "It [would] make me feel better knowing that somebody cares […] They could give advice on the phone telling me what I should do. And I could do that to prevent going to the hospital because I'm in the hospital a lot."

Self Triage Leading to Potentially Avoidable ED Use

We found that patients were typically going directly to the Emergency Department (ED) without contacting their primary care provider: "I could tell the pain, if it is severe enough to go to the PCC and sit around to be called in the clinic or do I need to just get out there and go right to the emergency room. So I could tell the difference, I learned to know my body now after getting so sick and the last three years I've been very sick."

Patients commonly cited inability to reach their primary provider via telephone and the belief that the PCC could not treat acute illness as reasons for going directly to the ED. One patient explained that "I know that once I get there [to the PCC], they would send me anyway so I might just as well go to the [ED] first."

Finally, amongst patients who decided to go to the ED instead of going for an urgent primary care visit, a common theme was delaying action until the situation became more serious. One patient commented "I wait[ed] instead to get better […] my head was pounding and when I walked to the bathroom I'd be staggering […] I mashed my lifeline, and the ambulance picked me up."

Adequacy of Formal Services

We found that patients had limited or no difficulty accessing formal services such as medication assistance, home care, and transportation. All patients except one were able to obtain medications either despite financial barriers or with no financial barriers. One patient noted “I got medical and they basically pay for [medications].” Patients similarly found home care accessible, describing “Well, I have a nurse coming usually once a week and more often if there is something going on.” Formal transportation was obtained with minimal difficulty, with one patient explaining “They have a car that gets me […] I have to call and make an appointment and they would call people telling them two days in advance.”

Heavy Reliance on Informal Support Systems

Despite the widespread availability and use of formal post-discharge support systems, patients reported still relying heavily on informal support from friends and family members to help with transportation and medication management. One patient described “So my daughter sets them out now so it makes it easier for the visit nurse, so that’s how I manage my medication at home. They put it in a little blue container and my daughter sets them up by the week.” Another patient commented “If I can’t move, my family give me a ride - my daughter, my man, my niece, my nephew, my son.” Patients demonstrated resilient attitudes based on the high degree of support they received from friends and family members, and notably described that they did not feel lonely or socially isolated despite spending a great deal of time in the hospital. Patients also reported feeling safe at home.

Inadequate Access to Care

The most commonly cited problem inhibiting patients from accessing medical care was an impaired ability to speak to their provider on the telephone. This was described as both difficulty in reaching someone on the phone as well as long waiting times before receiving a call back from a provider. As one patient noted, “I don’t call primary care because it takes too long to get through to anybody until you get the call – I could have gone on a trip to Europe and back.”

Patients also noted that they had stopped even trying to call based on prior experiences: “I try to call the Primary Care Center. But it’s like that one time that took 7 hours. I haven’t called them [since]. So it’s like either I stick it out and let the pain or whatever subside, or I go down to the ER. If I called them one time and it took them some hours to get back to me, I feel that it’s useless if I call again.”

Discussion

In this study of underserved patients with a high frequency of hospital readmissions, we found that there may be factors contributing to readmissions that are not addressed by most current interventions, which typically target access to formal outpatient services [3, 15, 16]. Contrary to our expectations, patients from our sample did not have difficulty accessing medications, home care, or transportation. Rather, the primary factors contributing to readmissions that were consistently brought up by patients in our study were self triage to the ED and a lack of primary care relationship.

While other studies have examined the challenges in transitions from inpatient care [8, 17], we explored how patients interacted with the health system when they were home. We found that patients delayed care and then made the decision to go to the ED without attempting to contact their primary providers. This delay of care likely resulted in a worsening of their health status which consequently precipitated another hospital admission. The most consistent reasons for not reaching out to their primary providers were inability to speak with a provider on the phone, the belief that their primary care provider could not manage urgent issues, and patient perception that their primary care provider could not address their concerns in a timely manner.

Our results differ from other qualitative studies evaluating readmissions. In a recent article by Strunin et al (2007), patients expressed that they had inadequate medical care at home and lacked transportation to appointments [3]. In contrast, we found that these needs were being met for our high-risk patients. Similarly, a recent survey by Kangovi et al (2012) of patients that had been readmitted found that lack of medication adherence after discharge was commonly attributed to difficulty paying for medications and obtaining transportation [8]. In our sample of patients, only one patient reported not being able to obtain medications due to cost. Although other studies have included patients with one or more readmission within 30 days of discharge, we utilized more stringent enrollment criteria, requiring patients to have had four or more admissions in the prior six months. The high-risk underserved patients that we enrolled likely had more interaction with the health system than other patients with fewer hospital admissions, and therefore more opportunity to be linked in with formal services such as VNA and arranged transportation. Thus our findings suggest that this population of patients needs more targeted interventions to address the consistently stated problems of self triage and a lack of primary care relationship.

First, it is critical to have easy telephone access to primary care offices, as this is the preferred method of communication for patients and is linked to improved patient outcomes [18-20]. An effective telephone system would triage urgent issues, and would ensure that a member of the patient's provider team is available to field urgent calls. Patients in our study commonly mentioned that they wanted to receive a timely call back for urgent issues. Open access scheduling, which minimizes scheduled appointments to maximize same-day visit availability, typically also improves telephone access by opening up the calendar and streamlining the types of appointments that can be made. The time taken per call is consequently shorter [21, 22]. Alternatively, many new electronic medical record systems allow secure messaging through the electronic medical record, thereby reducing demand for telephone access, and facilitating timely responses to urgent calls [23, 24]. Future research regarding the best modes of communication with providers will be an important area of inquiry moving forward.

Second, many patients in our study had stopped calling their primary care provider because of their perceptions of the primary care clinic as incapable of handing acute medical concerns. Patient experiences, such as being transferred from their primary care office to the ED, shaped their perception of the primary care clinic. Once access to providers has been improved and the lack of primary care relationship has been repaired, we would suggest educating patients about the scope of their primary care clinics as urgent care centers, as well as the role of their primary providers in their care when they have a change in their health status. In addition, providers should discuss their role in helping patients make triage decisions when they get sick at home.

Third, patient-provider continuity is essential and has been consistently associated with improved patient outcomes and satisfaction [25, 26]. To address the lack of primary care relationship that patients described, there must first be a system in place that enables patients to have continuity with their teams when they have a change in their health status [10]. This is especially difficult in clinics staffed by residents who are present one half day per week, which is a common model for internal medicine residency programs. When patients have urgent issues that arise, they are often seen by providers who are not part of their primary care team. A strategy for improving upon this situation would be to arrange residents into practice-partner teams where they would work together to care for a larger panel of patients. While the patients would still need to become familiar with a team of resident physicians, this has the potential to make patients feel more comfortable seeking care for acute issues. This team-based care would also aid in the conversion of primary care clinics to patient-centered medical homes, where continuity is an essential tenet.

Our study has several limitations. First, we focused on an underserved population; our results may not apply to other populations. Second, our sample size is small, though we did employ a comprehensive strategy to identify patients meeting our enrollment criteria during the study period, and we did reach theoretical saturation as evidenced by no new themes being introduced in the final interviews. Third, we conducted our study at a single site, and there may be other factors more prevalent at other sites contributing to readmission.

In summary, we found that even though patients were receiving the formal services that they needed, they were still being driven to make the decision to go to the ED based on based on long phone wait times for primary care and their belief or experience that primary care cannot treat their acute problems. We propose that educating patients about the capability and role of the primary care provider while concurrently streamlining telephone access to providers could enhance continuity and thereby prevent readmissions. Focusing entirely on arranging formal transitional care services, such as transportation and medications, is unlikely to be adequate in reducing readmissions.

Acknowledgements

Funders: Dr. Horwitz is supported by the National Institute on Aging (K08 AG038336) and by the American Federation for Aging Research through the Paul B. Beeson Career Development Award Program. This work was also supported by a grant from the Claude D. Pepper Older Americans Independence Center at Yale University School of Medicine (P30AG021342 NIH/NIA). No funding source had any role in the study design; in the collection, analysis, and interpretation of data; in the writing of the report; or in the decision to submit the article for publication. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institute on Aging, the National Institutes of Health, or the American Federation for Aging Research.

Access to data: Leora Horwitz had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

Prior presentations: An earlier version of this work was presented as an oral presentation at the Society of General Internal Medicine Annual Meeting in Orlando, FL on May 12, 2012.

Conflicts of interest: The authors have no conflicts of interest to report.

References

1. Jencks SF, Williams MV, Coleman EA. Rehospitalizations among patients in the Medicare fee-for-service program. The New England journal of medicine 2009;**360**(14):1418-28 doi: 10.1056/NEJMsa0803563[published Online First: Epub Date]|.
2. Hansen LO, Young RS, Hinami K, et al. Interventions to reduce 30-day rehospitalization: a systematic review. Annals of internal medicine 2011;**155**(8):520-8 doi: 10.1059/0003-4819-155-8-201110180-00008[published Online First: Epub Date]|.
3. Strunin L, Stone M, Jack B. Understanding rehospitalization risk: can hospital discharge be modified to reduce recurrent hospitalization? J Hosp Med 2007;**2**(5):297-304
4. Weissman JS, Stern RS, Epstein AM. The impact of patient socioeconomic status and other social factors on readmission: a prospective study in four Massachusetts hospitals. Inquiry : a journal of medical care organization, provision and financing 1994;**31**(2):163-72
5. Billings J, Zeitel L, Lukomnik J, et al. Impact of socioeconomic status on hospital use in New York City. Health affairs (Project Hope) 1993;**12**(1):162-73
6. Kalra AD, Fisher RS, Axelrod P. Decreased length of stay and cumulative hospitalized days despite increased patient admissions and readmissions in an area of urban poverty. Journal of general internal medicine 2010;**25**(9):930-5 doi: 10.1007/s11606-010-1370-5[published Online First: Epub Date]|.
7. Allaudeen N, Vidyarthi A, Maselli J, et al. Redefining readmission risk factors for general medicine patients. Journal of hospital medicine : an official publication of the Society of Hospital Medicine 2011;**6**(2):54-60 doi: 10.1002/jhm.805[published Online First: Epub Date]|.
8. Kangovi S, Grande D, Meehan P, et al. Perceptions of readmitted patients on the transition from hospital to home. Journal of hospital medicine : an official publication of the Society of Hospital Medicine 2012;**7**(9):709-12 doi: 10.1002/jhm.1966[published Online First: Epub Date]|.
9. Raven MC, Billings JC, Goldfrank LR, Manheimer ED, Gourevitch MN. Medicaid patients at high risk for frequent hospital admission: real-time identification and remediable risks. Journal of urban health : bulletin of the New York Academy of Medicine 2009;**86**(2):230-41 doi: 10.1007/s11524-008-9336-1[published Online First: Epub Date]|.
10. Englander H, Kansagara D. Planning and designing the care transitions innovation (C-Train) for uninsured and Medicaid patients. Journal of hospital medicine : an official publication of the Society of Hospital Medicine 2012;**7**(7):524-9 doi: 10.1002/jhm.1926[published Online First: Epub Date]|.
11. Annema C, Luttik ML, Jaarsma T. Reasons for readmission in heart failure: Perspectives of patients, caregivers, cardiologists, and heart failure nurses. Heart & lung : the journal of critical care 2009;**38**(5):427-34 doi: 10.1016/j.hrtlng.2008.12.002[published Online First: Epub Date]|.
12. Kroenke K, Spitzer RL, Williams JB. The Patient Health Questionnaire-2: validity of a two-item depression screener. Medical care 2003;**41**(11):1284-92 doi: 10.1097/01.mlr.0000093487.78664.3c[published Online First: Epub Date]|.
13. Smith PC, Schmidt SM, Allensworth-Davies D, et al. Primary care validation of a single-question alcohol screening test. Journal of general internal medicine 2009;**24**(7):783-8 doi: 10.1007/s11606-009-0928-6[published Online First: Epub Date]|.
14. Glaser BG, Strauss AL. *The Discovery of Grounded Theory: Strategies for Qualitative Research*. New York: Aldine, 1967.
15. Boling PA. Care transitions and home health care. Clinics in geriatric medicine 2009;**25**(1):135-48, viii doi: 10.1016/j.cger.2008.11.005[published Online First: Epub Date]|.

16. Pearson S, Inglis SC, McLennan SN, et al. Prolonged effects of a home-based intervention in patients with chronic illness. Archives of internal medicine 2006;**166**(6):645-50 doi: 10.1001/archinte.166.6.645[published Online First: Epub Date]|.

17. Davis MM, Devoe M, Kansagara D, Nicolaidis C, Englander H. "Did I do as best as the system would let me?" Healthcare professional views on hospital to home care transitions. Journal of general internal medicine 2012;**27**(12):1649-56 doi: 10.1007/s11606-012-2169-3[published Online First: Epub Date]|.

18. LaVela SL, Schectman G, Gering J, et al. Understanding health care communication preferences of veteran primary care users. Patient education and counseling 2012;**88**(3):420-6 doi: 10.1016/j.pec.2012.06.004[published Online First: Epub Date]|.

19. Wasson J, Gaudette C, Whaley F, et al. Telephone care as a substitute for routine clinic follow-up. JAMA : the journal of the American Medical Association 1992;**267**(13):1788-93

20. Curry SJ, McBride C, Grothaus LC, et al. A randomized trial of self-help materials, personalized feedback, and telephone counseling with nonvolunteer smokers. Journal of consulting and clinical psychology 1995;**63**(6):1005-14

21. Steinbauer JR, Korell K, Erdin J, et al. Implementing open-access scheduling in an academic practice. Family practice management 2006;**13**(3):59-64

22. Rose KD, Ross JS, Horwitz LI. Advanced access scheduling outcomes: a systematic review. Arch Intern Med 2011;**171**(13):1150-9 doi: 10.1001/archinternmed.2011.168[published Online First: Epub Date]|.

