



Reasons for Readmission in a High-Risk Population

Journal:	<i>BMJ Open</i>
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, Ingina; 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

SCHOLARONE™
Manuscripts

Peer Review Only

1
2
3 **Title:** Reasons for Readmission in a High-Risk Population
4

5 **Authors:** Theodore Long, MD;¹ Inginia Genao, MD;² Leora I. Horwitz, MD, MHS^{2,3}
6
7

8 **Running Title:** High-Risk Readmissions
9

10 **Author affiliations:**

11
12 ¹Internal Medicine Residency Program, Department of Internal Medicine, Yale School of
13 Medicine, New Haven, CT
14

15
16 ²Section of General Internal Medicine, Department of Internal Medicine, Yale School of
17 Medicine, New Haven, CT
18

19
20 ³Center for Outcomes Research and Evaluation, Yale-New Haven Hospital, New Haven, CT
21
22

23
24 Corresponding author:

25 Theodore Long, MD

26 Yale Traditional Internal Medicine Residency Training Program

27 PO Box 208030

28 New Haven, CT 06520-8030

29 Tel: (203) 785-4123

30 Fax: (203) 785-7258

31 theodore.long@yale.edu
32
33
34
35
36
37

38 Word count: 3000

39 Tables: 1

40 Figures: 0

41 References: 22

42 Word count (abstract): 214

43
44
45
46
47
48 Key words: access to care, care transitions, underserved populations, qualitative research,
49 primary care
50
51
52
53
54
55
56
57
58
59
60

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

1
2
3 instrument included the areas of transportation, support systems, medications, formal services,
4 health literacy, access to care, relationship with provider, communication with providers, and
5 transitions of care (see Appendix 1 for list of questions). We also included screening for
6 depression via the Patient Health Questionnaire-2 (PHQ-2)¹⁰ and for unhealthy alcohol use via
7 the National Institute on Alcohol Abuse and Alcoholism (NIAAA) recommended tool.¹¹ The
8 IRB waived the written consent requirement due to the fact that no identifying information was
9 used. Informed consent was obtained verbally from all study participants. One investigator (T.L.)
10 conducted semi-structured interviews. The interviews were recorded and then transcribed by a
11 subcontracted transcriber.

12 *Analysis*

13
14 Three investigators (T.L., I.G., L.H.) independently generated codes from the primary
15 transcriptions. The codes represented themes found in the data. The investigators initially coded
16 the first four transcriptions independently and then reviewed the coding scheme and resolved
17 discrepancies collaboratively. This process was repeated two more times, with all transcriptions
18 being coded independently and then meeting to come to a group consensus. A final code list was
19 developed using the constant comparative method.¹² The codes were organized into 11 main
20 themes.

21 **Results**

22
23 We completed 17 interviews (11 women, 6 men). Every patient except one screened
24 negative for unhealthy alcohol use per the NIAAA tool and 47% had a positive screen for
25 depression per the PHQ-2. We identified 11 themes (Table 1), and describe five relating to risk
26 of readmission: lack of primary care relationship, self triage, formal services, informal support
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

1
2
3 systems, access to care. Overall, we found that while patients described receiving adequate
4
5 formal services, barriers in accessing care and disjointed primary care relationships led to
6
7 patients making their own triage decisions and seeking other support systems.
8
9

10
11 **Table 1:** 11 Main Themes

12 Informal Support Systems
13 Formal Services
14 Health Literacy
15 Access to Care
16 Lack of Primary Care Relationship
17 Self Triage
18 Patient Phone Call
19 Discharge Planning
20 Patient Characteristics
21 Readmissions (same or different 22 complaint)
23 Post-Discharge Course

24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42 *Lack of Primary Care Relationship*

43
44 Participants described a fragmented relationship with their providers. Nine patients were
45
46 able to name their primary provider, while seven patients were unable to. In terms of their
47
48 connection with their provider, many expressed concern: “I ain’t got no relationship. I don’t even
49
50 know the person. They don’t even know me. There was no relationship.”
51
52

53
54 Patients further referred to provider turnover and large provider teams as deleterious to
55
56 developing a relationship with their providers. One patient explained: “Well, I hate that they
57
58
59
60

1
2
3 keep switching doctors. They can't really keep the same doctor because as soon as you get
4 comfortable with one person they'll let you know somebody else is there. Now it's like you got
5 to learn this person all over. I hate changing doctors. I don't like that."
6
7
8
9

10 *Self Triage*

11
12 We found that patients were typically going directly to the Emergency Department (ED)
13 without contacting their primary care provider: "I could tell the pain, if it is severe enough to go
14 to the PCC and sit around to be called in the clinic or do I need to just get out there and go right
15 to the emergency room. So I could tell the difference, I learned to know my body now after
16 getting so sick and the last three years I've been very sick."
17
18
19
20
21
22
23

24 Patients commonly cited inability to reach their primary provider via telephone and the
25 belief that the PCC could not treat acute illness as reasons for going directly to the ED. One
26 patient explained that "I know that once I get there [to the PCC], they would send me anyway so
27 I might just as well go to the [ED] first."
28
29
30
31
32
33

34 Finally, amongst patients who decided to go to the ED instead of going for an urgent
35 primary care visit, a common theme was delaying action until the situation became more serious.
36 One patient commented "I wait[ed] instead to get better [...] my head was pounding and when I
37 walked to the bathroom I'd be staggering [...] I mashed my lifeline, and the ambulance picked
38 me up."
39
40
41
42
43
44
45

46 *Formal Services*

47
48 We found that patients had limited or no difficulty accessing formal services such as
49 medication assistance, home care, and transportation. All patients except one were able to obtain
50 medications either despite financial barriers or with no financial barriers. One patient noted "I
51 got medical and they basically pay for [medications]." Patients similarly found home care
52
53
54
55
56
57
58
59
60

1
2
3 accessible, describing “Well, I have a nurse coming usually once a week and more often if there
4 is something going on.” Formal transportation was obtained with minimal difficulty, with one
5
6 patient explaining “They have a car that gets me [...] I have to call and make an appointment and
7
8 they would call people telling them two days in advance.”
9
10
11

12 *Informal Support Systems*

13
14
15 Despite the widespread availability and use of formal post-discharge support systems,
16
17 patients reported still relying heavily on informal support from friends and family members to
18
19 help with transportation and medication management. One patient described “So my daughter
20
21 sets them out now so it makes it easier for the visit nurse, so that’s how I manage my medication
22
23 at home. They put it in a little blue container and my daughter sets them up by the week.”
24
25

26
27 Another patient commented “If I can’t move, my family give me a ride - my daughter, my man,
28
29 my niece, my nephew, my son.”
30
31

32 *Access to Care*

33
34 The most commonly cited problem inhibiting patients from accessing medical care was
35
36 an impaired ability to speak to their provider on the telephone. This was described as both
37
38 difficulty in reaching someone on the phone as well as long waiting times before receiving a call
39
40 back from a provider. As one patient noted, “I don’t call primary care because it takes too long to
41
42 get through to anybody until you get the call – I could have gone on a trip to Europe and back.”
43
44

45
46 Patients also noted that they had stopped even trying to call based on prior experiences:
47
48 “I try to call the Primary Care Center. But it’s like that one time that took 7 hours. I haven’t
49
50 called them [since]. So it’s like either I stick it out and let the pain or whatever subside, or I go
51
52 down to the ER. If I called them one time and it took them some hours to get back to me, I feel
53
54 that it’s useless if I call again.”
55
56
57
58
59
60

Discussion

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

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

1
2
3 other studies have included patients with one or more readmission within 30 days of discharge,
4
5 we utilized more stringent enrollment criteria, requiring patients to have had four or more
6
7 admissions in the prior six months. The high-risk underserved patients that we enrolled likely
8
9 had more interaction with the health system than other patients with fewer hospital admissions,
10
11 and therefore more opportunity to be linked in with formal services such as VNA and arranged
12
13 transportation. Thus our findings suggest that this population of patients needs more targeted
14
15 interventions to address the consistently stated problems of self triage and a lack of primary care
16
17 relationship.
18
19
20

21
22 First, it is critical to have easy telephone access to primary care offices, as this is the
23
24 preferred method of communication for patients and is linked to improved patient outcomes.¹⁵⁻¹⁷
25
26 Inadequate telephone access contributes to patients having difficulty obtaining urgent care when
27
28 they have a change in health status. An effective telephone system would triage urgent issues,
29
30 and would ensure that a member of the patient's provider team is available to field urgent calls.
31
32 Patients in our study commonly mentioned that they wanted to receive a timely call back for
33
34 urgent issues. Several strategies exist to improve telephone access. Open access scheduling,
35
36 which minimizes scheduled appointments to maximize same-day visit availability, typically also
37
38 improves telephone access by opening up the calendar and streamlining the types of
39
40 appointments that can be made. The time taken per call is consequently shorter.^{18,19}
41
42 Alternatively, many new electronic medical record systems allow secure messaging through the
43
44 electronic medical record. This feature provides an alternative method of communication for
45
46 patients, thereby reducing demand for telephone access, and facilitating timely responses to
47
48 urgent calls.²⁰
49
50
51
52
53

54
55 Second, many patients in our study had stopped calling their primary care provider
56
57
58
59
60

1
2
3 because of their perceptions of the primary care clinic as incapable of handling acute medical
4 concerns. Patient experiences, such as being transferred from their primary care office to the ED,
5 shaped their perception of the primary care clinic. We would suggest educating patients about
6 the scope of their primary care clinics as urgent care centers, as well as the role of their primary
7 providers in their care when they have a change in their health status. In addition, providers
8 should discuss their role in helping patients make triage decisions when they get sick at home.
9

10
11
12
13
14
15
16
17
18 Third, patient-provider continuity is essential and has been consistently associated with
19 improved patient outcomes and satisfaction.^{21,22} To address the lack of primary care relationship
20 that patients described, there must first be a system in place that enables patients to have
21 continuity with their teams when they have a change in their health status. This is especially
22 difficult in clinics staffed by residents who are present one half day per week, which is a
23 common model for internal medicine residency programs. When patients have urgent issues that
24 arise, they are often seen by providers who are not part of their primary care team. A strategy for
25 improving upon this situation would be to arrange residents into practice-partner teams where
26 they would work together to care for a larger panel of patients. Residents would rotate
27 ambulatory blocks such that a member of the team would be in clinic daily for the duration of an
28 outpatient block to handle urgent issues that arise for any patient on the team panel. The patients
29 would be well-known to a small group of rotating residents. While the patients would still need
30 to become familiar with a team of resident physicians, this has the potential to make patients feel
31 more comfortable seeking care for acute issues. This team-based care would also aid in the
32 conversion of primary care clinics to patient-centered medical homes, where continuity is an
33 essential tenet.
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53

54
55
56 Our study has several limitations. First, we focused on an underserved population; our
57
58
59
60

1
2
3 results may not apply to other populations. Second, our sample size is small, though we did
4
5 employ a comprehensive strategy to identify patients meeting our enrollment criteria during the
6
7 study period, and we did reach theoretical saturation as evidenced by no new themes being
8
9 introduced in the final interviews. Third, we conducted our study at a single site, and there may
10
11 be other factors more prevalent at other sites contributing to readmission.
12
13

14
15 In summary, we found that even though patients were receiving the formal services that
16
17 they needed, they were still being driven to make the decision to go to the ED based on based on
18
19 long phone wait times for primary care and their belief or experience that primary care cannot
20
21 treat their acute problems. We propose that educating patients about the capability and role of the
22
23 primary care provider while concurrently streamlining telephone access to providers could
24
25 enhance continuity and thereby prevent readmissions. Focusing entirely on arranging formal
26
27 transitional care services, such as transportation and medications, is unlikely to be adequate in
28
29 reducing readmissions.
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

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.

- 1
 - 2
 - 3
 - 4
 - 5
 - 6
 - 7
 - 8
 - 9
 - 10
 - 11
 - 12
 - 13
 - 14
 - 15
 - 16
 - 17
 - 18
 - 19
 - 20
 - 21
 - 22
 - 23
 - 24
 - 25
 - 26
 - 27
 - 28
 - 29
 - 30
 - 31
 - 32
 - 33
 - 34
 - 35
 - 36
 - 37
 - 38
 - 39
 - 40
 - 41
 - 42
 - 43
 - 44
 - 45
 - 46
 - 47
 - 48
 - 49
 - 50
 - 51
 - 52
 - 53
 - 54
 - 55
 - 56
 - 57
 - 58
 - 59
 - 60
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.

For peer review only

1
2
3 **Appendix 1:** List of questions from interview instrument
4

5 Tell me what happened to you since you went home between last discharge and now?
6

7
8 Do you think there is anything else that could have been done to have prevented you from
9 coming back to hospital, and if so what?
10

11 When you have a change in your health at home, or start to feel sick at home, how do you make
12 the decision to try to reach your PMD versus going to the ED?
13

14
15 How often do you try to reach your PMD as opposed to going to the ED?
16

17
18 When you have a change in your health at home, or start to feel sick at home, how long have you
19 waited in the past before contacting your provider?
20

21 Can you tell me about the medications you take at home?
22

23
24 Has a financial barrier or problem ever resulted in you not being able to obtain the medications
25 that you need? If so, tell me about it. Has this been a common problem for you?
26

27 How do you manage your medications at home?
28

29 Do you have any difficulty with your medications?
30

31 Tell me what it's like at home for you?
32

33
34 Do you have people who can help you at home?
35

36 Do you feel safe at home?
37

38
39 How do you think of the social support you have at home?
40

41 What is your financial situation?
42

43
44 In what ways do you have difficulty getting to and from your primary care appointments, if at
45 all?
46

47 How do you get around?
48

49 In the last couple of weeks, have you been feeling depressed?
50

51
52 Have you ever been on any medications for depression?
53

54 Do you feel like these feelings of depression have caused you to have to come to hospital more
55 than you otherwise would have to?
56
57
58
59
60

1
2
3 What's your relationship with your primary doctor at the Primary Care Center?
4

5
6 Do you know the name of your PMD, and do you have difficulty reaching your primary doctor if
7 you're having a problem?
8

9
10 How can your primary doctor help to prevent you from having to be readmitted to the hospital do
11 you think?
12

13
14 Can you think of anything more your primary doctor, or the Primary Care Center here at Yale
15 could do?
16

17
18 What do you think are some other things that can be done to help prevent you from having to
19 come back to the hospital, if anything?
20

21
22 Is there anything else that you think that either you or the physicians in the community could do
23 to help you with that?
24

25
26 Do you need any more home support (home nursing care, VNA, etc) than you currently are
27 receiving?
28

29
30 Finally, do you think it would be helpful for your primary doctor to call you at home to check in
31 with you on a regular basis, and why?
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

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? <i>E.g. PhD, MD</i> 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? <i>e.g. personal goals, reasons for doing the research</i> 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? <i>e.g. Bias, assumptions, reasons and interests in the research topic</i> 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? <i>e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis</i> Grounded theory
Participant selection		
10.	Sampling	How were participants selected? <i>e.g. purposive, convenience, consecutive, snowball</i> Purposive
11.	Method of approach	How were participants approached? <i>e.g. face-to-face, telephone, mail, email</i> 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. <i>home, clinic, workplace</i> 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. <i>demographic data, date</i> 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 findings	
	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. <i>participant number</i> Quotations were used but not identified
30.	Data and findings consistent	Was there consistency between the data presented and the findings?

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

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

For peer review only



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

Journal:	<i>BMJ Open</i>
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, Ingina; 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

SCHOLARONE™
Manuscripts

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:

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

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

³Center 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

1
2
3 declined.
4
5

6 *Design*
7

8 We created an instrument with 27 open-ended questions based on areas targeted by
9
10 current interventions as well as other qualitative studies looking at readmissions [3, 11]. We then
11
12 conducted pilot interviews and solicited feedback about the interview questions from patients.
13
14 The instrument was revised based on this feedback. We also extensively reviewed the first
15
16 complete interview transcription, and further revised the instrument based on this feedback as
17
18 well. The final questions in the instrument included the areas of transportation, support systems,
19
20 medications, formal services, health literacy, access to care, relationship with provider,
21
22 communication with providers, and transitions of care (see Appendix 1 for list of questions). For
23
24 questions asking for an affirmative/negative or numerical response, we used a strategy of
25
26 planned prompts and probes to extend the narrative. We also included screening for depression
27
28 via the Patient Health Questionnaire-2 (PHQ-2) [12] and for unhealthy alcohol use via the
29
30 National Institute on Alcohol Abuse and Alcoholism (NIAAA) recommended tool [13]. The IRB
31
32 waived the written consent requirement due to the fact that no identifying information was used.
33
34 Informed consent was obtained verbally from all study participants. One investigator (T.L.)
35
36 conducted semi-structured interviews. The interviews were recorded and then transcribed by a
37
38 subcontracted transcriber.
39
40
41
42
43
44

45 *Analysis*
46

47
48 Three investigators (T.L., I.G., L.H.) independently generated codes from the primary
49
50 transcriptions. The codes represented themes found in the data. The investigators initially coded
51
52 the first four transcriptions independently and then reviewed the coding scheme and resolved
53
54 discrepancies collaboratively. The transcriptions were saved as Microsoft Word documents, with
55
56
57
58
59
60

1
2
3 codes being tracked as Comments within these documents. This process was repeated two more
4
5 times, with all transcriptions being coded independently and then meeting to come to a group
6
7 consensus. It was decided ahead of time that transcriptions would be coded until theoretical
8
9 saturation was reached and no new codes were being introduced in the interviews. A final code
10
11 list was developed using the constant comparative method [14]. The codes were organized into
12
13
14
15 11 main themes.