23. Zhou YY, Garrido T, Chin HL, et al. Patient access to an electronic health record with secure messaging: impact on primary care utilization. The American journal of managed care 2007;**13**(7):418-24

24. Coleman EA. Falling through the cracks: challenges and opportunities for improving transitional care for persons with continuous complex care needs. Journal of the American Geriatrics Society 2003;**51**(4):549-55

25. Wasson JH, Sauvigne AE, Mogielnicki RP, et al. Continuity of outpatient medical care in elderly men. A randomized trial. JAMA : the journal of the American Medical Association 1984;**252**(17):2413-7

26. van Walraven C, Oake N, Jennings A, et al. The association between continuity of care and outcomes: a systematic and critical review. Journal of evaluation in clinical practice 2010;**16**(5):947-56 doi: 10.1111/j.1365-2753.2009.01235.x[published Online First: Epub Date]|.

Appendix 1: List of questions from interview instrument

Tell me what happened to you since you went home between last discharge and now?

Do you think there is anything else that could have been done to have prevented you from coming back to hospital, and if so what?

When you have a change in your health at home, or start to feel sick at home, how do you make the decision to try to reach your PMD versus going to the ED?

How often do you try to reach your PMD as opposed to going to the ED?

When you have a change in your health at home, or start to feel sick at home, how long have you waited in the past before contacting your provider?

Can you tell me about the medications you take at home?

Has a financial barrier or problem ever resulted in you not being able to obtain the medications that you need? If so, tell me about it. Has this been a common problem for you?

How do you manage your medications at home?

Do you have any difficulty with your medications?

Tell me what it's like at home for you?

Do you have people who can help you at home?

Do you feel safe at home?

How do you think of the social support you have at home?

What is your financial situation?

In what ways do you have difficulty getting to and from your primary care appointments, if at all?

How do you get around?

In the last couple of weeks, have you been feeling depressed?

Have you ever been on any medications for depression?

Do you feel like these feelings of depression have caused you to have to come to hospital more than you otherwise would have to?

What's your relationship with your primary doctor at the Primary Care Center?

Do you know the name of your PMD, and do you have difficulty reaching your primary doctor if you're having a problem?

How can your primary doctor help to prevent you from having to be readmitted to the hospital do you think?

Can you think of anything more your primary doctor, or the Primary Care Center here at Yale could do?

What do you think are some other things that can be done to help prevent you from having to come back to the hospital, if anything?

Is there anything else that you think that either you or the physicians in the community could do to help you with that?

Do you need any more home support (home nursing care, VNA, etc) than you currently are receiving?

Finally, do you think it would be helpful for your primary doctor to call you at home to check in with you on a regular basis, and why?

Title: Reasons for readmission in an underserved high-risk population: A qualitative analysis of a series of inpatient interviews~~Reasons for Readmission in a High-Risk Population~~

Authors: Theodore Long, MD;[1] Inginia Genao, MD;[2] Leora I. Horwitz, MD, MHS[2,3]

Running Title: High-Risk Readmissions

Author affiliations:

[1]Internal Medicine Residency Program, Department of Internal Medicine, Yale School of Medicine, New Haven, CT

[2]Section of General Internal Medicine, Department of Internal Medicine, Yale School of Medicine, New Haven, CT

[3]Center for Outcomes Research and Evaluation, Yale-New Haven Hospital, New Haven, CT

Corresponding author:
Theodore Long, MD
Yale Traditional Internal Medicine Residency Training Program
PO Box 208030
New Haven, CT 06520-8030
Tel: (203) 785-4123
Fax: (203) 785-7258
theodore.long@yale.edu

Word count: 3347~~3000~~

Tables: 1

Figures: 0

References: 26~~2~~

Word count (abstract): 214

Key words: access to care, care transitions, underserved populations, qualitative research, primary care

Abstract

Objective: To gather qualitative data to elucidate the reasons for readmissions in a high-risk population of underserved patients.

Design: We created an instrument with 27 open-ended questions based on current interventions.

Setting: Yale-New Haven Hospital.

Patients: Patients at the Yale Adult Primary Care Center (PCC).

Measurements: We conducted semi-structured qualitative interviews of patients who had four or more admissions in the previous six months and were currently readmitted to the hospital.

Results: We completed 17 interviews and identified themes relating to risk of readmission. We found that patients went directly to the Emergency Department (ED) when they experienced a change in health status without contacting their primary provider. Reasons for this included poor telephone or urgent care access and the belief that the PCC could not treat acute illness. Many patients could not name their primary provider. Conversely, every patient except one reported being able to obtain medications without undue financial burden, and every patient reported receiving adequate home care services.

Conclusions: These high-risk patients were receiving the formal services that they needed, but were making the decision to go to the ED because of inadequate access to care and fragmented primary care relationships. Formal transitional care services are unlikely to be adequate in reducing readmissions without also addressing primary care access and continuity.

Article Summary

Article Focus:

- We asked the question of what unique factors were contributing to readmissions in a high-risk urban underserved population
- We explored patient perceptions of areas of current interventions, including home services, medications, and transportation
- We propose interventions based on our findings, and compare our results to other studies looking at readmissions

Key Messages:

- We found that there are factors contributing to readmissions that are not addressed by current intervention strategies
- In our high-risk population, there was a lack of primary care relationship and a tendency to delay seeking care that resulted in patients triaging themselves to the Emergency Department

Strengths and Limitations of this Study:

- Limitations include this being a single site study with a focus on patients at the highest risk of readmission; thus findings may not be comparable to other populations
- Strengths include elucidating the perspectives of an underrepresented population of patients and defining key areas for intervention in this population

Introduction

Hospital readmissions represent a significant cost to the healthcare system and are a burden to patients. Nationally, 19.6% of Medicare beneficiaries discharged from the hospital are readmitted within 30 days and 34.0% are readmitted within 90 days ~~.~~[1]. Many attempts have been made to identify and address the issues leading to readmission. However, no single strategy has been found to reproducibly reduce readmissions ~~.~~[2]. Most studies evaluating this problem have focused on chart review and administrative data, but there is a paucity of qualitative information from the perspectives of patients ~~.~~[3]. It has been unclear what happens to patients once they are discharged from the hospital, and whether their health care outside of the hospital could be improved in order to prevent~~what elements of their outpatient health care are inadequate in preventing~~ hospital readmissions.

This study examined patient experiences after hospital discharge by conducting qualitative interviews of high-risk patients during readmission. We studied the urban underserved population of patients at Yale-New Haven Hospital (YNHH) with the highest incidence of readmission. We chose to assess this population because the urban underserved comprise a disproportionate share of readmissions at many academic medical centers ~~.~~[4-7]. Furthermore, patients with low socioeconomic status have been shown to have a distinctly challenging experience transitioning from inpatient admission to home ~~.~~[8-10].

We sought to understand the perspectives of underserved patients at the highest risk of readmission in order to determine how future interventions could be more effective for this population. We examined their transition of care from the hospital to home, focusing on how they interacted with the health system once they left the hospital and what factors drove them to be readmitted so frequently.

Methods

Setting

We focused our study on the underserved population at YNHH, a 966 bed urban academic medical center. We interviewed patients cared for at the Yale Adult Primary Care Center (PCC), which is a hospital-based clinic serving primarily the low-income residents of New Haven. The PCC is staffed by internal medicine residents who are typically present for one half day per week as well as part and full time attending providers. Residents are assigned to the PCC for their entire three years of training.

Study Cohort

Our study population was comprised of PCC patients with four or more admissions in the past six months, which is one of YNHH's criteria for high risk. At the time of this study, less than 150 patients at YNHH met this high-risk criterion, and of these 25% were PCC patients. We arranged for our medical record system to send a daily email listing all patients designated as high-risk currently admitted at YNHH. The criteria for this designation are either four or more admissions in the past six months or a diagnosis of heart failure. From the daily list, we identified patients who had four or more admissions in the past six months and~~identified all patients~~ who had an established primary care provider in the PCC as well as at least two completed clinic notes from the prior 12 months. We set out the requirement for at least two clinic notes to ensure that enrolled patients were actively followed by the PCC. We then restricted this group to patients who were currently readmitted within 30 days of their last date of discharge from YNHH. All interviews were conducted inpatient during the patients' readmission stays. We ~~conducted~~ completed the study from October, 2011 to April, 2012. Interviews were completed on both weekdays and weekends. Twenty-one eligible patients were identified during the study period, and four declined.

Design

We created an instrument with 27 open-ended questions based on areas targeted by current interventions as well as other qualitative studies looking at readmissions ~~.~~[3, 11]. We then conducted pilot interviews and solicited feedback about the interview questions from patients. The instrument was revised based on this feedback. We also extensively reviewed the first complete interview transcription, and further revised the instrument based on this feedback as well. ~~The instrument was then revised based on pilot interviews and feedback.~~ The final questions in the instrument included the areas of transportation, support systems, medications, formal services, health literacy, access to care, relationship with provider, communication with providers, and transitions of care (see Appendix 1 for list of questions). For questions asking for an affirmative/negative or numerical response, we used a strategy of planned prompts and probes to extend the narrative. We also included screening for depression via the Patient Health Questionnaire-2 (PHQ-2) [12] and for unhealthy alcohol use via the National Institute on Alcohol Abuse and Alcoholism (NIAAA) recommended tool ~~.~~[13]. The IRB waived the written consent requirement due to the fact that no identifying information was used. Informed consent was obtained verbally from all study participants. One investigator (T.L.) conducted semi-structured interviews. The interviews were recorded and then transcribed by a subcontracted transcriber.

Analysis

Three investigators (T.L., I.G., L.H.) independently generated codes from the primary transcriptions. The codes represented themes found in the data. The investigators initially coded the first four transcriptions independently and then reviewed the coding scheme and resolved discrepancies collaboratively. The transcriptions were saved as Microsoft Word documents, with codes being tracked as Comments within these documents. This process was repeated two more times, with all transcriptions being coded independently and then meeting to come to a group consensus. It was decided ahead of time that transcriptions would be coded until theoretical saturation was reached and no new codes were being introduced in the interviews. A final code list was developed using the constant comparative method ~~.~~[14]. The codes were organized into 11 main themes.

Results

We completed 17 interviews (11 women, 6 men). On average, the interviews were 15 to 20 minutes long. Every patient except one screened negative for unhealthy alcohol use per the NIAAA tool and 47% had a positive screen for depression per the PHQ-2. We identified 11 themes (Table 1), and describe five relating to risk of readmission: ~~lack of~~fragmented primary care relationships contributing to avoidance of ambulatory care, self triage leading to potentially avoidable ED use, adequacy of formal services, heavy reliance on informal support systems, inadequate access to care. The codes contributing to these five themes were consistent throughout the interviews and pertained to either reasons for readmission or current interventions targeted at decreasing readmissions. The other themes represented self-reported descriptions, such as substance abuse for the theme of patient characteristics. Overall, we found that while patients described receiving adequate formal services, barriers in accessing care and disjointed primary care relationships led to patients making their own triage decisions and seeking other support systems.

Table 1: 11 Main Themes

Heavy Reliance on Informal Support Systems
Adequacy of Formal Services
Health Literacy
Inadequate Access to Care
~~Lack of~~Fragmented Primary Care Relationships Contributing to Avoidance of Ambulatory Care
Self Triage Leading to Potentially Avoidable ED Use
Patient Phone Call
Discharge Planning
Patient Characteristics
Readmissions (same or different complaint)
Post-Discharge Course

~~Lack of~~Fragmented Primary Care Relationships Contributing to Avoidance of Ambulatory Care

Participants described a fragmented relationship with their providers. Nine patients were able to name their primary provider, while seven patients were unable to. In terms of their connection with their provider, many expressed concern: “I ain’t got no relationship. I don’t even know the person. They don’t even know me. There was no relationship.”

Patients further referred to provider turnover and large provider teams as deleterious to developing a relationship with their providers. One patient explained: “Well, I hate that they keep switching doctors. They can’t really keep the same doctor because as soon as you get comfortable with one person they’ll let you know somebody else is there. Now it’s like you got to learn this person all over. I hate changing doctors. I don’t like that.” Another patient described improving the relationship with her primary provider, stating “It [would] make me feel better knowing that somebody cares […] They could give advice on the phone telling me what I should do. And I could do that to prevent going to the hospital because I’m in the hospital a lot.”

Self Triage Leading to Potentially Avoidable ED Use

We found that patients were typically going directly to the Emergency Department (ED) without contacting their primary care provider: “I could tell the pain, if it is severe enough to go to the PCC and sit around to be called in the clinic or do I need to just get out there and go right to the emergency room. So I could tell the difference, I learned to know my body now after getting so sick and the last three years I’ve been very sick.”

Patients commonly cited inability to reach their primary provider via telephone and the belief that the PCC could not treat acute illness as reasons for going directly to the ED. One patient explained that “I know that once I get there [to the PCC], they would send me anyway so I might just as well go to the [ED] first.”

Finally, amongst patients who decided to go to the ED instead of going for an urgent primary care visit, a common theme was delaying action until the situation became more serious. One patient commented “I wait[ed] instead to get better […] my head was pounding and when I walked to the bathroom I'd be staggering […] I mashed my lifeline, and the ambulance picked me up.”

Adequacy of Formal Services

We found that patients had limited or no difficulty accessing formal services such as medication assistance, home care, and transportation. All patients except one were able to obtain medications either despite financial barriers or with no financial barriers. One patient noted "I got medical and they basically pay for [medications]." Patients similarly found home care accessible, describing "Well, I have a nurse coming usually once a week and more often if there is something going on." Formal transportation was obtained with minimal difficulty, with one patient explaining "They have a car that gets me […] I have to call and make an appointment and they would call people telling them two days in advance."