20 Results

21
22 We completed 17 interviews (11 women, 6 men). On average, the interviews were 15 to
23
24 20 minutes long. Every patient except one screened negative for unhealthy alcohol use per the
25
26 NIAAA tool and 47% had a positive screen for depression per the PHQ-2. We identified 11
27
28 themes (Table 1), and describe five relating to risk of readmission: fragmented primary care
29
30 relationships contributing to avoidance of ambulatory care, self triage leading to potentially
31
32 avoidable ED use, adequacy of formal services, heavy reliance on informal support systems,
33
34 inadequate access to care. The codes contributing to these five themes were consistent
35
36 throughout the interviews and pertained to either reasons for readmission or current interventions
37
38 targeted at decreasing readmissions. The other themes represented self-reported descriptions,
39
40 such as substance abuse for the theme of patient characteristics. Overall, we found that while
41
42 patients described receiving adequate formal services, barriers in accessing care and disjointed
43
44 primary care relationships led to patients making their own triage decisions and seeking other
45
46 support systems.
47
48
49
50
51

52
53 **Table 1:** 11 Main Themes

54
55
56

Heavy Reliance on Informal Support

57
58
59
60

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

1
2
3 comfortable with one person they'll let you know somebody else is there. Now it's like you got
4
5 to learn this person all over. I hate changing doctors. I don't like that." Another patient described
6
7 improving the relationship with her primary provider, stating "It [would] make me feel better
8
9 knowing that somebody cares [...] They could give advice on the phone telling me what I should
10
11 do. And I could do that to prevent going to the hospital because I'm in the hospital a lot."

14 *Self Triage Leading to Potentially Avoidable ED Use*

15
16
17 We found that patients were typically going directly to the Emergency Department (ED)
18
19 without contacting their primary care provider: "I could tell the pain, if it is severe enough to go
20
21 to the PCC and sit around to be called in the clinic or do I need to just get out there and go right
22
23 to the emergency room. So I could tell the difference, I learned to know my body now after
24
25 getting so sick and the last three years I've been very sick."

26
27
28 Patients commonly cited inability to reach their primary provider via telephone and the
29
30 belief that the PCC could not treat acute illness as reasons for going directly to the ED. One
31
32 patient explained that "I know that once I get there [to the PCC], they would send me anyway so
33
34 I might just as well go to the [ED] first."

35
36
37 Finally, amongst patients who decided to go to the ED instead of going for an urgent
38
39 primary care visit, a common theme was delaying action until the situation became more serious.
40
41 One patient commented "I wait[ed] instead to get better [...] my head was pounding and when I
42
43 walked to the bathroom I'd be staggering [...] I mashed my lifeline, and the ambulance picked
44
45 me up."

46 *Adequacy of Formal Services*

47
48
49 We found that patients had limited or no difficulty accessing formal services such as
50
51 medication assistance, home care, and transportation. All patients except one were able to obtain
52
53
54
55
56
57
58
59
60

1
2
3 medications either despite financial barriers or with no financial barriers. One patient noted “I
4 got medical and they basically pay for [medications].” Patients similarly found home care
5 accessible, describing “Well, I have a nurse coming usually once a week and more often if there
6 is something going on.” Formal transportation was obtained with minimal difficulty, with one
7 patient explaining “They have a car that gets me [...] I have to call and make an appointment and
8 they would call people telling them two days in advance.”
9
10
11
12
13
14
15
16

17 *Heavy Reliance on Informal Support Systems*

18
19
20 Despite the widespread availability and use of formal post-discharge support systems,
21 patients reported still relying heavily on informal support from friends and family members to
22 help with transportation and medication management. One patient described “So my daughter
23 sets them out now so it makes it easier for the visit nurse, so that’s how I manage my medication
24 at home. They put it in a little blue container and my daughter sets them up by the week.”
25
26 Another patient commented “If I can’t move, my family give me a ride - my daughter, my man,
27 my niece, my nephew, my son.” Patients demonstrated resilient attitudes based on the high
28 degree of support they received from friends and family members, and notably described that
29 they did not feel lonely or socially isolated despite spending a great deal of time in the hospital.
30
31 Patients also reported feeling safe at home.
32
33
34
35
36
37
38
39
40
41
42

43 *Inadequate Access to Care*

44
45
46 The most commonly cited problem inhibiting patients from accessing medical care was
47 an impaired ability to speak to their provider on the telephone. This was described as both
48 difficulty in reaching someone on the phone as well as long waiting times before receiving a call
49 back from a provider. As one patient noted, “I don’t call primary care because it takes too long to
50 get through to anybody until you get the call – I could have gone on a trip to Europe and back.”
51
52
53
54
55
56
57
58
59
60

1
2
3 Patients also noted that they had stopped even trying to call based on prior experiences:
4
5 “I try to call the Primary Care Center. But it’s like that one time that took 7 hours. I haven’t
6
7 called them [since]. So it’s like either I stick it out and let the pain or whatever subside, or I go
8
9 down to the ER. If I called them one time and it took them some hours to get back to me, I feel
10
11 that it’s useless if I call again.”
12
13

14 Discussion

15
16 In this study of underserved patients with a high frequency of hospital readmissions, we
17
18 found that there may be factors contributing to readmissions that are not addressed by most
19
20 current interventions, which typically target access to formal outpatient services [3, 15, 16].
21
22 Contrary to our expectations, patients from our sample did not have difficulty accessing
23
24 medications, home care, or transportation. Rather, the primary factors contributing to
25
26 readmissions that were consistently brought up by patients in our study were self triage to the ED
27
28 and a lack of primary care relationship.
29
30
31
32
33

34 While other studies have examined the challenges in transitions from inpatient care [8,
35
36 17], we explored how patients interacted with the health system when they were home. We
37
38 found that patients delayed care and then made the decision to go to the ED without attempting
39
40 to contact their primary providers. This delay of care likely resulted in a worsening of their
41
42 health status which consequently precipitated another hospital admission. The most consistent
43
44 reasons for not reaching out to their primary providers were inability to speak with a provider on
45
46 the phone, the belief that their primary care provider could not manage urgent issues, and patient
47
48 perception that their primary care provider could not address their concerns in a timely manner.
49
50
51
52

53 Our results differ from other qualitative studies evaluating readmissions. In a recent
54
55 article by Strunin et al (2007), patients expressed that they had inadequate medical care at home
56
57
58
59
60

1
2
3 and lacked transportation to appointments [3]. In contrast, we found that these needs were being
4 met for our high-risk patients. Similarly, a recent survey by Kangovi et al (2012) of patients that
5 had been readmitted found that lack of medication adherence after discharge was commonly
6 attributed to difficulty paying for medications and obtaining transportation [8]. In our sample of
7 patients, only one patient reported not being able to obtain medications due to cost. Although
8 other studies have included patients with one or more readmission within 30 days of discharge,
9 we utilized more stringent enrollment criteria, requiring patients to have had four or more
10 admissions in the prior six months. The high-risk underserved patients that we enrolled likely
11 had more interaction with the health system than other patients with fewer hospital admissions,
12 and therefore more opportunity to be linked in with formal services such as VNA and arranged
13 transportation. Thus our findings suggest that this population of patients needs more targeted
14 interventions to address the consistently stated problems of self triage and a lack of primary care
15 relationship.
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33

34 First, it is critical to have easy telephone access to primary care offices, as this is the
35 preferred method of communication for patients and is linked to improved patient outcomes [18-
36 20]. An effective telephone system would triage urgent issues, and would ensure that a member
37 of the patient's provider team is available to field urgent calls. Patients in our study commonly
38 mentioned that they wanted to receive a timely call back for urgent issues. Open access
39 scheduling, which minimizes scheduled appointments to maximize same-day visit availability,
40 typically also improves telephone access by opening up the calendar and streamlining the types
41 of appointments that can be made. The time taken per call is consequently shorter [21, 22].
42
43
44
45
46
47
48
49
50
51
52
53 Alternatively, many new electronic medical record systems allow secure messaging through the
54 electronic medical record, thereby reducing demand for telephone access, and facilitating timely
55
56
57
58
59
60

1
2
3 responses to urgent calls [23, 24]. Future research regarding the best modes of communication
4
5 with providers will be an important area of inquiry moving forward.
6
7