Heavy Reliance on Informal Support Systems

Despite the widespread availability and use of formal post-discharge support systems, patients reported still relying heavily on informal support from friends and family members to help with transportation and medication management. One patient described "So my daughter sets them out now so it makes it easier for the visit nurse, so that's how I manage my medication at home. They put it in a little blue container and my daughter sets them up by the week." Another patient commented "If I can't move, my family give me a ride - my daughter, my man, my niece, my nephew, my son." Patients demonstrated resilient attitudes based on the high degree of support they received from friends and family members, and notably described that they did not feel lonely or socially isolated despite spending a great deal of time in the hospital. Patients also reported feeling safe at home.

Inadequate Access to Care

The most commonly cited problem inhibiting patients from accessing medical care was an impaired ability to speak to their provider on the telephone. This was described as both difficulty in reaching someone on the phone as well as long waiting times before receiving a call back from a provider. As one patient noted, “I don’t call primary care because it takes too long to get through to anybody until you get the call – I could have gone on a trip to Europe and back.”

Patients also noted that they had stopped even trying to call based on prior experiences: “I try to call the Primary Care Center. But it’s like that one time that took 7 hours. I haven’t called them [since]. So it’s like either I stick it out and let the pain or whatever subside, or I go down to the ER. If I called them one time and it took them some hours to get back to me, I feel that it’s useless if I call again.”

Discussion

In this study of underserved patients with a high frequency of hospital readmissions, we found that there may be factors contributing to readmissions that are not addressed by most current interventions, which typically target access to formal outpatient services ~~.~~[3, 15, 16]. Contrary to our expectations, patients from our sample did not have difficulty accessing medications~~patients did not have difficulty accessing medications~~, home care, or transportation. Rather, the primary factors contributing to readmissions that were consistently brought up by patients in our study were self triage to the ED and a lack of primary care relationship.

While other studies have examined the challenges in transitions from inpatient care ~~,~~[8, 17], we explored how patients ~~were interacting~~interacted with the health system when they were home. We found that patients ~~were delaying~~delayed care and then ~~making~~ made the decision to go to the ED without attempting to contact their primary providers. This delay of care likely resulted in a worsening of their health status which consequently precipitated another hospital admission. The most consistent reasons for not reaching out to their primary providers were inability to speak with a provider on the phone, the belief that their primary care provider could not manage urgent issues, and patient perception that their primary care provider could not address their concerns in a timely manner.

Our results differ from other qualitative studies evaluating readmissions. In a recent article by Strunin et al (2007), patients expressed that they had inadequate medical care at home and lacked transportation to appointments ~~.~~[3]. In contrast, we found that these needs were being met for our high-risk patients. Similarly, a recent survey by Kangovi et al (2012) of patients that had been readmitted found that lack of medication adherence after discharge was commonly attributed to difficulty paying for medications and obtaining transportation ~~.~~[8]. In our sample of patients, only one patient reported not being able to obtain medications due to cost. Although other studies have included patients with one or more readmission within 30 days of discharge, we utilized more stringent enrollment criteria, requiring patients to have had four or more admissions in the prior six months. The high-risk underserved patients that we enrolled likely had more interaction with the health system than other patients with fewer hospital admissions, and therefore more opportunity to be linked in with formal services such as VNA and arranged transportation. Thus our findings suggest that this population of patients needs more targeted interventions to address the consistently stated problems of self triage and a lack of primary care relationship.

First, it is critical to have easy telephone access to primary care offices, as this is the preferred method of communication for patients and is linked to improved patient outcomes ~~.~~[18-20]. ~~Inadequate telephone access contributes to patients having difficulty obtaining urgent care when they have a change in health status.~~ An effective telephone system would triage urgent issues, and would ensure that a member of the patient's provider team is available to field urgent calls. Patients in our study commonly mentioned that they wanted to receive a timely call back for urgent issues. ~~Several strategies exist to improve telephone access.~~ Open access scheduling, which minimizes scheduled appointments to maximize same-day visit availability, typically also improves telephone access by opening up the calendar and streamlining the types of appointments that can be made. The time taken per call is consequently shorter ~~.~~[21, 22]. Alternatively, many new electronic medical record systems allow secure messaging through the electronic medical record, ~~. This feature provides an alternative method of communication for patients,~~ thereby reducing demand for telephone access, and facilitating timely responses to urgent calls ~~.~~[23, 24]. Future research regarding the best modes of communication with providers will be an important area of inquiry moving forward.

Second, many patients in our study had stopped calling their primary care provider because of their perceptions of the primary care clinic as incapable of handing acute medical concerns. Patient experiences, such as being transferred from their primary care office to the ED, shaped their perception of the primary care clinic. Once access to providers has been improved and the lack of primary care relationship has been repaired, ~~W~~we would suggest educating patients about the scope of their primary care clinics as urgent care centers, as well as the role of their primary providers in their care when they have a change in their health status. In addition, providers should discuss their role in helping patients make triage decisions when they get sick at home.

Third, patient-provider continuity is essential and has been consistently associated with improved patient outcomes and satisfaction ~~.~~[25, 26]. To address the lack of primary care relationship that patients described, there must first be a system in place that enables patients to have continuity with their teams when they have a change in their health status [10]. This is especially difficult in clinics staffed by residents who are present one half day per week, which is a common model for internal medicine residency programs. When patients have urgent issues that arise, they are often seen by providers who are not part of their primary care team. A strategy for improving upon this situation would be to arrange residents into practice-partner teams where they would work together to care for a larger panel of patients. ~~Residents would rotate ambulatory blocks such that a member of the team would be in clinic daily for the duration of an outpatient block to handle urgent issues that arise for any patient on the team panel. The patients would be well-known to a small group of rotating residents.~~ While the patients would still need to become familiar with a team of resident physicians, this has the potential to make patients feel more comfortable seeking care for acute issues. This team-based care would also aid in the conversion of primary care clinics to patient-centered medical homes, where continuity is an essential tenet.

Our study has several limitations. First, we focused on an underserved population; our results may not apply to other populations. Second, our sample size is small, though we did employ a comprehensive strategy to identify patients meeting our enrollment criteria during the study period, and we did reach theoretical saturation as evidenced by no new themes being introduced in the final interviews. Third, we conducted our study at a single site, and there may be other factors more prevalent at other sites contributing to readmission.

In summary, we found that even though patients were receiving the formal services that they needed, they were still being driven to make the decision to go to the ED based on based on long phone wait times for primary care and their belief or experience that primary care cannot treat their acute problems. We propose that educating patients about the capability and role of the primary care provider while concurrently streamlining telephone access to providers could enhance continuity and thereby prevent readmissions. Focusing entirely on arranging formal transitional care services, such as transportation and medications, is unlikely to be adequate in reducing readmissions.

Acknowledgements

Funders: Dr. Horwitz is supported by the National Institute on Aging (K08 AG038336) and by the American Federation for Aging Research through the Paul B. Beeson Career Development Award Program. This work was also supported by a grant from the Claude D. Pepper Older Americans Independence Center at Yale University School of Medicine (P30AG021342 NIH/NIA). No funding source had any role in the study design; in the collection, analysis, and interpretation of data; in the writing of the report; or in the decision to submit the article for publication. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institute on Aging, the National Institutes of Health, or the American Federation for Aging Research.

Access to data: Leora Horwitz had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

Prior presentations: An earlier version of this work was presented as an oral presentation at the Society of General Internal Medicine Annual Meeting in Orlando, FL on May 12, 2012.

Conflicts of interest: The authors have no conflicts of interest to report.

References

1. Jencks SF, Williams MV, Coleman EA. Rehospitalizations among patients in the Medicare fee-for-service program. The New England journal of medicine 2009;**360**(14):1418-28 doi: 10.1056/NEJMsa0803563[published Online First: Epub Date]|.
2. Hansen LO, Young RS, Hinami K, et al. Interventions to reduce 30-day rehospitalization: a systematic review. Annals of internal medicine 2011;**155**(8):520-8 doi: 10.1059/0003-4819-155-8-201110180-00008[published Online First: Epub Date]|.
3. Strunin L, Stone M, Jack B. Understanding rehospitalization risk: can hospital discharge be modified to reduce recurrent hospitalization? J Hosp Med 2007;**2**(5):297-304
4. Weissman JS, Stern RS, Epstein AM. The impact of patient socioeconomic status and other social factors on readmission: a prospective study in four Massachusetts hospitals. Inquiry : a journal of medical care organization, provision and financing 1994;**31**(2):163-72
5. Billings J, Zeitel L, Lukomnik J, et al. Impact of socioeconomic status on hospital use in New York City. Health affairs (Project Hope) 1993;**12**(1):162-73
6. Kalra AD, Fisher RS, Axelrod P. Decreased length of stay and cumulative hospitalized days despite increased patient admissions and readmissions in an area of urban poverty. Journal of general internal medicine 2010;**25**(9):930-5 doi: 10.1007/s11606-010-1370-5[published Online First: Epub Date]|.
7. Allaudeen N, Vidyarthi A, Maselli J, et al. Redefining readmission risk factors for general medicine patients. Journal of hospital medicine : an official publication of the Society of Hospital Medicine 2011;**6**(2):54-60 doi: 10.1002/jhm.805[published Online First: Epub Date]|.
8. Kangovi S, Grande D, Meehan P, et al. Perceptions of readmitted patients on the transition from hospital to home. Journal of hospital medicine : an official publication of the Society of Hospital Medicine 2012;**7**(9):709-12 doi: 10.1002/jhm.1966[published Online First: Epub Date]|.
9. Raven MC, Billings JC, Goldfrank LR, Manheimer ED, Gourevitch MN. Medicaid patients at high risk for frequent hospital admission: real-time identification and remediable risks. Journal of urban health : bulletin of the New York Academy of Medicine 2009;**86**(2):230-41 doi: 10.1007/s11524-008-9336-1[published Online First: Epub Date]|.
10. Englander H, Kansagara D. Planning and designing the care transitions innovation (C-Train) for uninsured and Medicaid patients. Journal of hospital medicine : an official publication of the Society of Hospital Medicine 2012;**7**(7):524-9 doi: 10.1002/jhm.1926[published Online First: Epub Date]|.
11. Annema C, Luttik ML, Jaarsma T. Reasons for readmission in heart failure: Perspectives of patients, caregivers, cardiologists, and heart failure nurses. Heart & lung : the journal of critical care 2009;**38**(5):427-34 doi: 10.1016/j.hrtlng.2008.12.002[published Online First: Epub Date]|.
12. Kroenke K, Spitzer RL, Williams JB. The Patient Health Questionnaire-2: validity of a two-item depression screener. Medical care 2003;**41**(11):1284-92 doi: 10.1097/01.mlr.0000093487.78664.3c[published Online First: Epub Date]|.
13. Smith PC, Schmidt SM, Allensworth-Davies D, et al. Primary care validation of a single-question alcohol screening test. Journal of general internal medicine 2009;**24**(7):783-8 doi: 10.1007/s11606-009-0928-6[published Online First: Epub Date]|.
14. Glaser BG, Strauss AL. *The Discovery of Grounded Theory: Strategies for Qualitative Research*. New York: Aldine, 1967.
15. Boling PA. Care transitions and home health care. Clinics in geriatric medicine 2009;**25**(1):135-48, viii doi: 10.1016/j.cger.2008.11.005[published Online First: Epub Date]|.

16. Pearson S, Inglis SC, McLennan SN, et al. Prolonged effects of a home-based intervention in patients with chronic illness. Archives of internal medicine 2006;**166**(6):645-50 doi: 10.1001/archinte.166.6.645[published Online First: Epub Date]|.

17. Davis MM, Devoe M, Kansagara D, Nicolaidis C, Englander H. "Did I do as best as the system would let me?" Healthcare professional views on hospital to home care transitions. Journal of general internal medicine 2012;**27**(12):1649-56 doi: 10.1007/s11606-012-2169-3[published Online First: Epub Date]|.

18. LaVela SL, Schectman G, Gering J, et al. Understanding health care communication preferences of veteran primary care users. Patient education and counseling 2012;**88**(3):420-6 doi: 10.1016/j.pec.2012.06.004[published Online First: Epub Date]|.

19. Wasson J, Gaudette C, Whaley F, et al. Telephone care as a substitute for routine clinic follow-up. JAMA : the journal of the American Medical Association 1992;**267**(13):1788-93

20. Curry SJ, McBride C, Grothaus LC, et al. A randomized trial of self-help materials, personalized feedback, and telephone counseling with nonvolunteer smokers. Journal of consulting and clinical psychology 1995;**63**(6):1005-14

21. Steinbauer JR, Korell K, Erdin J, et al. Implementing open-access scheduling in an academic practice. Family practice management 2006;**13**(3):59-64

22. Rose KD, Ross JS, Horwitz LI. Advanced access scheduling outcomes: a systematic review. Arch Intern Med 2011;**171**(13):1150-9 doi: 10.1001/archinternmed.2011.168[published Online First: Epub Date]|.

23. Zhou YY, Garrido T, Chin HL, et al. Patient access to an electronic health record with secure messaging: impact on primary care utilization. The American journal of managed care 2007;**13**(7):418-24

24. Coleman EA. Falling through the cracks: challenges and opportunities for improving transitional care for persons with continuous complex care needs. Journal of the American Geriatrics Society 2003;**51**(4):549-55

25. Wasson JH, Sauvigne AE, Mogielnicki RP, et al. Continuity of outpatient medical care in elderly men. A randomized trial. JAMA : the journal of the American Medical Association 1984;**252**(17):2413-7

26. van Walraven C, Oake N, Jennings A, et al. The association between continuity of care and outcomes: a systematic and critical review. Journal of evaluation in clinical practice 2010;**16**(5):947-56 doi: 10.1111/j.1365-2753.2009.01235.x[published Online First: Epub Date]|.