8 Second, many patients in our study had stopped calling their primary care provider
9
10 because of their perceptions of the primary care clinic as incapable of handling acute medical
11
12 concerns. Patient experiences, such as being transferred from their primary care office to the ED,
13
14 shaped their perception of the primary care clinic. Once access to providers has been improved
15
16 and the lack of primary care relationship has been repaired, we would suggest educating patients
17
18 about the scope of their primary care clinics as urgent care centers, as well as the role of their
19
20 primary providers in their care when they have a change in their health status. In addition,
21
22 providers should discuss their role in helping patients make triage decisions when they get sick at
23
24 home.
25
26
27
28

29 Third, patient-provider continuity is essential and has been consistently associated with
30
31 improved patient outcomes and satisfaction [25, 26]. To address the lack of primary care
32
33 relationship that patients described, there must first be a system in place that enables patients to
34
35 have continuity with their teams when they have a change in their health status [10]. This is
36
37 especially difficult in clinics staffed by residents who are present one half day per week, which is
38
39 a common model for internal medicine residency programs. When patients have urgent issues
40
41 that arise, they are often seen by providers who are not part of their primary care team. A
42
43 strategy for improving upon this situation would be to arrange residents into practice-partner
44
45 teams where they would work together to care for a larger panel of patients. While the patients
46
47 would still need to become familiar with a team of resident physicians, this has the potential to
48
49 make patients feel more comfortable seeking care for acute issues. This team-based care would
50
51 also aid in the conversion of primary care clinics to patient-centered medical homes, where
52
53
54
55
56
57
58
59
60

1
2
3 continuity is an essential tenet.
4

5 Our study has several limitations. First, we focused on an underserved population; our
6 results may not apply to other populations. Second, our sample size is small, though we did
7 employ a comprehensive strategy to identify patients meeting our enrollment criteria during the
8 study period, and we did reach theoretical saturation as evidenced by no new themes being
9 introduced in the final interviews. Third, we conducted our study at a single site, and there may
10 be other factors more prevalent at other sites contributing to readmission.
11
12
13
14
15
16
17
18
19

20 In summary, we found that even though patients were receiving the formal services that
21 they needed, they were still being driven to make the decision to go to the ED based on based on
22 long phone wait times for primary care and their belief or experience that primary care cannot
23 treat their acute problems. We propose that educating patients about the capability and role of the
24 primary care provider while concurrently streamlining telephone access to providers could
25 enhance continuity and thereby prevent readmissions. Focusing entirely on arranging formal
26 transitional care services, such as transportation and medications, is unlikely to be adequate in
27 reducing readmissions.
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

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]].

1
2
3 **Appendix 1:** List of questions from interview instrument
4

5 Tell me what happened to you since you went home between last discharge and now?
6

7
8 Do you think there is anything else that could have been done to have prevented you from
9 coming back to hospital, and if so what?
10

11 When you have a change in your health at home, or start to feel sick at home, how do you make
12 the decision to try to reach your PMD versus going to the ED?
13

14
15 How often do you try to reach your PMD as opposed to going to the ED?
16

17
18 When you have a change in your health at home, or start to feel sick at home, how long have you
19 waited in the past before contacting your provider?
20

21 Can you tell me about the medications you take at home?
22

23
24 Has a financial barrier or problem ever resulted in you not being able to obtain the medications
25 that you need? If so, tell me about it. Has this been a common problem for you?
26

27 How do you manage your medications at home?
28

29 Do you have any difficulty with your medications?
30

31 Tell me what it's like at home for you?
32

33
34 Do you have people who can help you at home?
35

36 Do you feel safe at home?
37

38
39 How do you think of the social support you have at home?
40

41 What is your financial situation?
42

43
44 In what ways do you have difficulty getting to and from your primary care appointments, if at
45 all?
46

47 How do you get around?
48

49 In the last couple of weeks, have you been feeling depressed?
50

51
52 Have you ever been on any medications for depression?
53

54 Do you feel like these feelings of depression have caused you to have to come to hospital more
55 than you otherwise would have to?
56
57
58
59
60

1
2
3 What's your relationship with your primary doctor at the Primary Care Center?
4

5
6 Do you know the name of your PMD, and do you have difficulty reaching your primary doctor if
7 you're having a problem?
8

9
10 How can your primary doctor help to prevent you from having to be readmitted to the hospital do
11 you think?
12

13
14 Can you think of anything more your primary doctor, or the Primary Care Center here at Yale
15 could do?
16

17
18 What do you think are some other things that can be done to help prevent you from having to
19 come back to the hospital, if anything?
20

21
22 Is there anything else that you think that either you or the physicians in the community could do
23 to help you with that?
24

25
26 Do you need any more home support (home nursing care, VNA, etc) than you currently are
27 receiving?
28

29
30 Finally, do you think it would be helpful for your primary doctor to call you at home to check in
31 with you on a regular basis, and why?
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

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:

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

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

³Center 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: ~~33473000~~

Tables: 1

Figures: 0

References: ~~262~~

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

1
2
3 | completed on both weekdays and weekends. Twenty-one eligible patients were identified during
4
5
6 | the study period, and four declined.

7 8 *Design*

9
10 We created an instrument with 27 open-ended questions based on areas targeted by
11
12 | current interventions as well as other qualitative studies looking at readmissions [3, 11]. We
13
14 | then conducted pilot interviews and solicited feedback about the interview questions from
15
16 | patients. The instrument was revised based on this feedback. We also extensively reviewed the
17
18 | first complete interview transcription, and further revised the instrument based on this feedback
19
20 | as well. The instrument was then revised based on pilot interviews and feedback. The final
21
22 |
23
24 | questions in the instrument included the areas of transportation, support systems, medications,
25
26 | formal services, health literacy, access to care, relationship with provider, communication with
27
28 | providers, and transitions of care (see Appendix 1 for list of questions). For questions asking for
29
30 | an affirmative/negative or numerical response, we used a strategy of planned prompts and probes
31
32 | to extend the narrative. We also included screening for depression via the Patient Health
33
34 | Questionnaire-2 (PHQ-2) [12] and for unhealthy alcohol use via the National Institute on
35
36 | Alcohol Abuse and Alcoholism (NIAAA) recommended tool [13]. The IRB waived the written
37
38 | consent requirement due to the fact that no identifying information was used. Informed consent
39
40 | was obtained verbally from all study participants. One investigator (T.L.) conducted semi-
41
42 | structured interviews. The interviews were recorded and then transcribed by a subcontracted
43
44 | transcriber.

45 46 47 48 49 *Analysis*

50
51
52 | Three investigators (T.L., I.G., L.H.) independently generated codes from the primary
53
54 | transcriptions. The codes represented themes found in the data. The investigators initially coded
55
56 |
57
58
59
60

1
2
3 the first four transcriptions independently and then reviewed the coding scheme and resolved
4
5 discrepancies collaboratively. The transcriptions were saved as Microsoft Word documents, with
6
7 codes being tracked as Comments within these documents. This process was repeated two more
8
9 times, with all transcriptions being coded independently and then meeting to come to a group
10
11 consensus. It was decided ahead of time that transcriptions would be coded until theoretical
12
13 saturation was reached and no new codes were being introduced in the interviews. A final code
14
15 list was developed using the constant comparative method ¹⁴. The codes were organized into
16
17 11 main themes.

21 Results

22
23
24
25
26 We completed 17 interviews (11 women, 6 men). On average, the interviews were 15 to
27
28 20 minutes long. Every patient except one screened negative for unhealthy alcohol use per the
29
30 NIAAA tool and 47% had a positive screen for depression per the PHQ-2. We identified 11
31
32 themes (Table 1), and describe five relating to risk of readmission: ~~lack of~~ fragmented primary
33
34 care relationships contributing to avoidance of ambulatory care, self triage leading to potentially
35
36 avoidable ED use, adequacy of formal services, heavy reliance on informal support systems,
37
38 inadequate access to care. The codes contributing to these five themes were consistent
39
40 throughout the interviews and pertained to either reasons for readmission or current interventions
41
42 targeted at decreasing readmissions. The other themes represented self-reported descriptions,
43
44 such as substance abuse for the theme of patient characteristics. Overall, we found that while
45
46 patients described receiving adequate formal services, barriers in accessing care and disjointed
47
48 primary care relationships led to patients making their own triage decisions and seeking other
49
50 support systems.
51
52
53
54
55
56
57
58
59
60

Table 1: 11 Main Themes

<u>Heavy Reliance on</u> Informal Support Systems
<u>Adequacy of</u> Formal Services
Health Literacy
<u>Inadequate</u> Access to Care
Lack of <u>Fragmented</u> Primary Care Relationships <u>Contributing to Avoidance of Ambulatory Care</u>
Self Triage <u>Leading to Potentially Avoidable ED Use</u>
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

1
2
3 developing a relationship with their providers. One patient explained: “Well, I hate that they
4 keep switching doctors. They can’t really keep the same doctor because as soon as you get
5 comfortable with one person they’ll let you know somebody else is there. Now it’s like you got
6 to learn this person all over. I hate changing doctors. I don’t like that.” Another patient described
7 improving the relationship with her primary provider, stating “It [would] make me feel better
8 knowing that somebody cares [...] They could give advice on the phone telling me what I should
9 do. And I could do that to prevent going to the hospital because I’m in the hospital a lot.”