Appendix 1: List of questions from interview instrument

Tell me what happened to you since you went home between last discharge and now?

Do you think there is anything else that could have been done to have prevented you from coming back to hospital, and if so what?

When you have a change in your health at home, or start to feel sick at home, how do you make the decision to try to reach your PMD versus going to the ED?

How often do you try to reach your PMD as opposed to going to the ED?

When you have a change in your health at home, or start to feel sick at home, how long have you waited in the past before contacting your provider?

Can you tell me about the medications you take at home?

Has a financial barrier or problem ever resulted in you not being able to obtain the medications that you need? If so, tell me about it. Has this been a common problem for you?

How do you manage your medications at home?

Do you have any difficulty with your medications?

Tell me what it's like at home for you?

Do you have people who can help you at home?

Do you feel safe at home?

How do you think of the social support you have at home?

What is your financial situation?

In what ways do you have difficulty getting to and from your primary care appointments, if at all?

How do you get around?

In the last couple of weeks, have you been feeling depressed?

Have you ever been on any medications for depression?

Do you feel like these feelings of depression have caused you to have to come to hospital more than you otherwise would have to?

What's your relationship with your primary doctor at the Primary Care Center?

Do you know the name of your PMD, and do you have difficulty reaching your primary doctor if you're having a problem?

How can your primary doctor help to prevent you from having to be readmitted to the hospital do you think?

Can you think of anything more your primary doctor, or the Primary Care Center here at Yale could do?

What do you think are some other things that can be done to help prevent you from having to come back to the hospital, if anything?

Is there anything else that you think that either you or the physicians in the community could do to help you with that?

Do you need any more home support (home nursing care, VNA, etc) than you currently are receiving?

Finally, do you think it would be helpful for your primary doctor to call you at home to check in with you on a regular basis, and why?

Consolidated criteria for reporting qualitative studies (COREQ): 32-item checklist

No	Item	Guide questions/description
Domain 1: Research team and reflexivity		
Personal Characteristics		
1.	Interviewer/facilitator	Which author/s conducted the interview or focus group? Theodore Long
2.	Credentials	What were the researcher's credentials? *E.g. PhD, MD* MD
3.	Occupation	What was their occupation at the time of the study? Internal Medicine resident
4.	Gender	Was the researcher male or female? Male
5.	Experience and training	What experience or training did the researcher have? Researcher received training from both Dr. Horwitz, who has extensive experience with qualitative interviewing, as well as relevant textbooks on qualitative studies.
Relationship with participants		
6.	Relationship established	Was a relationship established prior to study commencement? No
7.	Participant knowledge of the interviewer	What did the participants know about the researcher? e*.g. personal goals, reasons for doing the research* Participants knew that the researcher was conducting interviews for the purpose of this research study.
8.	Interviewer characteristics	What characteristics were reported about the interviewer/facilitator? e.g. *Bias, assumptions, reasons and interests in the research topic* Researcher stated interest in research topic.
Domain 2: study design		
Theoretical framework		
9.	Methodological orientation and Theory	What methodological orientation was stated to underpin the study? *e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis* Grounded theory
Participant selection		
10.	Sampling	How were participants selected? *e.g. purposive, convenience, consecutive, snowball* Purposive
11.	Method of approach	How were participants approached? e*.g. face-to-face, telephone, mail, email* Face-to-face
12.	Sample size	How many participants were in the study? 17
13.	Non-participation	How many people refused to participate or dropped out? Reasons? 4 patients refused, stating that they were not interested in

No	Item	Guide questions/description
		participating
Setting		
14.	Setting of data collection	Where was the data collected? e.g. *home, clinic, workplace* Workplace
15.	Presence of non-participants	Was anyone else present besides the participants and researchers? No
16.	Description of sample	What are the important characteristics of the sample? *e.g. demographic data, date* No identifying information was used, we only used status as a primary care patient
Data collection		
17.	Interview guide	Were questions, prompts, guides provided by the authors? Was it pilot tested? The interview guide was iterative and tested through evaluating interviews sequentially.
18.	Repeat interviews	Were repeat interviews carried out? If yes, how many? No
19.	Audio/visual recording	Did the research use audio or visual recording to collect the data? We used an audio recording device
20.	Field notes	Were field notes made during and/or after the interview or focus group? No
21.	Duration	What was the duration of the interviews or focus group? 15 to 20 minutes per interview
22.	Data saturation	Was data saturation discussed? Yes, we felt that we reached theoretical saturation
23.	Transcripts returned	Were transcripts returned to participants for comment and/or correction? No
Domain 3: analysis and findingsz		
Data analysis		
24.	Number of data coders	How many data coders coded the data? Three
25.	Description of the coding tree	Did authors provide a description of the coding tree? Yes
26.	Derivation of themes	Were themes identified in advance or derived from the data? Derived from data
27.	Software	What software, if applicable, was used to manage the data? None
28.	Participant checking	Did participants provide feedback on the findings? No
Reporting		
29.	Quotations presented	Were participant quotations presented to illustrate the themes / findings? Was each quotation identified? e*.g. participant number* Quotations were used but not identified
30.	Data and findings consistent	Was there consistency between the data presented and the findings?

No	Item	Guide questions/description
		Yes
31.	Clarity of major themes	Were major themes clearly presented in the findings? Yes
32.	Clarity of minor themes	Is there a description of diverse cases or discussion of minor themes? Yes

Reasons for readmission in an underserved high-risk population: A qualitative analysis of a series of inpatient interviews

Journal:	*BMJ Open*
Manuscript ID:	bmjopen-2013-003212.R2
Article Type:	Research
Date Submitted by the Author:	11-Aug-2013
Complete List of Authors:	Long, Theodore; Yale School of Medicine, Internal Medicine Genao, Inginia; Yale University School of Medicine, Internal Medicine Horwitz, Leora; Yale University School of Medicine, Internal Medicine
Primary Subject Heading:	Qualitative research
Secondary Subject Heading:	Health services research, Communication, General practice / Family practice
Keywords:	Quality in health care < HEALTH SERVICES ADMINISTRATION & MANAGEMENT, PRIMARY CARE, QUALITATIVE RESEARCH

Title: Reasons for readmission in an underserved high-risk population: A qualitative analysis of a series of inpatient interviews

Authors: Theodore Long, MD;[1,2] Inginia Genao, MD;[3] Leora I. Horwitz, MD, MHS[2-4]

Running Title: High-Risk Readmissions

Author affiliations:

[1]Internal Medicine Residency Program, Department of Internal Medicine, Yale School of Medicine, New Haven, CT

[2]The Robert Wood Johnson Foundation Clinical Scholars Program, Yale School of Medicine, New Haven, CT

[3]Section of General Internal Medicine, Department of Internal Medicine, Yale School of Medicine, New Haven, CT

[4]Center for Outcomes Research and Evaluation, Yale-New Haven Hospital, New Haven, CT

Corresponding author:
Theodore Long, MD
Robert Wood Johnson Clinical Scholars Program
333 Cedar Street
SHM IE-61
PO Box 208088
New Haven, CT 06520
Tel: 203.785.4148
Fax: 203.785.3461

Word count: 3498

Tables: 4

Figures: 0

References: 28

Word count (abstract): 214

Key words: access to care, care transitions, underserved populations, qualitative research, primary care

Abstract

Objective: To gather qualitative data to elucidate the reasons for readmissions in a high-risk population of underserved patients.

Design: We created an instrument with 27 open-ended questions based on current interventions.

Setting: Yale-New Haven Hospital.

Patients: Patients at the Yale Adult Primary Care Center (PCC).

Measurements: We conducted semi-structured qualitative interviews of patients who had four or more admissions in the previous six months and were currently readmitted to the hospital.

Results: We completed 17 interviews and identified themes relating to risk of readmission. We found that patients went directly to the Emergency Department (ED) when they experienced a change in health status without contacting their primary provider. Reasons for this included poor telephone or urgent care access and the belief that the PCC could not treat acute illness. Many patients could not name their primary provider. Conversely, every patient except one reported being able to obtain medications without undue financial burden, and every patient reported receiving adequate home care services.

Conclusions: These high-risk patients were receiving the formal services that they needed, but were making the decision to go to the ED because of inadequate access to care and fragmented primary care relationships. Formal transitional care services are unlikely to be adequate in reducing readmissions without also addressing primary care access and continuity.

Article Summary

Article Focus:

- We asked the question of what unique factors in the post-discharge experience for patients were contributing to readmissions in a high-risk urban underserved population
- We explored patient perceptions of areas of current interventions, including home services, medications, and transportation
- We propose interventions based on our findings, and compare our results to other studies looking at readmissions

Key Messages:

- We found that there are factors contributing to readmissions that are not addressed by current intervention strategies
- In our high-risk population, there was a lack of primary care relationship and a tendency to delay seeking care that resulted in patients triaging themselves to the Emergency Department

Strengths and Limitations of this Study:

- Limitations include this being a single site study with a focus on patients at the highest risk of readmission; thus findings may not be comparable to other populations
- Strengths include elucidating the perspectives of an underrepresented population of patients and defining key areas for intervention in this population

Introduction

Hospital readmissions represent a significant cost to the healthcare system and are a burden to patients. Nationally, 19.6% of Medicare beneficiaries discharged from the hospital are readmitted within 30 days and 34.0% are readmitted within 90 days [1]. Many attempts have been made to identify and address the issues leading to readmission. However, no single strategy has been found to reproducibly reduce readmissions [2]. Most studies evaluating this problem have focused on chart review and administrative data, but there is a paucity of qualitative information from the perspectives of patients [3]. It has been unclear what happens to patients once they are discharged from the hospital, and whether their health care outside the hospital could be improved in order to prevent hospital readmissions.

This study examined patient experiences after hospital discharge by conducting qualitative interviews of high-risk patients during readmission. We studied the urban underserved population of patients at Yale-New Haven Hospital (YNHH) with the highest incidence of readmission. We chose to assess this population because the urban underserved comprise a disproportionate share of readmissions at many academic medical centers [4-7]. Furthermore, patients with low socioeconomic status have been shown to have a distinctly challenging experience transitioning from inpatient admission to home [8-10].

We sought to understand the perspectives of underserved patients at the highest risk of readmission in order to determine how future interventions could be more effective for this population. We examined their transition of care from the hospital to home, focusing on how they interacted with the health system once they left the hospital and what factors drove them to be readmitted so frequently.

Methods

Setting

We focused our study on the underserved population at YNHH, a 966 bed urban academic medical center. We interviewed patients cared for at the Yale Adult Primary Care Center (PCC), which is a hospital-based clinic serving primarily the low-income residents of New Haven. The PCC is staffed by internal medicine residents who are typically present for one half day per week as well as part and full time attending providers. Residents are assigned to the PCC for their entire three years of training.

Study Cohort

Our study population was comprised of PCC patients with four or more admissions in the past six months, which is one of YNHH's criteria for high risk. At the time of this study, less than 150 patients at YNHH met this high-risk criterion, and of these 25% were PCC patients. We arranged for our medical record system to send a daily email listing all patients designated as high-risk currently admitted at YNHH. The criteria for this designation are either four or more admissions in the past six months or a diagnosis of heart failure. From the daily list, we identified patients who had four or more admissions in the past six months and who had an established primary care provider in the PCC as well as at least two completed clinic notes from the prior 12 months. We set out the requirement for at least two clinic notes to ensure that enrolled patients were actively followed by the PCC. We then restricted this group to patients who were currently readmitted within 30 days of their last date of discharge from YNHH. All interviews were conducted inpatient during the patients' readmission stays. We completed the study from October, 2011 to April, 2012. Interviews were completed on both weekdays and weekends. Twenty-one eligible patients were approached during the study period, and four declined.

Design

We created an instrument with 27 open-ended questions based on areas targeted by current interventions as well as other qualitative studies looking at readmissions [3 11]. Given that most interventions are focused on supporting the patient in the post-discharge period, we focused our study on understanding the patient experience of several key support domains: social/emotional support (from friends, family, and clinicians), instrumental health system support (medications, transportation, access to outpatient care), and informational support (knowledge and self-efficacy) [12]. We then conducted pilot interviews and solicited feedback about the interview questions from patients. The instrument was revised based on this feedback. We also extensively reviewed the first complete interview transcription, and further revised the instrument based on this feedback as well. The final questions in the instrument included the areas of transportation, support systems, medications, formal services, health literacy, access to care, relationship with provider, communication with providers, and transitions of care (see Appendix 1 for list of questions). For questions asking for an affirmative/negative or numerical response, we used a strategy of planned prompts and probes to extend the narrative. We also included screening for depression via the Patient Health Questionnaire-2 (PHQ-2) [13] and for unhealthy alcohol use via the National Institute on Alcohol Abuse and Alcoholism (NIAAA) recommended tool [14]. The IRB waived the written consent requirement due to the fact that no identifying information was used. Informed consent was obtained verbally from all study participants. One investigator (T.L.) conducted semi-structured interviews. The interviews were recorded and then transcribed by a subcontracted transcriber.

Analysis

Three investigators (T.L., I.G., L.H.) independently generated codes from the primary transcriptions. The codes represented themes found in the data. The investigators initially coded the first four transcriptions independently and then reviewed the coding scheme and resolved discrepancies collaboratively. The transcriptions were saved as Microsoft Word documents, with codes being tracked as Comments within these documents. This process was repeated two more times, with all transcriptions being coded independently and then meeting to come to a group consensus. It was decided ahead of time that transcriptions would be coded until theoretical saturation was reached and no new codes were being introduced in the interviews. A final code list was developed using the constant comparative method [15]. The codes were organized into 11 main themes.