10 *Self Triage Leading to Potentially Avoidable ED Use*

11
12 We found that patients were typically going directly to the Emergency Department (ED)
13 without contacting their primary care provider: “I could tell the pain, if it is severe enough to go
14 to the PCC and sit around to be called in the clinic or do I need to just get out there and go right
15 to the emergency room. So I could tell the difference, I learned to know my body now after
16 getting so sick and the last three years I’ve been very sick.”

17
18 Patients commonly cited inability to reach their primary provider via telephone and the
19 belief that the PCC could not treat acute illness as reasons for going directly to the ED. One
20 patient explained that “I know that once I get there [to the PCC], they would send me anyway so
21 I might just as well go to the [ED] first.”

22
23 Finally, amongst patients who decided to go to the ED instead of going for an urgent
24 primary care visit, a common theme was delaying action until the situation became more serious.
25 One patient commented “I wait[ed] instead to get better [...] my head was pounding and when I
26 walked to the bathroom I'd be staggering [...] I mashed my lifeline, and the ambulance picked
27 me up.”

28 *Adequacy of Formal Services*

1
2
3 We found that patients had limited or no difficulty accessing formal services such as
4 medication assistance, home care, and transportation. All patients except one were able to obtain
5 medications either despite financial barriers or with no financial barriers. One patient noted “I
6 got medical and they basically pay for [medications].” Patients similarly found home care
7 accessible, describing “Well, I have a nurse coming usually once a week and more often if there
8 is something going on.” Formal transportation was obtained with minimal difficulty, with one
9 patient explaining “They have a car that gets me [...] I have to call and make an appointment and
10 they would call people telling them two days in advance.”
11
12
13
14
15
16
17
18
19
20
21

22 Heavy Reliance on Informal Support Systems

23
24
25 Despite the widespread availability and use of formal post-discharge support systems,
26 patients reported still relying heavily on informal support from friends and family members to
27 help with transportation and medication management. One patient described “So my daughter
28 sets them out now so it makes it easier for the visit nurse, so that’s how I manage my medication
29 at home. They put it in a little blue container and my daughter sets them up by the week.”
30
31
32
33
34
35

36 Another patient commented “If I can’t move, my family give me a ride - my daughter, my man,
37 my niece, my nephew, my son.” Patients demonstrated resilient attitudes based on the high

38
39 degree of support they received from friends and family members, and notably described that
40 they did not feel lonely or socially isolated despite spending a great deal of time in the hospital.

41
42
43 Patients also reported feeling safe at home.
44
45

46 Inadequate Access to Care

47
48
49 The most commonly cited problem inhibiting patients from accessing medical care was
50 an impaired ability to speak to their provider on the telephone. This was described as both
51 difficulty in reaching someone on the phone as well as long waiting times before receiving a call
52
53
54
55
56
57
58
59
60

1
2
3 back from a provider. As one patient noted, “I don’t call primary care because it takes too long to
4
5 get through to anybody until you get the call – I could have gone on a trip to Europe and back.”
6
7

8 Patients also noted that they had stopped even trying to call based on prior experiences:
9
10 “I try to call the Primary Care Center. But it’s like that one time that took 7 hours. I haven’t
11
12 called them [since]. So it’s like either I stick it out and let the pain or whatever subside, or I go
13
14 down to the ER. If I called them one time and it took them some hours to get back to me, I feel
15
16 that it’s useless if I call again.”
17
18

19 Discussion

20
21
22 In this study of underserved patients with a high frequency of hospital readmissions, we
23
24 found that there may be factors contributing to readmissions that are not addressed by most
25
26 current interventions, which typically target access to formal outpatient services ^{3, 15, 16}.
27
28 Contrary to our expectations, patients from our sample did not have difficulty accessing
29
30 medications~~patients did not have difficulty accessing medications~~, home care, or transportation.
31
32
33 Rather, the primary factors contributing to readmissions that were consistently brought up by
34
35 patients in our study were self triage to the ED and a lack of primary care relationship.
36
37

38
39 While other studies have examined the challenges in transitions from inpatient care ^{8,}
40
41 ¹⁷, we explored how patients ~~were interacting~~interacted with the health system when they were
42
43 home. We found that patients ~~were delaying~~delayed care and then ~~making~~made the decision to
44
45 go to the ED without attempting to contact their primary providers. This delay of care likely
46
47 resulted in a worsening of their health status which consequently precipitated another hospital
48
49 admission. The most consistent reasons for not reaching out to their primary providers were
50
51 inability to speak with a provider on the phone, the belief that their primary care provider could
52
53 not manage urgent issues, and patient perception that their primary care provider could not
54
55
56
57
58
59
60

1
2
3 address their concerns in a timely manner.
4

5 Our results differ from other qualitative studies evaluating readmissions. In a recent
6 article by Strunin et al (2007), patients expressed that they had inadequate medical care at home
7 and lacked transportation to appointments ³. In contrast, we found that these needs were being
8 met for our high-risk patients. Similarly, a recent survey by Kangovi et al (2012) of patients that
9 had been readmitted found that lack of medication adherence after discharge was commonly
10 attributed to difficulty paying for medications and obtaining transportation ⁸. In our sample of
11 patients, only one patient reported not being able to obtain medications due to cost. Although
12 other studies have included patients with one or more readmission within 30 days of discharge,
13 we utilized more stringent enrollment criteria, requiring patients to have had four or more
14 admissions in the prior six months. The high-risk underserved patients that we enrolled likely
15 had more interaction with the health system than other patients with fewer hospital admissions,
16 and therefore more opportunity to be linked in with formal services such as VNA and arranged
17 transportation. Thus our findings suggest that this population of patients needs more targeted
18 interventions to address the consistently stated problems of self triage and a lack of primary care
19 relationship.
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39

40 First, it is critical to have easy telephone access to primary care offices, as this is the
41 preferred method of communication for patients and is linked to improved patient outcomes ¹⁸⁻
42 ²⁰. ~~Inadequate telephone access contributes to patients having difficulty obtaining urgent care~~
43 ~~when they have a change in health status.~~ An effective telephone system would triage urgent
44 issues, and would ensure that a member of the patient's provider team is available to field urgent
45 calls. Patients in our study commonly mentioned that they wanted to receive a timely call back
46 for urgent issues. ~~Several strategies exist to improve telephone access.~~ Open access scheduling,
47
48
49
50
51
52
53
54
55
56
57
58
59
60

1
2
3 which minimizes scheduled appointments to maximize same-day visit availability, typically also
4
5 improves telephone access by opening up the calendar and streamlining the types of
6
7 appointments that can be made. The time taken per call is consequently shorter [-[21, 22].

8
9
10 Alternatively, many new electronic medical record systems allow secure messaging through the
11
12 electronic medical record [-This feature provides an alternative method of communication for
13
14 patients, thereby reducing demand for telephone access, and facilitating timely responses to
15
16 urgent calls [-[23, 24]. Future research regarding the best modes of communication with providers
17
18 will be an important area of inquiry moving forward.

19
20
21
22 Second, many patients in our study had stopped calling their primary care provider
23
24 because of their perceptions of the primary care clinic as incapable of handling acute medical
25
26 concerns. Patient experiences, such as being transferred from their primary care office to the ED,
27
28 shaped their perception of the primary care clinic. Once access to providers has been improved
29
30 and the lack of primary care relationship has been repaired, ~~We~~ we would suggest educating
31
32 patients about the scope of their primary care clinics as urgent care centers, as well as the role of
33
34 their primary providers in their care when they have a change in their health status. In addition,
35
36 providers should discuss their role in helping patients make triage decisions when they get sick at
37
38 home.
39
40
41
42

43
44 Third, patient-provider continuity is essential and has been consistently associated with
45
46 improved patient outcomes and satisfaction [-[25, 26]. To address the lack of primary care
47
48 relationship that patients described, there must first be a system in place that enables patients to
49
50 have continuity with their teams when they have a change in their health status [10]. This is
51
52 especially difficult in clinics staffed by residents who are present one half day per week, which is
53
54 a common model for internal medicine residency programs. When patients have urgent issues
55
56
57
58
59
60

1
2
3 that arise, they are often seen by providers who are not part of their primary care team. A
4
5 strategy for improving upon this situation would be to arrange residents into practice-partner
6
7 teams where they would work together to care for a larger panel of patients. ~~Residents would~~
8
9 ~~rotate ambulatory blocks such that a member of the team would be in clinic daily for the duration~~
10
11 ~~of an outpatient block to handle urgent issues that arise for any patient on the team panel. The~~
12
13 ~~patients would be well known to a small group of rotating residents.~~ While the patients would
14
15 still need to become familiar with a team of resident physicians, this has the potential to make
16
17 patients feel more comfortable seeking care for acute issues. This team-based care would also aid
18
19 in the conversion of primary care clinics to patient-centered medical homes, where continuity is
20
21 an essential tenet.
22
23
24
25
26

27 Our study has several limitations. First, we focused on an underserved population; our
28
29 results may not apply to other populations. Second, our sample size is small, though we did
30
31 employ a comprehensive strategy to identify patients meeting our enrollment criteria during the
32
33 study period, and we did reach theoretical saturation as evidenced by no new themes being
34
35 introduced in the final interviews. Third, we conducted our study at a single site, and there may
36
37 be other factors more prevalent at other sites contributing to readmission.
38
39
40

41 In summary, we found that even though patients were receiving the formal services that
42
43 they needed, they were still being driven to make the decision to go to the ED based on based on
44
45 long phone wait times for primary care and their belief or experience that primary care cannot
46
47 treat their acute problems. We propose that educating patients about the capability and role of the
48
49 primary care provider while concurrently streamlining telephone access to providers could
50
51 enhance continuity and thereby prevent readmissions. Focusing entirely on arranging formal
52
53 transitional care services, such as transportation and medications, is unlikely to be adequate in
54
55
56
57
58
59
60

1
2
3 reducing readmissions.
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

For peer review only

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]].

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

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?

1
2
3 Has a financial barrier or problem ever resulted in you not being able to obtain the medications
4 that you need? If so, tell me about it. Has this been a common problem for you?
5
6

7 How do you manage your medications at home?
8

9 Do you have any difficulty with your medications?
10

11 Tell me what it's like at home for you?
12

13 Do you have people who can help you at home?
14

15 Do you feel safe at home?
16

17 How do you think of the social support you have at home?
18

19 What is your financial situation?
20

21 In what ways do you have difficulty getting to and from your primary care appointments, if at
22 all?
23

24 How do you get around?
25

26 In the last couple of weeks, have you been feeling depressed?
27

28 Have you ever been on any medications for depression?
29

30 Do you feel like these feelings of depression have caused you to have to come to hospital more
31 than you otherwise would have to?
32

33 What's your relationship with your primary doctor at the Primary Care Center?
34

35 Do you know the name of your PMD, and do you have difficulty reaching your primary doctor if
36 you're having a problem?
37

38 How can your primary doctor help to prevent you from having to be readmitted to the hospital do
39 you think?
40

41 Can you think of anything more your primary doctor, or the Primary Care Center here at Yale
42 could do?
43

44 What do you think are some other things that can be done to help prevent you from having to
45 come back to the hospital, if anything?
46

47 Is there anything else that you think that either you or the physicians in the community could do
48 to help you with that?
49

1
2
3 Do you need any more home support (home nursing care, VNA, etc) than you currently are
4 receiving?
5
6

7 Finally, do you think it would be helpful for your primary doctor to call you at home to check in
8 with you on a regular basis, and why?
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

For peer review only

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? <i>E.g. PhD, MD</i> 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? <i>e.g. personal goals, reasons for doing the research</i> 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? <i>e.g. Bias, assumptions, reasons and interests in the research topic</i> 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? <i>e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis</i> Grounded theory
Participant selection		
10.	Sampling	How were participants selected? <i>e.g. purposive, convenience, consecutive, snowball</i> Purposive
11.	Method of approach	How were participants approached? <i>e.g. face-to-face, telephone, mail, email</i> 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. <i>home, clinic, workplace</i> 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. <i>demographic data, date</i> 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 findings	
	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. <i>participant number</i> Quotations were used but not identified
30.	Data and findings consistent	Was there consistency between the data presented and the findings?

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

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

For peer review only



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

Journal:	<i>BMJ Open</i>
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, Ingina; 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

SCHOLARONE™
Manuscripts

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, MHS²⁻⁴

Running Title: High-Risk Readmissions

Author affiliations:

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

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

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

⁴Center 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

1
2
3 declined.

4
5
6 *Design*

7
8 We created an instrument with 27 open-ended questions based on areas targeted by
9
10 current interventions as well as other qualitative studies looking at readmissions [3 11]. Given
11
12 that most interventions are focused on supporting the patient in the post-discharge period, we
13
14 focused our study on understanding the patient experience of several key support domains:
15
16 social/emotional support (from friends, family, and clinicians), instrumental health system
17
18 support (medications, transportation, access to outpatient care), and informational support
19
20 (knowledge and self-efficacy) [12]. We then conducted pilot interviews and solicited feedback
21
22 about the interview questions from patients. The instrument was revised based on this feedback.
23
24 We also extensively reviewed the first complete interview transcription, and further revised the
25
26 instrument based on this feedback as well. The final questions in the instrument included the
27
28 areas of transportation, support systems, medications, formal services, health literacy, access to
29
30 care, relationship with provider, communication with providers, and transitions of care (see
31
32 Appendix 1 for list of questions). For questions asking for an affirmative/negative or numerical
33
34 response, we used a strategy of planned prompts and probes to extend the narrative. We also
35
36 included screening for depression via the Patient Health Questionnaire-2 (PHQ-2) [13] and for
37
38 unhealthy alcohol use via the National Institute on Alcohol Abuse and Alcoholism (NIAAA)
39
40 recommended tool [14]. The IRB waived the written consent requirement due to the fact that no
41
42 identifying information was used. Informed consent was obtained verbally from all study
43
44 participants. One investigator (T.L.) conducted semi-structured interviews. The interviews were
45
46 recorded and then transcribed by a subcontracted transcriber.
47
48
49
50
51
52
53

54
55 *Analysis*

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54

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

35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54

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)

<i>Age</i>	<i>Number (%)</i>
19 to 39	10 (28)

40 to 64	18 (50)
65 or above	8 (22)
<i>Race/Ethnicity</i>	
Hispanic	8 (22)
Black	16 (44)
White	11 (31)
Other	1 (3)
<i>Insurance Status</i>	
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

<i>ED Visit Diagnosis</i>	<i>Hospital Admission Diagnosis</i>
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

<i>Primary Care and ED Characteristics</i>	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

1
2
3 I might just as well go to the [ED] first.”
4

5
6 Finally, amongst patients who decided to go to the ED instead of going for an urgent
7
8 primary care visit, a common theme was delaying action until the situation became more serious.
9
10 One patient commented “I wait[ed] instead to get better [...] my head was pounding and when I
11
12 walked to the bathroom I'd be staggering [...] I mashed my lifeline, and the ambulance picked
13
14 me up.”
15

16 17 *Adequacy of Formal Services* 18

19
20 We found that patients had limited or no difficulty accessing formal services such as
21
22 medication assistance, home care, and transportation. All patients except one were able to obtain
23
24 medications either despite financial barriers or with no financial barriers. One patient noted “I
25
26 got medical and they basically pay for [medications].” Patients similarly found home care
27
28 accessible, describing “Well, I have a nurse coming usually once a week and more often if there
29
30 is something going on.” Formal transportation was obtained with minimal difficulty, with one
31
32 patient explaining “They have a car that gets me [...] I have to call and make an appointment and
33
34 they would call people telling them two days in advance.”
35
36
37

38 39 *Heavy Reliance on Informal Support Systems* 40

41
42 Despite the widespread availability and use of formal post-discharge support systems,
43
44 patients reported still relying heavily on informal support from friends and family members to
45
46 help with transportation and medication management. One patient described “So my daughter
47
48 sets them out now so it makes it easier for the visit nurse, so that’s how I manage my medication
49
50 at home. They put it in a little blue container and my daughter sets them up by the week.”
51
52 Another patient commented “If I can’t move, my family give me a ride - my daughter, my man,
53
54 my niece, my nephew, my son.” Patients demonstrated resilient attitudes based on the high
55
56
57
58
59
60

1
2
3 degree of support they received from friends and family members, and notably described that
4 they did not feel lonely or socially isolated despite spending a great deal of time in the hospital.
5
6

7
8 Patients also reported feeling safe at home.
9

10 *Inadequate Access to Care*

11
12 The most commonly cited problem inhibiting patients from accessing medical care was
13 an impaired ability to speak to their provider on the telephone. This was described as both
14 difficulty in reaching someone on the phone as well as long waiting times before receiving a call
15 back from a provider. As one patient noted, “I don’t call primary care because it takes too long to
16 get through to anybody until you get the call – I could have gone on a trip to Europe and back.”
17
18
19
20
21
22
23