Results

Thirty-six patients met inclusion criteria at the onset of the study. Of the 36 patients, 21 eligible patients were approached, and four declined. We completed 17 interviews (11 women, 6 men). On average, the interviews were 15 to 20 minutes long. For the overall cohort of 36 patients meeting inclusion criteria, patient characteristics are provided in Table 1. When patients presented to the ED, 67% of the time they were admitted to the hospital (see Table 2 for hospital admission and ED diagnoses). Patients also had multiple visits to the PCC and the ED (Table 3). Sixteen of the 17 patients we interviewed screened negative for unhealthy alcohol use per the NIAAA tool and 47% had a positive screen for depression per the PHQ-2.

Table 1: Patient Characteristics for Cohort Meeting Inclusion Criteria (N=36)

Age	Number (%)
19 to 39	10 (28)

40 to 64	18 (50)
65 or above	8 (22)
Race/Ethnicity	
Hispanic	8 (22)
Black	16 (44)
White	11 (31)
Other	1 (3)
Insurance Status	
Medicaid only	15 (42)
Medicare only	1 (3)
Medicaid and Medicare	16 (44)
Self-pay	1 (3)
Other	3 (8)

Table 2: Most Common Diagnoses for ED Visits and Hospital Admissions in 2011

ED Visit Diagnosis	*Hospital Admission Diagnosis*
Abdominal pain (16%)	Abdominal pain (12%)
Chest pain (9%)	Nausea/Vomiting, Abdominal pain (9%)
Nausea/Vomiting, Abdominal pain (9%)	COPD exacerbation (8%)
COPD exacerbation (5%)	Shortness of breath (6%)
GI bleed (4%)	Congestive heart failure (6%)
Other (43%)	Other (59%)

Table 3: PCC and ED Utilization

Primary Care and ED Characteristics	N=36
Medications, mean	12.0
Polypharmacy (>6 medications), n (%)	30 (83)
Number of patient diagnoses (comorbidity), mean	7.1
ED visits in 2011, mean	6.6
Number of follow-up appointments made with PCC	66
Number of follow-up appointments kept	29
Number of patients using behavioral health, n (%)	5 (14)
Average number of PCC visits in the last 12 months	4.3

We identified 11 themes (Table 4), and describe five relating to risk of readmission: fragmented primary care relationships contributing to avoidance of ambulatory care, self triage leading to potentially avoidable ED use, adequacy of formal services, heavy reliance on informal support systems, and inadequate access to care. The codes contributing to these five themes were consistent throughout the interviews and pertained to either reasons for readmission or current interventions targeted at decreasing readmissions. The other themes represented self-reported descriptions, such as substance abuse for the theme of patient characteristics. Overall, we found that while patients described receiving adequate formal services, barriers in accessing care and disjointed primary care relationships led to patients making their own triage decisions and seeking other support systems.

Table 4: 11 Main Themes

Heavy Reliance on Informal Support Systems
Adequacy of Formal Services
Health Literacy
Inadequate Access to Care
Fragmented Primary Care Relationships Contributing to Avoidance of Ambulatory Care
Self Triage Leading to Potentially Avoidable ED Use
Patient Phone Call
Discharge Planning
Patient Characteristics
Readmissions (same or different complaint)
Post-Discharge Course

Fragmented Primary Care Relationships Contributing to Avoidance of Ambulatory Care

Participants described a fragmented relationship with their providers. Nine patients were able to name their primary provider, while seven patients were unable to. In terms of their connection with their provider, many expressed concern: "I ain't got no relationship. I don't even know the person. They don't even know me. There was no relationship."

Patients further referred to provider turnover and large provider teams as deleterious to developing a relationship with their providers. One patient explained: "Well, I hate that they keep switching doctors. They can't really keep the same doctor because as soon as you get comfortable with one person they'll let you know somebody else is there. Now it's like you got to learn this person all over. I hate changing doctors. I don't like that." Another patient described improving the relationship with her primary provider, stating "It [would] make me feel better knowing that somebody cares […] They could give advice on the phone telling me what I should do. And I could do that to prevent going to the hospital because I'm in the hospital a lot."

Self Triage Leading to Potentially Avoidable ED Use

We found that patients were typically going directly to the Emergency Department (ED) without contacting their primary care provider: "I could tell the pain, if it is severe enough to go to the PCC and sit around to be called in the clinic or do I need to just get out there and go right to the emergency room. So I could tell the difference, I learned to know my body now after getting so sick and the last three years I've been very sick."

Patients commonly cited inability to reach their primary provider via telephone and the belief that the PCC could not treat acute illness as reasons for going directly to the ED. One patient explained that "I know that once I get there [to the PCC], they would send me anyway so

I might just as well go to the [ED] first."

Finally, amongst patients who decided to go to the ED instead of going for an urgent primary care visit, a common theme was delaying action until the situation became more serious. One patient commented "I wait[ed] instead to get better […] my head was pounding and when I walked to the bathroom I'd be staggering […] I mashed my lifeline, and the ambulance picked me up."

Adequacy of Formal Services

We found that patients had limited or no difficulty accessing formal services such as medication assistance, home care, and transportation. All patients except one were able to obtain medications either despite financial barriers or with no financial barriers. One patient noted "I got medical and they basically pay for [medications]." Patients similarly found home care accessible, describing "Well, I have a nurse coming usually once a week and more often if there is something going on." Formal transportation was obtained with minimal difficulty, with one patient explaining "They have a car that gets me […] I have to call and make an appointment and they would call people telling them two days in advance."

Heavy Reliance on Informal Support Systems

Despite the widespread availability and use of formal post-discharge support systems, patients reported still relying heavily on informal support from friends and family members to help with transportation and medication management. One patient described "So my daughter sets them out now so it makes it easier for the visit nurse, so that's how I manage my medication at home. They put it in a little blue container and my daughter sets them up by the week." Another patient commented "If I can't move, my family give me a ride - my daughter, my man, my niece, my nephew, my son." Patients demonstrated resilient attitudes based on the high degree of support they received from friends and family members, and notably described that they did not feel lonely or socially isolated despite spending a great deal of time in the hospital. Patients also reported feeling safe at home.

Inadequate Access to Care

The most commonly cited problem inhibiting patients from accessing medical care was an impaired ability to speak to their provider on the telephone. This was described as both difficulty in reaching someone on the phone as well as long waiting times before receiving a call back from a provider. As one patient noted, “I don’t call primary care because it takes too long to get through to anybody until you get the call – I could have gone on a trip to Europe and back.”

Patients also noted that they had stopped even trying to call based on prior experiences: “I try to call the Primary Care Center. But it’s like that one time that took 7 hours. I haven’t called them [since]. So it’s like either I stick it out and let the pain or whatever subside, or I go down to the ER. If I called them one time and it took them some hours to get back to me, I feel that it’s useless if I call again.”

Discussion

In this study of underserved patients with a high frequency of hospital readmissions, we found that there may be factors contributing to readmissions that are not addressed by most current interventions, which typically target access to formal outpatient services [3 16 17]. Contrary to our expectations, patients from our sample did not have difficulty accessing medications, home care, or transportation. Rather, the primary factors contributing to readmissions that were consistently brought up by patients in our study were self triage to the ED and a lack of primary care relationship.

While other studies have examined the challenges in transitions from inpatient care [8

18], we explored how patients interacted with the health system when they were home. We found that patients delayed care and then made the decision to go to the ED without attempting to contact their primary providers. Delays in care may have increased risk for readmission. The most consistent reasons for not reaching out to their primary providers were inability to speak with a provider on the phone, the belief that their primary care provider could not manage urgent issues, and patient perception that their primary care provider could not address their concerns in a timely manner.

Our results differ from other qualitative studies evaluating readmissions. In a recent article by Strunin et al (2007), patients expressed that they had inadequate medical care at home and lacked transportation to appointments [3]. In contrast, we found that these needs were being met for our high-risk patients. Similarly, a recent survey by Kangovi et al (2012) of patients that had been readmitted found that lack of medication adherence after discharge was commonly attributed to difficulty paying for medications and obtaining transportation [8]. In our sample of patients, only one patient reported not being able to obtain medications due to cost. Although other studies have included patients with one or more readmission within 30 days of discharge, we utilized more stringent enrollment criteria, requiring patients to have had four or more admissions in the prior six months. The high-risk underserved patients that we enrolled may have had more interaction with the hospital system than other patients with fewer hospital admissions, and therefore may have had more opportunity to be linked in with formal services such as medication assistance, visiting nurse services, and transportation arranged through the hospital. However, future studies will be needed to determine if there is indeed a direct association between increased interaction with the hospital system and increased formal services compared to other patient populations.

Our findings suggest that this population of patients needs more targeted interventions to address the consistently stated problems of self triage and a lack of primary care relationship. Another recent study by Kangovi et al (2013) described a social norm of high-risk patients preferring the hospital for care when they have a change in their health status [19]. They similarly conclude that targeted interventions should address the needs of high-risk patients in the ambulatory setting.

First, improving telephone access to primary care offices is important, as many primary care patients prefer this method of communication, and it is linked to improved patient outcomes [20-22]. An effective telephone system would triage urgent issues, and would ensure that a member of the patient’s provider team is available to field urgent calls. Patients in our study commonly mentioned that they wanted to receive a timely call back for urgent issues. Open access scheduling, which minimizes scheduled appointments to maximize same-day visit availability, typically also improves telephone access by opening up the calendar and streamlining the types of appointments that can be made. The time taken per call is consequently shorter [23 24]. Alternatively, many new electronic medical record systems allow secure messaging through the electronic medical record, thereby reducing demand for telephone access, and facilitating timely responses to urgent calls [25 26]. Future research regarding the best modes of communication with providers will be an important area of inquiry moving forward.

Second, many patients in our study had stopped calling their primary care provider because of their perceptions of the primary care clinic as incapable of handing acute medical concerns. Patient experiences, such as being transferred from their primary care office to the ED, shaped their perception of the primary care clinic. Once access to providers has been improved and the lack of primary care relationship has been repaired, we would suggest educating patients about the scope of their primary care clinics as urgent care centers, as well as the role of their primary providers in their care when they have a change in their health status. In addition, providers should discuss their role in helping patients make triage decisions when they get sick at home.

Third, patients in our study described inadequate continuity with their providers. Patient-provider continuity has been consistently associated with improved patient outcomes and satisfaction [27 28]. To address the lack of primary care relationship that patients described, there must first be a system in place that enables patients to have continuity with their teams when they have a change in their health status [10]. This is especially difficult in clinics staffed by residents who are present one half day per week, which is a common model for internal medicine residency programs. When patients have urgent issues that arise, they are often seen by providers who are not part of their primary care team. A strategy for improving upon this situation would be to arrange residents into practice-partner teams where they would work together to care for a larger panel of patients. While the patients would still need to become familiar with a team of resident physicians, this has the potential to make patients feel more comfortable seeking care for acute issues. This team-based care would also aid in the conversion of primary care clinics to patient-centered medical homes, where continuity is an essential tenet.

Our study has several limitations. First, we focused on an underserved population; our results may not apply to other populations. Second, our sample size is small, though we did employ a comprehensive strategy to identify patients meeting our enrollment criteria during the study period, and we did reach theoretical saturation as evidenced by no new themes being introduced in the final interviews. Third, we conducted our study at a single site, and there may be other factors more prevalent at other sites contributing to readmission.

In summary, we found that even though patients were receiving the formal services that they needed, they were still being driven to make the decision to go to the ED based on based on long phone wait times for primary care and their belief or experience that primary care cannot treat their acute problems. We propose that educating patients about the capability and role of the primary care provider while concurrently streamlining telephone access to providers could enhance continuity and thereby prevent readmissions. Focusing entirely on arranging formal transitional care services, such as transportation and medications, is unlikely to be adequate in reducing readmissions.

Acknowledgements

Funders: Dr. Horwitz is supported by the National Institute on Aging (K08 AG038336) and by the American Federation for Aging Research through the Paul B. Beeson Career Development Award Program. This work was also supported by a grant from the Claude D. Pepper Older Americans Independence Center at Yale University School of Medicine (P30AG021342 NIH/NIA). No funding source had any role in the study design; in the collection, analysis, and interpretation of data; in the writing of the report; or in the decision to submit the article for publication. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institute on Aging, the National Institutes of Health, or the American Federation for Aging Research.

Access to data: Leora Horwitz had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

Prior presentations: An earlier version of this work was presented as an oral presentation at the Society of General Internal Medicine Annual Meeting in Orlando, FL on May 12, 2012.

Conflicts of interest: The authors have no conflicts of interest to report.

Contributorship: The three authors are justifiably credited with authorship, according to the authorship criteria of ICMJE guidelines. Theodore Long: project management, conception, design, analysis and interpretation of data, drafting of the manuscript, final approval given; all remaining authors: conception and design, analysis, critical revision of manuscript, final approval given.

Data sharing: We have no additional unpublished data that has been made available to other parties.