24 Patients also noted that they had stopped even trying to call based on prior experiences:
25
26 “I try to call the Primary Care Center. But it’s like that one time that took 7 hours. I haven’t
27 called them [since]. So it’s like either I stick it out and let the pain or whatever subside, or I go
28 down to the ER. If I called them one time and it took them some hours to get back to me, I feel
29 that it’s useless if I call again.”
30
31
32
33
34
35

36 **Discussion**

37
38 In this study of underserved patients with a high frequency of hospital readmissions, we
39 found that there may be factors contributing to readmissions that are not addressed by most
40 current interventions, which typically target access to formal outpatient services [3 16 17].
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100
101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
134
135
136
137
138
139
140
141
142
143
144
145
146
147
148
149
150
151
152
153
154
155
156
157
158
159
160
161
162
163
164
165
166
167
168
169
170
171
172
173
174
175
176
177
178
179
180
181
182
183
184
185
186
187
188
189
190
191
192
193
194
195
196
197
198
199
200
201
202
203
204
205
206
207
208
209
210
211
212
213
214
215
216
217
218
219
220
221
222
223
224
225
226
227
228
229
230
231
232
233
234
235
236
237
238
239
240
241
242
243
244
245
246
247
248
249
250
251
252
253
254
255
256
257
258
259
260
261
262
263
264
265
266
267
268
269
270
271
272
273
274
275
276
277
278
279
280
281
282
283
284
285
286
287
288
289
290
291
292
293
294
295
296
297
298
299
300
301
302
303
304
305
306
307
308
309
310
311
312
313
314
315
316
317
318
319
320
321
322
323
324
325
326
327
328
329
330
331
332
333
334
335
336
337
338
339
340
341
342
343
344
345
346
347
348
349
350
351
352
353
354
355
356
357
358
359
360
361
362
363
364
365
366
367
368
369
370
371
372
373
374
375
376
377
378
379
380
381
382
383
384
385
386
387
388
389
390
391
392
393
394
395
396
397
398
399
400
401
402
403
404
405
406
407
408
409
410
411
412
413
414
415
416
417
418
419
420
421
422
423
424
425
426
427
428
429
430
431
432
433
434
435
436
437
438
439
440
441
442
443
444
445
446
447
448
449
450
451
452
453
454
455
456
457
458
459
460
461
462
463
464
465
466
467
468
469
470
471
472
473
474
475
476
477
478
479
480
481
482
483
484
485
486
487
488
489
490
491
492
493
494
495
496
497
498
499
500
501
502
503
504
505
506
507
508
509
510
511
512
513
514
515
516
517
518
519
520
521
522
523
524
525
526
527
528
529
530
531
532
533
534
535
536
537
538
539
540
541
542
543
544
545
546
547
548
549
550
551
552
553
554
555
556
557
558
559
560
561
562
563
564
565
566
567
568
569
570
571
572
573
574
575
576
577
578
579
580
581
582
583
584
585
586
587
588
589
590
591
592
593
594
595
596
597
598
599
600
601
602
603
604
605
606
607
608
609
610
611
612
613
614
615
616
617
618
619
620
621
622
623
624
625
626
627
628
629
630
631
632
633
634
635
636
637
638
639
640
641
642
643
644
645
646
647
648
649
650
651
652
653
654
655
656
657
658
659
660
661
662
663
664
665
666
667
668
669
670
671
672
673
674
675
676
677
678
679
680
681
682
683
684
685
686
687
688
689
690
691
692
693
694
695
696
697
698
699
700
701
702
703
704
705
706
707
708
709
710
711
712
713
714
715
716
717
718
719
720
721
722
723
724
725
726
727
728
729
730
731
732
733
734
735
736
737
738
739
740
741
742
743
744
745
746
747
748
749
750
751
752
753
754
755
756
757
758
759
760
761
762
763
764
765
766
767
768
769
770
771
772
773
774
775
776
777
778
779
780
781
782
783
784
785
786
787
788
789
790
791
792
793
794
795
796
797
798
799
800
801
802
803
804
805
806
807
808
809
810
811
812
813
814
815
816
817
818
819
820
821
822
823
824
825
826
827
828
829
830
831
832
833
834
835
836
837
838
839
840
841
842
843
844
845
846
847
848
849
850
851
852
853
854
855
856
857
858
859
860
861
862
863
864
865
866
867
868
869
870
871
872
873
874
875
876
877
878
879
880
881
882
883
884
885
886
887
888
889
890
891
892
893
894
895
896
897
898
899
900
901
902
903
904
905
906
907
908
909
910
911
912
913
914
915
916
917
918
919
920
921
922
923
924
925
926
927
928
929
930
931
932
933
934
935
936
937
938
939
940
941
942
943
944
945
946
947
948
949
950
951
952
953
954
955
956
957
958
959
960
961
962
963
964
965
966
967
968
969
970
971
972
973
974
975
976
977
978
979
980
981
982
983
984
985
986
987
988
989
990
991
992
993
994
995
996
997
998
999
1000

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

1
2
3 18], we explored how patients interacted with the health system when they were home. We
4
5 found that patients delayed care and then made the decision to go to the ED without attempting
6
7 to contact their primary providers. Delays in care may have increased risk for readmission. The
8
9 most consistent reasons for not reaching out to their primary providers were inability to speak
10
11 with a provider on the phone, the belief that their primary care provider could not manage urgent
12
13 issues, and patient perception that their primary care provider could not address their concerns in
14
15 a timely manner.
16
17
18

19
20 Our results differ from other qualitative studies evaluating readmissions. In a recent
21
22 article by Strunin et al (2007), patients expressed that they had inadequate medical care at home
23
24 and lacked transportation to appointments [3]. In contrast, we found that these needs were being
25
26 met for our high-risk patients. Similarly, a recent survey by Kangovi et al (2012) of patients that
27
28 had been readmitted found that lack of medication adherence after discharge was commonly
29
30 attributed to difficulty paying for medications and obtaining transportation [8]. In our sample of
31
32 patients, only one patient reported not being able to obtain medications due to cost. Although
33
34 other studies have included patients with one or more readmission within 30 days of discharge,
35
36 we utilized more stringent enrollment criteria, requiring patients to have had four or more
37
38 admissions in the prior six months. The high-risk underserved patients that we enrolled may have
39
40 had more interaction with the hospital system than other patients with fewer hospital admissions,
41
42 and therefore may have had more opportunity to be linked in with formal services such as
43
44 medication assistance, visiting nurse services, and transportation arranged through the hospital.
45
46 However, future studies will be needed to determine if there is indeed a direct association
47
48 between increased interaction with the hospital system and increased formal services compared
49
50 to other patient populations.
51
52
53
54
55
56
57
58
59
60

1
2
3
4
5
6 Our findings suggest that this population of patients needs more targeted interventions to
7
8 address the consistently stated problems of self triage and a lack of primary care relationship.
9

10 Another recent study by Kangovi et al (2013) described a social norm of high-risk patients
11 preferring the hospital for care when they have a change in their health status [19]. They
12
13 similarly conclude that targeted interventions should address the needs of high-risk patients in
14
15 the ambulatory setting.
16
17
18

19
20 First, improving telephone access to primary care offices is important, as many primary
21
22 care patients prefer this method of communication, and it is linked to improved patient outcomes
23
24 [20-22]. An effective telephone system would triage urgent issues, and would ensure that a
25
26 member of the patient's provider team is available to field urgent calls. Patients in our study
27
28 commonly mentioned that they wanted to receive a timely call back for urgent issues. Open
29
30 access scheduling, which minimizes scheduled appointments to maximize same-day visit
31
32 availability, typically also improves telephone access by opening up the calendar and
33
34 streamlining the types of appointments that can be made. The time taken per call is consequently
35
36 shorter [23 24]. Alternatively, many new electronic medical record systems allow secure
37
38 messaging through the electronic medical record, thereby reducing demand for telephone access,
39
40 and facilitating timely responses to urgent calls [25 26]. Future research regarding the best
41
42 modes of communication with providers will be an important area of inquiry moving forward.
43
44
45
46
47

48 Second, many patients in our study had stopped calling their primary care provider
49
50 because of their perceptions of the primary care clinic as incapable of handling acute medical
51
52 concerns. Patient experiences, such as being transferred from their primary care office to the ED,
53
54 shaped their perception of the primary care clinic. Once access to providers has been improved
55
56
57
58
59
60

1
2
3 and the lack of primary care relationship has been repaired, we would suggest educating patients
4
5 about the scope of their primary care clinics as urgent care centers, as well as the role of their
6
7 primary providers in their care when they have a change in their health status. In addition,
8
9 providers should discuss their role in helping patients make triage decisions when they get sick at
10
11 home.
12
13