References

1. Jencks SF, Williams MV, Coleman EA. Rehospitalizations among patients in the Medicare fee-for-service program. The New England journal of medicine 2009;**360**(14):1418-28 doi: 10.1056/NEJMsa0803563[published Online First: Epub Date]|.
2. Hansen LO, Young RS, Hinami K, et al. Interventions to reduce 30-day rehospitalization: a systematic review. Annals of internal medicine 2011;**155**(8):520-8 doi: 10.1059/0003-4819-155-8-201110180-00008[published Online First: Epub Date]|.
3. Strunin L, Stone M, Jack B. Understanding rehospitalization risk: can hospital discharge be modified to reduce recurrent hospitalization? J Hosp Med 2007;**2**(5):297-304
4. Weissman JS, Stern RS, Epstein AM. The impact of patient socioeconomic status and other social factors on readmission: a prospective study in four Massachusetts hospitals. Inquiry : a journal of medical care organization, provision and financing 1994;**31**(2):163-72
5. Billings J, Zeitel L, Lukomnik J, et al. Impact of socioeconomic status on hospital use in New York City. Health affairs (Project Hope) 1993;**12**(1):162-73
6. Kalra AD, Fisher RS, Axelrod P. Decreased length of stay and cumulative hospitalized days despite increased patient admissions and readmissions in an area of urban poverty. Journal of general internal medicine 2010;**25**(9):930-5 doi: 10.1007/s11606-010-1370-5[published Online First: Epub Date]|.
7. Allaudeen N, Vidyarthi A, Maselli J, et al. Redefining readmission risk factors for general medicine patients. Journal of hospital medicine : an official publication of the Society of Hospital Medicine 2011;**6**(2):54-60 doi: 10.1002/jhm.805[published Online First: Epub Date]|.
8. Kangovi S, Grande D, Meehan P, et al. Perceptions of readmitted patients on the transition from hospital to home. Journal of hospital medicine : an official publication of the Society of Hospital Medicine 2012;**7**(9):709-12 doi: 10.1002/jhm.1966[published Online First: Epub Date]|.
9. Raven MC, Billings JC, Goldfrank LR, Manheimer ED, Gourevitch MN. Medicaid patients at high risk for frequent hospital admission: real-time identification and remediable risks. Journal of urban health : bulletin of the New York Academy of Medicine 2009;**86**(2):230-41 doi: 10.1007/s11524-008-9336-1[published Online First: Epub Date]|.
10. Englander H, Kansagara D. Planning and designing the care transitions innovation (C-Train) for uninsured and Medicaid patients. Journal of hospital medicine : an official publication of the Society of Hospital Medicine 2012;**7**(7):524-9 doi: 10.1002/jhm.1926[published Online First: Epub Date]|.
11. Annema C, Luttik ML, Jaarsma T. Reasons for readmission in heart failure: Perspectives of patients, caregivers, cardiologists, and heart failure nurses. Heart & lung : the journal of critical care 2009;**38**(5):427-34 doi: 10.1016/j.hrtlng.2008.12.002[published Online First: Epub Date]|.
12. Cohen S, Wills TA. Stress, social support, and the buffering hypothesis. Psychological bulletin 1985;**98**(2):310-57
13. Kroenke K, Spitzer RL, Williams JB. The Patient Health Questionnaire-2: validity of a two-item depression screener. Medical care 2003;**41**(11):1284-92 doi: 10.1097/01.mlr.0000093487.78664.3c[published Online First: Epub Date]|.
14. Smith PC, Schmidt SM, Allensworth-Davies D, et al. Primary care validation of a single-question alcohol screening test. Journal of general internal medicine 2009;**24**(7):783-8 doi: 10.1007/s11606-009-0928-6[published Online First: Epub Date]|.
15. Glaser BG, Strauss AL. *The Discovery of Grounded Theory: Strategies for Qualitative Research*. New York: Aldine, 1967.
16. Boling PA. Care transitions and home health care. Clinics in geriatric medicine 2009;**25**(1):135-48, viii doi: 10.1016/j.cger.2008.11.005[published Online First: Epub Date]|.

17. Pearson S, Inglis SC, McLennan SN, et al. Prolonged effects of a home-based intervention in patients with chronic illness. Archives of internal medicine 2006;**166**(6):645-50 doi: 10.1001/archinte.166.6.645[published Online First: Epub Date]|.
18. Davis MM, Devoe M, Kansagara D, Nicolaidis C, Englander H. "Did I do as best as the system would let me?" Healthcare professional views on hospital to home care transitions. Journal of general internal medicine 2012;**27**(12):1649-56 doi: 10.1007/s11606-012-2169-3[published Online First: Epub Date]|.
19. Kangovi S, Barg FK, Carter T, Long JA, Shannon R, Grande D. Understanding why patients of low socioeconomic status prefer hospitals over ambulatory care. Health affairs 2013;**32**(7):1196-203 doi: 10.1377/hlthaff.2012.0825[published Online First: Epub Date]|.
20. LaVela SL, Schectman G, Gering J, et al. Understanding health care communication preferences of veteran primary care users. Patient education and counseling 2012;**88**(3):420-6 doi: 10.1016/j.pec.2012.06.004[published Online First: Epub Date]|.
21. Wasson J, Gaudette C, Whaley F, et al. Telephone care as a substitute for routine clinic follow-up. JAMA : the journal of the American Medical Association 1992;**267**(13):1788-93
22. Curry SJ, McBride C, Grothaus LC, et al. A randomized trial of self-help materials, personalized feedback, and telephone counseling with nonvolunteer smokers. Journal of consulting and clinical psychology 1995;**63**(6):1005-14
23. Steinbauer JR, Korell K, Erdin J, et al. Implementing open-access scheduling in an academic practice. Family practice management 2006;**13**(3):59-64
24. Rose KD, Ross JS, Horwitz LI. Advanced access scheduling outcomes: a systematic review. Arch Intern Med 2011;**171**(13):1150-9 doi: 10.1001/archinternmed.2011.168[published Online First: Epub Date]|.
25. Zhou YY, Garrido T, Chin HL, et al. Patient access to an electronic health record with secure messaging: impact on primary care utilization. The American journal of managed care 2007;**13**(7):418-24
26. Coleman EA. Falling through the cracks: challenges and opportunities for improving transitional care for persons with continuous complex care needs. Journal of the American Geriatrics Society 2003;**51**(4):549-55
27. Wasson JH, Sauvigne AE, Mogielnicki RP, et al. Continuity of outpatient medical care in elderly men. A randomized trial. JAMA : the journal of the American Medical Association 1984;**252**(17):2413-7
28. van Walraven C, Oake N, Jennings A, et al. The association between continuity of care and outcomes: a systematic and critical review. Journal of evaluation in clinical practice 2010;**16**(5):947-56 doi: 10.1111/j.1365-2753.2009.01235.x[published Online First: Epub Date]|.

Appendix 1: List of questions from interview instrument

Tell me what happened to you since you went home between last discharge and now?

Do you think there is anything else that could have been done to have prevented you from coming back to hospital, and if so what?

When you have a change in your health at home, or start to feel sick at home, how do you make the decision to try to reach your PMD versus going to the ED?

How often do you try to reach your PMD as opposed to going to the ED?

When you have a change in your health at home, or start to feel sick at home, how long have you waited in the past before contacting your provider?

Can you tell me about the medications you take at home?

Has a financial barrier or problem ever resulted in you not being able to obtain the medications that you need? If so, tell me about it. Has this been a common problem for you?

How do you manage your medications at home?

Do you have any difficulty with your medications?

Tell me what it's like at home for you?

Do you have people who can help you at home?

Do you feel safe at home?

How do you think of the social support you have at home?

What is your financial situation?

In what ways do you have difficulty getting to and from your primary care appointments, if at all?

How do you get around?

In the last couple of weeks, have you been feeling depressed?

Have you ever been on any medications for depression?

Do you feel like these feelings of depression have caused you to have to come to hospital more than you otherwise would have to?

What's your relationship with your primary doctor at the Primary Care Center?

Do you know the name of your PMD, and do you have difficulty reaching your primary doctor if you're having a problem?

How can your primary doctor help to prevent you from having to be readmitted to the hospital do you think?

Can you think of anything more your primary doctor, or the Primary Care Center here at Yale could do?

What do you think are some other things that can be done to help prevent you from having to come back to the hospital, if anything?

Is there anything else that you think that either you or the physicians in the community could do to help you with that?

Do you need any more home support (home nursing care, VNA, etc) than you currently are receiving?

Finally, do you think it would be helpful for your primary doctor to call you at home to check in with you on a regular basis, and why?

Title: Reasons for readmission in an underserved high-risk population: A qualitative analysis of a series of inpatient interviews

Authors: Theodore Long, MD;[1,2] Inginia Genao, MD;[~~2~~ 3] Leora I. Horwitz, MD, MHS[2-4~~2,3~~]

Running Title: High-Risk Readmissions

Author affiliations:

[1] Internal Medicine Residency Program, Department of Internal Medicine, Yale School of Medicine, New Haven, CT

[2] The Robert Wood Johnson Foundation Clinical Scholars Program, Yale School of Medicine, New Haven, CT

[3~~2~~] Section of General Internal Medicine, Department of Internal Medicine, Yale School of Medicine, New Haven, CT

[4~~3~~] Center for Outcomes Research and Evaluation, Yale-New Haven Hospital, New Haven, CT

Formatted: Font color: Black, Pattern: Clear (White)

Corresponding author:
Theodore Long, MD
Robert Wood Johnson Clinical Scholars Program
333 Cedar Street
SHM IE-61
PO Box 208088
New Haven, CT 06520
Tel: 203.785.4148
Fax: 203.785.3461~~Yale Traditional Internal Medicine Residency Training Program~~
~~PO Box 208030~~
~~New Haven, CT 06520-8030~~
~~Tel: (203) 785-4123~~
~~Fax: (203) 785-7258~~
~~theodore.long@yale.edu~~

Formatted: Font: (Default) Times New Roman, 12 pt, Not Bold

Formatted: Font: (Default) Times New Roman, 12 pt, Not Bold

Word count: 3498~~3347~~

Tables: 4~~1~~

Figures: 0

References: 28~~6~~

Word count (abstract): 214

Key words: access to care, care transitions, underserved populations, qualitative research, primary care

Abstract

Objective: To gather qualitative data to elucidate the reasons for readmissions in a high-risk population of underserved patients.

Design: We created an instrument with 27 open-ended questions based on current interventions.

Setting: Yale-New Haven Hospital.

Patients: Patients at the Yale Adult Primary Care Center (PCC).

Measurements: We conducted semi-structured qualitative interviews of patients who had four or more admissions in the previous six months and were currently readmitted to the hospital.

Results: We completed 17 interviews and identified themes relating to risk of readmission. We found that patients went directly to the Emergency Department (ED) when they experienced a change in health status without contacting their primary provider. Reasons for this included poor telephone or urgent care access and the belief that the PCC could not treat acute illness. Many patients could not name their primary provider. Conversely, every patient except one reported being able to obtain medications without undue financial burden, and every patient reported receiving adequate home care services.

Conclusions: These high-risk patients were receiving the formal services that they needed, but were making the decision to go to the ED because of inadequate access to care and fragmented primary care relationships. Formal transitional care services are unlikely to be adequate in reducing readmissions without also addressing primary care access and continuity.

Article Summary

Article Focus:

- We asked the question of what unique factors in the post-discharge experience for patients were contributing to readmissions in a high-risk urban underserved population
- We explored patient perceptions of areas of current interventions, including home services, medications, and transportation
- We propose interventions based on our findings, and compare our results to other studies looking at readmissions

Key Messages:

- We found that there are factors contributing to readmissions that are not addressed by current intervention strategies
- In our high-risk population, there was a lack of primary care relationship and a tendency to delay seeking care that resulted in patients triaging themselves to the Emergency Department

Strengths and Limitations of this Study:

- Limitations include this being a single site study with a focus on patients at the highest risk of readmission; thus findings may not be comparable to other populations
- Strengths include elucidating the perspectives of an underrepresented population of patients and defining key areas for intervention in this population

Introduction

Hospital readmissions represent a significant cost to the healthcare system and are a burden to patients. Nationally, 19.6% of Medicare beneficiaries discharged from the hospital are readmitted within 30 days and 34.0% are readmitted within 90 days [1]. Many attempts have been made to identify and address the issues leading to readmission. However, no single strategy has been found to reproducibly reduce readmissions [2]. Most studies evaluating this problem have focused on chart review and administrative data, but there is a paucity of qualitative information from the perspectives of patients [3]. It has been unclear what happens to patients once they are discharged from the hospital, and whether their health care outside ~~of~~ the hospital could be improved in order to prevent hospital readmissions.

This study examined patient experiences after hospital discharge by conducting qualitative interviews of high-risk patients during readmission. We studied the urban underserved population of patients at Yale-New Haven Hospital (YNHH) with the highest incidence of readmission. We chose to assess this population because the urban underserved comprise a disproportionate share of readmissions at many academic medical centers [4-7]. Furthermore, patients with low socioeconomic status have been shown to have a distinctly challenging experience transitioning from inpatient admission to home [8-10].

We sought to understand the perspectives of underserved patients at the highest risk of readmission in order to determine how future interventions could be more effective for this population. We examined their transition of care from the hospital to home, focusing on how they interacted with the health system once they left the hospital and what factors drove them to be readmitted so frequently.

Methods

Setting

We focused our study on the underserved population at YNHH, a 966 bed urban academic medical center. We interviewed patients cared for at the Yale Adult Primary Care Center (PCC), which is a hospital-based clinic serving primarily the low-income residents of New Haven. The PCC is staffed by internal medicine residents who are typically present for one half day per week as well as part and full time attending providers. Residents are assigned to the PCC for their entire three years of training.

Study Cohort

Our study population was comprised of PCC patients with four or more admissions in the past six months, which is one of YNHH's criteria for high risk. At the time of this study, less than 150 patients at YNHH met this high-risk criterion, and of these 25% were PCC patients. We arranged for our medical record system to send a daily email listing all patients designated as high-risk currently admitted at YNHH. The criteria for this designation are either four or more admissions in the past six months or a diagnosis of heart failure. From the daily list, we identified patients who had four or more admissions in the past six months and who had an established primary care provider in the PCC as well as at least two completed clinic notes from the prior 12 months. We set out the requirement for at least two clinic notes to ensure that enrolled patients were actively followed by the PCC. We then restricted this group to patients who were currently readmitted within 30 days of their last date of discharge from YNHH. All interviews were conducted inpatient during the patients' readmission stays. We completed the study from October, 2011 to April, 2012. Interviews were completed on both weekdays and weekends. Twenty-one eligible patients were ~~identified~~ approached during the study period, and four declined.

Design

We created an instrument with 27 open-ended questions based on areas targeted by current interventions as well as other qualitative studies looking at readmissions [3 11]. Given that most interventions are focused on supporting the patient in the post-discharge period, we focused our study on understanding the patient experience of several key support domains: social/emotional support (from friends, family, and clinicians), instrumental health system support (medications, transportation, access to outpatient care), and informational support (knowledge and self-efficacy) [12]. We then conducted pilot interviews and solicited feedback about the interview questions from patients. The instrument was revised based on this feedback. We also extensively reviewed the first complete interview transcription, and further revised the instrument based on this feedback as well. The final questions in the instrument included the areas of transportation, support systems, medications, formal services, health literacy, access to care, relationship with provider, communication with providers, and transitions of care (see Appendix 1 for list of questions). For questions asking for an affirmative/negative or numerical response, we used a strategy of planned prompts and probes to extend the narrative. We also included screening for depression via the Patient Health Questionnaire-2 (PHQ-2) [13] and for unhealthy alcohol use via the National Institute on Alcohol Abuse and Alcoholism (NIAAA) recommended tool [14]. The IRB waived the written consent requirement due to the fact that no identifying information was used. Informed consent was obtained verbally from all study participants. One investigator (T.L.) conducted semi-structured interviews. The interviews were recorded and then transcribed by a subcontracted transcriber.

Analysis

Three investigators (T.L., I.G., L.H.) independently generated codes from the primary transcriptions. The codes represented themes found in the data. The investigators initially coded the first four transcriptions independently and then reviewed the coding scheme and resolved discrepancies collaboratively. The transcriptions were saved as Microsoft Word documents, with codes being tracked as Comments within these documents. This process was repeated two more times, with all transcriptions being coded independently and then meeting to come to a group consensus. It was decided ahead of time that transcriptions would be coded until theoretical saturation was reached and no new codes were being introduced in the interviews. A final code list was developed using the constant comparative method [15]. The codes were organized into 11 main themes.

Results

~~We completed 17 interviews (11 women, 6 men). On average, the interviews were 15 to 20 minutes long. Every patient except one screened negative for unhealthy alcohol use per the NIAAA tool and 47% had a positive screen for depression per the PHQ-2.~~

Thirty-six patients met inclusion criteria at the onset of the study. Of the 36 patients, 21 eligible patients were approached, and four declined. We completed 17 interviews (11 women, 6 men). On average, the interviews were 15 to 20 minutes long. For the overall cohort of 36 patients meeting inclusion criteria, patient characteristics are provided in Table 1. When patients presented to the ED, 67% of the time they were admitted to the hospital (see Table 2 for hospital admission and ED diagnoses). Patients also had multiple visits to the PCC and the ED (Table 3). Sixteen of the 17 patients we interviewed screened negative for unhealthy alcohol use per the NIAAA tool and 47% had a positive screen for depression per the PHQ-2.

Formatted: Font: (Default) Times New Roman, 12 pt, Font color: Custom Color(RGB(34,34,34))

Formatted: Normal, Indent: Left: 0", First line: 0.5", Line spacing: Double

Formatted: Font: (Default) Times New Roman, 12 pt

Formatted: Font: (Default) Times New Roman, 12 pt, Font color: Custom Color(RGB(34,34,34))

Formatted: Font color: Custom Color(RGB(34,34,34))

Table 1: Patient Characteristics for Cohort Meeting Inclusion Criteria (N=36)

Age	Number (%)
19 to 39	10 (28)
40 to 64	18 (50)
65 or above	8 (22)
Race/Ethnicity	
Hispanic	8 (22)
Black	16 (44)
White	11 (31)
Other	1 (3)
Insurance Status	
Medicaid only	15 (42)
Medicare only	1 (3)
Medicaid and Medicare	16 (44)
Self-pay	1 (3)
Other	3 (8)

Table 2: Most Common Diagnoses for ED Visits and Hospital Admissions in 2011

ED Visit Diagnosis	*Hospital Admission Diagnosis*
Abdominal pain (16%)	Abdominal pain (12%)
Chest pain (9%)	Nausea/Vomiting, Abdominal pain (9%)
Nausea/Vomiting, Abdominal pain (9%)	COPD exacerbation (8%)
COPD exacerbation (5%)	Shortness of breath (6%)
GI bleed (4%)	Congestive heart failure (6%)
Other (43%)	Other (59%)

Table 3: PCC and ED Utilization

Primary Care and ED Characteristics	N=36
Medications, mean	12.0
Polypharmacy (>6 medications), n (%)	30 (83)
Number of patient diagnoses (comorbidity), mean	7.1
ED visits in 2011, mean	6.6
Number of follow-up appointments made with PCC	66
Number of follow-up appointments kept	29
Number of patients using behavioral health, n (%)	5 (14)
Average number of PCC visits in the last 12 months	4.3

We identified 11 themes (Table 4~~1~~), and describe five relating to risk of readmission:

Formatted: Indent: First line: 0.5"

fragmented primary care relationships contributing to avoidance of ambulatory care, self triage leading to potentially avoidable ED use, adequacy of formal services, heavy reliance on informal support systems, and inadequate access to care. The codes contributing to these five themes were consistent throughout the interviews and pertained to either reasons for readmission or current interventions targeted at decreasing readmissions. The other themes represented self-reported descriptions, such as substance abuse for the theme of patient characteristics. Overall, we found that while patients described receiving adequate formal services, barriers in accessing care and disjointed primary care relationships led to patients making their own triage decisions and seeking other support systems.

Table 4~~1~~: 11 Main Themes

Heavy Reliance on Informal Support Systems
Adequacy of Formal Services
Health Literacy
Inadequate Access to Care
Fragmented Primary Care Relationships Contributing to Avoidance of Ambulatory Care
Self Triage Leading to Potentially Avoidable ED Use
Patient Phone Call
Discharge Planning
Patient Characteristics

Readmissions (same or different complaint)	
Post-Discharge Course	

Fragmented Primary Care Relationships Contributing to Avoidance of Ambulatory Care

Participants described a fragmented relationship with their providers. Nine patients were able to name their primary provider, while seven patients were unable to. In terms of their connection with their provider, many expressed concern: "I ain't got no relationship. I don't even know the person. They don't even know me. There was no relationship."

Patients further referred to provider turnover and large provider teams as deleterious to developing a relationship with their providers. One patient explained: "Well, I hate that they keep switching doctors. They can't really keep the same doctor because as soon as you get comfortable with one person they'll let you know somebody else is there. Now it's like you got to learn this person all over. I hate changing doctors. I don't like that." Another patient described improving the relationship with her primary provider, stating "It [would] make me feel better knowing that somebody cares […] They could give advice on the phone telling me what I should do. And I could do that to prevent going to the hospital because I'm in the hospital a lot."

Self Triage Leading to Potentially Avoidable ED Use

We found that patients were typically going directly to the Emergency Department (ED) without contacting their primary care provider: "I could tell the pain, if it is severe enough to go to the PCC and sit around to be called in the clinic or do I need to just get out there and go right to the emergency room. So I could tell the difference, I learned to know my body now after getting so sick and the last three years I've been very sick."

Patients commonly cited inability to reach their primary provider via telephone and the belief that the PCC could not treat acute illness as reasons for going directly to the ED. One patient explained that "I know that once I get there [to the PCC], they would send me anyway so I might just as well go to the [ED] first."

Finally, amongst patients who decided to go to the ED instead of going for an urgent primary care visit, a common theme was delaying action until the situation became more serious. One patient commented "I wait[ed] instead to get better […] my head was pounding and when I walked to the bathroom I'd be staggering […] I mashed my lifeline, and the ambulance picked me up."

Adequacy of Formal Services

We found that patients had limited or no difficulty accessing formal services such as medication assistance, home care, and transportation. All patients except one were able to obtain medications either despite financial barriers or with no financial barriers. One patient noted "I got medical and they basically pay for [medications]." Patients similarly found home care accessible, describing "Well, I have a nurse coming usually once a week and more often if there is something going on." Formal transportation was obtained with minimal difficulty, with one patient explaining "They have a car that gets me […] I have to call and make an appointment and they would call people telling them two days in advance."

Heavy Reliance on Informal Support Systems

Despite the widespread availability and use of formal post-discharge support systems, patients reported still relying heavily on informal support from friends and family members to help with transportation and medication management. One patient described "So my daughter sets them out now so it makes it easier for the visit nurse, so that's how I manage my medication at home. They put it in a little blue container and my daughter sets them up by the week."

Another patient commented "If I can't move, my family give me a ride - my daughter, my man, my niece, my nephew, my son." Patients demonstrated resilient attitudes based on the high degree of support they received from friends and family members, and notably described that they did not feel lonely or socially isolated despite spending a great deal of time in the hospital. Patients also reported feeling safe at home.

Inadequate Access to Care

The most commonly cited problem inhibiting patients from accessing medical care was an impaired ability to speak to their provider on the telephone. This was described as both difficulty in reaching someone on the phone as well as long waiting times before receiving a call back from a provider. As one patient noted, "I don't call primary care because it takes too long to get through to anybody until you get the call – I could have gone on a trip to Europe and back."

Patients also noted that they had stopped even trying to call based on prior experiences: "I try to call the Primary Care Center. But it's like that one time that took 7 hours. I haven't called them [since]. So it's like either I stick it out and let the pain or whatever subside, or I go down to the ER. If I called them one time and it took them some hours to get back to me, I feel that it's useless if I call again."

Discussion

In this study of underserved patients with a high frequency of hospital readmissions, we found that there may be factors contributing to readmissions that are not addressed by most current interventions, which typically target access to formal outpatient services [3 16 17]. Contrary to our expectations, patients from our sample did not have difficulty accessing medications, home care, or transportation. Rather, the primary factors contributing to readmissions that were consistently brought up by patients in our study were self triage to the ED and a lack of primary care relationship.

While other studies have examined the challenges in transitions from inpatient care [8 18], we explored how patients interacted with the health system when they were home. We found that patients delayed care and then made the decision to go to the ED without attempting to contact their primary providers. Delays in care may have increased risk for readmission. ~~This delay of care likely resulted in a worsening of their health status which consequently precipitated another hospital admission.~~ The most consistent reasons for not reaching out to their primary providers were inability to speak with a provider on the phone, the belief that their primary care provider could not manage urgent issues, and patient perception that their primary care provider could not address their concerns in a timely manner.

Our results differ from other qualitative studies evaluating readmissions. In a recent article by Strunin et al (2007), patients expressed that they had inadequate medical care at home and lacked transportation to appointments [3]. In contrast, we found that these needs were being met for our high-risk patients. Similarly, a recent survey by Kangovi et al (2012) of patients that had been readmitted found that lack of medication adherence after discharge was commonly attributed to difficulty paying for medications and obtaining transportation [8]. In our sample of patients, only one patient reported not being able to obtain medications due to cost. Although other studies have included patients with one or more readmission within 30 days of discharge, we utilized more stringent enrollment criteria, requiring patients to have had four or more admissions in the prior six months. The high-risk underserved patients that we enrolled may have had more interaction with the hospital system than other patients with fewer hospital admissions, and therefore may have had more opportunity to be linked in with formal services such as medication assistance, visiting nurse services, and transportation arranged through the hospital.

Formatted: Line spacing: Double

However, future studies will be needed to determine if there is indeed a direct association between increased interaction with the hospital system and increased formal services compared to other patient populations.

~~The high-risk underserved patients that we enrolled likely had more interaction with the health system than other patients with fewer hospital admissions, and therefore may have had more opportunity to be linked in with formal services such as VNA and arranged transportation.~~

O~~Thus o~~ur findings suggest that this population of patients needs more targeted interventions to address the consistently stated problems of self triage and a lack of primary care relationship. Another recent study by Kangovi et al (2013) described a social norm of high-risk patients preferring the hospital for care when they have a change in their health status [19]. They similarly conclude that targeted interventions should address the needs of high-risk patients in the ambulatory setting.

Formatted: Indent: First line: 0.5"

First, ~~it is critical to have easy~~improving telephone access to primary care offices is important, as many primary care patients prefer this method of communication, and it ~~this is the preferred method of communication for patients and~~ is linked to improved patient outcomes [20-22]. An effective telephone system would triage urgent issues, and would ensure that a member of the patient's provider team is available to field urgent calls. Patients in our study commonly mentioned that they wanted to receive a timely call back for urgent issues. Open access scheduling, which minimizes scheduled appointments to maximize same-day visit availability, typically also improves telephone access by opening up the calendar and streamlining the types of appointments that can be made. The time taken per call is consequently shorter [23 24]. Alternatively, many new electronic medical record systems allow secure messaging through the electronic medical record, thereby reducing demand for telephone access, and facilitating timely responses to urgent calls [25 26]. Future research regarding the best modes of communication with providers will be an important area of inquiry moving forward.

Second, many patients in our study had stopped calling their primary care provider because of their perceptions of the primary care clinic as incapable of handing acute medical concerns. Patient experiences, such as being transferred from their primary care office to the ED, shaped their perception of the primary care clinic. Once access to providers has been improved and the lack of primary care relationship has been repaired, we would suggest educating patients about the scope of their primary care clinics as urgent care centers, as well as the role of their primary providers in their care when they have a change in their health status. In addition, providers should discuss their role in helping patients make triage decisions when they get sick at home.

Third, patients in our study described inadequate continuity with their providers. Patient-provider continuity ~~is essential and~~ has been consistently associated with improved patient outcomes and satisfaction [27 28]. To address the lack of primary care relationship that patients described, there must first be a system in place that enables patients to have continuity with their teams when they have a change in their health status [10]. This is especially difficult in clinics staffed by residents who are present one half day per week, which is a common model for internal medicine residency programs. When patients have urgent issues that arise, they are often seen by providers who are not part of their primary care team. A strategy for improving upon this situation would be to arrange residents into practice-partner teams where they would work together to care for a larger panel of patients. While the patients would still need to become familiar with a team of resident physicians, this has the potential to make patients feel more comfortable seeking care for acute issues. This team-based care would also aid in the conversion of primary care clinics to patient-centered medical homes, where continuity is an essential tenet.

Our study has several limitations. First, we focused on an underserved population; our results may not apply to other populations. Second, our sample size is small, though we did employ a comprehensive strategy to identify patients meeting our enrollment criteria during the study period, and we did reach theoretical saturation as evidenced by no new themes being introduced in the final interviews. Third, we conducted our study at a single site, and there may be other factors more prevalent at other sites contributing to readmission.

In summary, we found that even though patients were receiving the formal services that they needed, they were still being driven to make the decision to go to the ED based on based on long phone wait times for primary care and their belief or experience that primary care cannot treat their acute problems. We propose that educating patients about the capability and role of the primary care provider while concurrently streamlining telephone access to providers could enhance continuity and thereby prevent readmissions. Focusing entirely on arranging formal transitional care services, such as transportation and medications, is unlikely to be adequate in reducing readmissions.

Acknowledgements

Funders: Dr. Horwitz is supported by the National Institute on Aging (K08 AG038336) and by the American Federation for Aging Research through the Paul B. Beeson Career Development Award Program. This work was also supported by a grant from the Claude D. Pepper Older Americans Independence Center at Yale University School of Medicine (P30AG021342 NIH/NIA). No funding source had any role in the study design; in the collection, analysis, and interpretation of data; in the writing of the report; or in the decision to submit the article for publication. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institute on Aging, the National Institutes of Health, or the American Federation for Aging Research.

Access to data: Leora Horwitz had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

Prior presentations: An earlier version of this work was presented as an oral presentation at the Society of General Internal Medicine Annual Meeting in Orlando, FL on May 12, 2012.

Conflicts of interest: The authors have no conflicts of interest to report.

References

1. Jencks SF, Williams MV, Coleman EA. Rehospitalizations among patients in the Medicare fee-for-service program. The New England journal of medicine 2009;**360**(14):1418-28 doi: 10.1056/NEJMsa0803563[published Online First: Epub Date]|.
2. Hansen LO, Young RS, Hinami K, et al. Interventions to reduce 30-day rehospitalization: a systematic review. Annals of internal medicine 2011;**155**(8):520-8 doi: 10.1059/0003-4819-155-8-201110180-00008[published Online First: Epub Date]|.
3. Strunin L, Stone M, Jack B. Understanding rehospitalization risk: can hospital discharge be modified to reduce recurrent hospitalization? J Hosp Med 2007;**2**(5):297-304
4. Weissman JS, Stern RS, Epstein AM. The impact of patient socioeconomic status and other social factors on readmission: a prospective study in four Massachusetts hospitals. Inquiry : a journal of medical care organization, provision and financing 1994;**31**(2):163-72
5. Billings J, Zeitel L, Lukomnik J, et al. Impact of socioeconomic status on hospital use in New York City. Health affairs (Project Hope) 1993;**12**(1):162-73
6. Kalra AD, Fisher RS, Axelrod P. Decreased length of stay and cumulative hospitalized days despite increased patient admissions and readmissions in an area of urban poverty. Journal of general internal medicine 2010;**25**(9):930-5 doi: 10.1007/s11606-010-1370-5[published Online First: Epub Date]|.
7. Allaudeen N, Vidyarthi A, Maselli J, et al. Redefining readmission risk factors for general medicine patients. Journal of hospital medicine : an official publication of the Society of Hospital Medicine 2011;**6**(2):54-60 doi: 10.1002/jhm.805[published Online First: Epub Date]|.
8. Kangovi S, Grande D, Meehan P, et al. Perceptions of readmitted patients on the transition from hospital to home. Journal of hospital medicine : an official publication of the Society of Hospital Medicine 2012;**7**(9):709-12 doi: 10.1002/jhm.1966[published Online First: Epub Date]|.
9. Raven MC, Billings JC, Goldfrank LR, Manheimer ED, Gourevitch MN. Medicaid patients at high risk for frequent hospital admission: real-time identification and remediable risks. Journal of urban health : bulletin of the New York Academy of Medicine 2009;**86**(2):230-41 doi: 10.1007/s11524-008-9336-1[published Online First: Epub Date]|.
10. Englander H, Kansagara D. Planning and designing the care transitions innovation (C-Train) for uninsured and Medicaid patients. Journal of hospital medicine : an official publication of the Society of Hospital Medicine 2012;**7**(7):524-9 doi: 10.1002/jhm.1926[published Online First: Epub Date]|.
11. Annema C, Luttik ML, Jaarsma T. Reasons for readmission in heart failure: Perspectives of patients, caregivers, cardiologists, and heart failure nurses. Heart & lung : the journal of critical care 2009;**38**(5):427-34 doi: 10.1016/j.hrtlng.2008.12.002[published Online First: Epub Date]|.
12. Cohen S, Wills TA. Stress, social support, and the buffering hypothesis. Psychological bulletin 1985;**98**(2):310-57
13. Kroenke K, Spitzer RL, Williams JB. The Patient Health Questionnaire-2: validity of a two-item depression screener. Medical care 2003;**41**(11):1284-92 doi: 10.1097/01.mlr.0000093487.78664.3c[published Online First: Epub Date]|.
14. Smith PC, Schmidt SM, Allensworth-Davies D, et al. Primary care validation of a single-question alcohol screening test. Journal of general internal medicine 2009;**24**(7):783-8 doi: 10.1007/s11606-009-0928-6[published Online First: Epub Date]|.
15. Glaser BG, Strauss AL. *The Discovery of Grounded Theory: Strategies for Qualitative Research*. New York: Aldine, 1967.
16. Boling PA. Care transitions and home health care. Clinics in geriatric medicine 2009;**25**(1):135-48, viii doi: 10.1016/j.cger.2008.11.005[published Online First: Epub Date]|.

17. Pearson S, Inglis SC, McLennan SN, et al. Prolonged effects of a home-based intervention in patients with chronic illness. Archives of internal medicine 2006;**166**(6):645-50 doi: 10.1001/archinte.166.6.645[published Online First: Epub Date]|.
18. Davis MM, Devoe M, Kansagara D, Nicolaidis C, Englander H. "Did I do as best as the system would let me?" Healthcare professional views on hospital to home care transitions. Journal of general internal medicine 2012;**27**(12):1649-56 doi: 10.1007/s11606-012-2169-3[published Online First: Epub Date]|.
19. Kangovi S, Barg FK, Carter T, Long JA, Shannon R, Grande D. Understanding why patients of low socioeconomic status prefer hospitals over ambulatory care. Health affairs 2013;**32**(7):1196-203 doi: 10.1377/hlthaff.2012.0825[published Online First: Epub Date]|.
20. LaVela SL, Schectman G, Gering J, et al. Understanding health care communication preferences of veteran primary care users. Patient education and counseling 2012;**88**(3):420-6 doi: 10.1016/j.pec.2012.06.004[published Online First: Epub Date]|.
21. Wasson J, Gaudette C, Whaley F, et al. Telephone care as a substitute for routine clinic follow-up. JAMA : the journal of the American Medical Association 1992;**267**(13):1788-93
22. Curry SJ, McBride C, Grothaus LC, et al. A randomized trial of self-help materials, personalized feedback, and telephone counseling with nonvolunteer smokers. Journal of consulting and clinical psychology 1995;**63**(6):1005-14
23. Steinbauer JR, Korell K, Erdin J, et al. Implementing open-access scheduling in an academic practice. Family practice management 2006;**13**(3):59-64
24. Rose KD, Ross JS, Horwitz LI. Advanced access scheduling outcomes: a systematic review. Arch Intern Med 2011;**171**(13):1150-9 doi: 10.1001/archinternmed.2011.168[published Online First: Epub Date]|.
25. Zhou YY, Garrido T, Chin HL, et al. Patient access to an electronic health record with secure messaging: impact on primary care utilization. The American journal of managed care 2007;**13**(7):418-24
26. Coleman EA. Falling through the cracks: challenges and opportunities for improving transitional care for persons with continuous complex care needs. Journal of the American Geriatrics Society 2003;**51**(4):549-55
27. Wasson JH, Sauvigne AE, Mogielnicki RP, et al. Continuity of outpatient medical care in elderly men. A randomized trial. JAMA : the journal of the American Medical Association 1984;**252**(17):2413-7
28. van Walraven C, Oake N, Jennings A, et al. The association between continuity of care and outcomes: a systematic and critical review. Journal of evaluation in clinical practice 2010;**16**(5):947-56 doi: 10.1111/j.1365-2753.2009.01235.x[published Online First: Epub Date]|.

Appendix 1: List of questions from interview instrument

Tell me what happened to you since you went home between last discharge and now?

Do you think there is anything else that could have been done to have prevented you from coming back to hospital, and if so what?

When you have a change in your health at home, or start to feel sick at home, how do you make the decision to try to reach your PMD versus going to the ED?

How often do you try to reach your PMD as opposed to going to the ED?

When you have a change in your health at home, or start to feel sick at home, how long have you waited in the past before contacting your provider?

Can you tell me about the medications you take at home?

Has a financial barrier or problem ever resulted in you not being able to obtain the medications that you need? If so, tell me about it. Has this been a common problem for you?

How do you manage your medications at home?

Do you have any difficulty with your medications?

Tell me what it’s like at home for you?

Do you have people who can help you at home?

Do you feel safe at home?

How do you think of the social support you have at home?

What is your financial situation?

In what ways do you have difficulty getting to and from your primary care appointments, if at all?

How do you get around?

In the last couple of weeks, have you been feeling depressed?

Have you ever been on any medications for depression?

Do you feel like these feelings of depression have caused you to have to come to hospital more than you otherwise would have to?

What's your relationship with your primary doctor at the Primary Care Center?

Do you know the name of your PMD, and do you have difficulty reaching your primary doctor if you're having a problem?

How can your primary doctor help to prevent you from having to be readmitted to the hospital do you think?

Can you think of anything more your primary doctor, or the Primary Care Center here at Yale could do?

What do you think are some other things that can be done to help prevent you from having to come back to the hospital, if anything?

Is there anything else that you think that either you or the physicians in the community could do to help you with that?

Do you need any more home support (home nursing care, VNA, etc) than you currently are receiving?

Finally, do you think it would be helpful for your primary doctor to call you at home to check in with you on a regular basis, and why?

Consolidated criteria for reporting qualitative studies (COREQ): 32-item checklist

No	Item	Guide questions/description
Domain 1: Research team and reflexivity		
Personal Characteristics		
1.	Interviewer/facilitator	Which author/s conducted the interview or focus group? Theodore Long
2.	Credentials	What were the researcher's credentials? *E.g. PhD, MD* MD
3.	Occupation	What was their occupation at the time of the study? Internal Medicine resident
4.	Gender	Was the researcher male or female? Male
5.	Experience and training	What experience or training did the researcher have? Researcher received training from both Dr. Horwitz, who has extensive experience with qualitative interviewing, as well as relevant textbooks on qualitative studies.
Relationship with participants		
6.	Relationship established	Was a relationship established prior to study commencement? No
7.	Participant knowledge of the interviewer	What did the participants know about the researcher? e*.g. personal goals, reasons for doing the research* Participants knew that the researcher was conducting interviews for the purpose of this research study.
8.	Interviewer characteristics	What characteristics were reported about the interviewer/facilitator? e.g. *Bias, assumptions, reasons and interests in the research topic* Researcher stated interest in research topic.
Domain 2: study design		
Theoretical framework		
9.	Methodological orientation and Theory	What methodological orientation was stated to underpin the study? *e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis* Grounded theory
Participant selection		
10.	Sampling	How were participants selected? *e.g. purposive, convenience, consecutive, snowball* Purposive
11.	Method of approach	How were participants approached? e*.g. face-to-face, telephone, mail, email* Face-to-face
12.	Sample size	How many participants were in the study? 17
13.	Non-participation	How many people refused to participate or dropped out? Reasons? 4 patients refused, stating that they were not interested in

No	Item	Guide questions/description
		participating
Setting		
14.	Setting of data collection	Where was the data collected? e*.g. home, clinic, workplace* Workplace
15.	Presence of non-participants	Was anyone else present besides the participants and researchers? No
16.	Description of sample	What are the important characteristics of the sample? *e.g. demographic data, date* No identifying information was used, we only used status as a primary care patient
Data collection		
17.	Interview guide	Were questions, prompts, guides provided by the authors? Was it pilot tested? The interview guide was iterative and tested through evaluating interviews sequentially.
18.	Repeat interviews	Were repeat interviews carried out? If yes, how many? No
19.	Audio/visual recording	Did the research use audio or visual recording to collect the data? We used an audio recording device
20.	Field notes	Were field notes made during and/or after the interview or focus group? No
21.	Duration	What was the duration of the interviews or focus group? 15 to 20 minutes per interview
22.	Data saturation	Was data saturation discussed? Yes, we felt that we reached theoretical saturation
23.	Transcripts returned	Were transcripts returned to participants for comment and/or correction? No
Domain 3: analysis and findingsz		
Data analysis		
24.	Number of data coders	How many data coders coded the data? Three
25.	Description of the coding tree	Did authors provide a description of the coding tree? Yes
26.	Derivation of themes	Were themes identified in advance or derived from the data? Derived from data
27.	Software	What software, if applicable, was used to manage the data? None
28.	Participant checking	Did participants provide feedback on the findings? No
Reporting		
29.	Quotations presented	Were participant quotations presented to illustrate the themes / findings? Was each quotation identified? e*.g. participant number* Quotations were used but not identified
30.	Data and findings consistent	Was there consistency between the data presented and the findings?

No	Item	Guide questions/description
		Yes
31.	Clarity of major themes	Were major themes clearly presented in the findings? Yes
32.	Clarity of minor themes	Is there a description of diverse cases or discussion of minor themes? Yes