14
15 Third, patients in our study described inadequate continuity with their providers. Patient-
16
17 provider continuity has been consistently associated with improved patient outcomes and
18
19 satisfaction [27 28]. To address the lack of primary care relationship that patients described,
20
21 there must first be a system in place that enables patients to have continuity with their teams
22
23 when they have a change in their health status [10]. This is especially difficult in clinics staffed
24
25 by residents who are present one half day per week, which is a common model for internal
26
27 medicine residency programs. When patients have urgent issues that arise, they are often seen by
28
29 providers who are not part of their primary care team. A strategy for improving upon this
30
31 situation would be to arrange residents into practice-partner teams where they would work
32
33 together to care for a larger panel of patients. While the patients would still need to become
34
35 familiar with a team of resident physicians, this has the potential to make patients feel more
36
37 comfortable seeking care for acute issues. This team-based care would also aid in the conversion
38
39 of primary care clinics to patient-centered medical homes, where continuity is an essential tenet.
40
41
42
43
44

45
46 Our study has several limitations. First, we focused on an underserved population; our
47
48 results may not apply to other populations. Second, our sample size is small, though we did
49
50 employ a comprehensive strategy to identify patients meeting our enrollment criteria during the
51
52 study period, and we did reach theoretical saturation as evidenced by no new themes being
53
54 introduced in the final interviews. Third, we conducted our study at a single site, and there may
55
56
57
58
59
60

1
2
3 be other factors more prevalent at other sites contributing to readmission.
4

5
6 In summary, we found that even though patients were receiving the formal services that
7
8 they needed, they were still being driven to make the decision to go to the ED based on based on
9
10 long phone wait times for primary care and their belief or experience that primary care cannot
11
12 treat their acute problems. We propose that educating patients about the capability and role of the
13
14 primary care provider while concurrently streamlining telephone access to providers could
15
16 enhance continuity and thereby prevent readmissions. Focusing entirely on arranging formal
17
18 transitional care services, such as transportation and medications, is unlikely to be adequate in
19
20 reducing readmissions.
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

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]].

1
2
3
4
5
6
7 **Appendix 1:** List of questions from interview instrument
8

9 Tell me what happened to you since you went home between last discharge and now?
10

11 Do you think there is anything else that could have been done to have prevented you from
12 coming back to hospital, and if so what?
13

14 When you have a change in your health at home, or start to feel sick at home, how do you make
15 the decision to try to reach your PMD versus going to the ED?
16
17

18 How often do you try to reach your PMD as opposed to going to the ED?
19

20 When you have a change in your health at home, or start to feel sick at home, how long have you
21 waited in the past before contacting your provider?
22
23

24 Can you tell me about the medications you take at home?
25

26 Has a financial barrier or problem ever resulted in you not being able to obtain the medications
27 that you need? If so, tell me about it. Has this been a common problem for you?
28
29

30 How do you manage your medications at home?
31

32 Do you have any difficulty with your medications?
33
34

35 Tell me what it's like at home for you?
36

37 Do you have people who can help you at home?
38

39 Do you feel safe at home?
40

41 How do you think of the social support you have at home?
42
43

44 What is your financial situation?
45

46 In what ways do you have difficulty getting to and from your primary care appointments, if at
47 all?
48
49

50 How do you get around?
51

52 In the last couple of weeks, have you been feeling depressed?
53
54

55 Have you ever been on any medications for depression?
56
57
58
59
60

1
2
3 Do you feel like these feelings of depression have caused you to have to come to hospital more
4 than you otherwise would have to?
5

6
7 What's your relationship with your primary doctor at the Primary Care Center?
8

9 Do you know the name of your PMD, and do you have difficulty reaching your primary doctor if
10 you're having a problem?
11

12 How can your primary doctor help to prevent you from having to be readmitted to the hospital do
13 you think?
14

15
16 Can you think of anything more your primary doctor, or the Primary Care Center here at Yale
17 could do?
18

19
20 What do you think are some other things that can be done to help prevent you from having to
21 come back to the hospital, if anything?
22

23 Is there anything else that you think that either you or the physicians in the community could do
24 to help you with that?
25

26
27 Do you need any more home support (home nursing care, VNA, etc) than you currently are
28 receiving?
29

30 Finally, do you think it would be helpful for your primary doctor to call you at home to check in
31 with you on a regular basis, and why?
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

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^{2,4,3}

Running Title: High-Risk Readmissions

Author affiliations:

¹Internal 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,](#)

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

⁴Center 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](#) ~~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 color: Black, Pattern: Clear (White)

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~~

Figures: 0

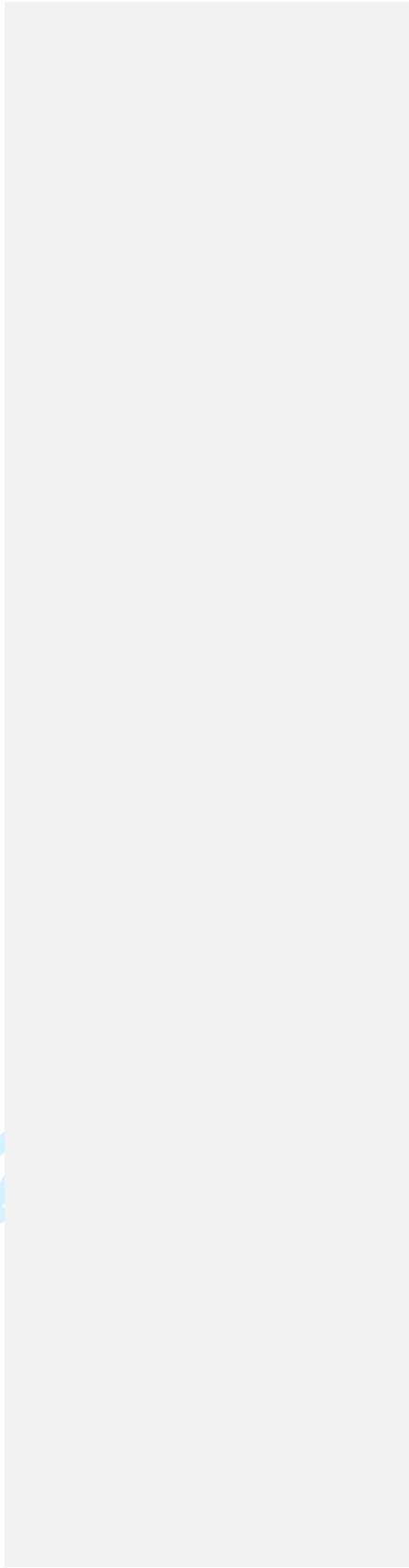
References: ~~2~~86

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

Word count (abstract): 214

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

For peer review only



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.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

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

1
2
3
4
5
6
7
8
9 four declined.

10 11 *Design*

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

32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 *Analysis*

1
2
3
4
5
6
7
8
9 Three investigators (T.L., I.G., L.H.) independently generated codes from the primary
10 transcriptions. The codes represented themes found in the data. The investigators initially coded
11 the first four transcriptions independently and then reviewed the coding scheme and resolved
12 discrepancies collaboratively. The transcriptions were saved as Microsoft Word documents, with
13 codes being tracked as Comments within these documents. This process was repeated two more
14 times, with all transcriptions being coded independently and then meeting to come to a group
15 consensus. It was decided ahead of time that transcriptions would be coded until theoretical
16 saturation was reached and no new codes were being introduced in the interviews. A final code
17 list was developed using the constant comparative method [15]. The codes were organized into
18 11 main themes.
19
20
21
22
23
24
25
26
27
28
29

30 Results

31 ~~We completed 17 interviews (11 women, 6 men). On average, the interviews were 15 to~~
32 ~~20 minutes long. Every patient except one screened negative for unhealthy alcohol use per the~~
33 ~~NIAAA tool and 47% had a positive screen for depression per the PHQ-2.~~

34 ~~Thirty-six patients met inclusion criteria at the onset of the study. Of the 36 patients, 21~~
35 ~~eligible patients were approached, and four declined. We completed 17 interviews (11 women, 6~~
36 ~~men). On average, the interviews were 15 to 20 minutes long. For the overall cohort of 36~~
37 ~~patients meeting inclusion criteria, patient characteristics are provided in Table 1. When patients~~
38 ~~presented to the ED, 67% of the time they were admitted to the hospital (see Table 2 for hospital~~
39 ~~admission and ED diagnoses). Patients also had multiple visits to the PCC and the ED (Table 3).~~
40 ~~Sixteen of the 17 patients we interviewed screened negative for unhealthy alcohol use per the~~
41 ~~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)

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

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

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

Table 3: PCC and ED Utilization

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

We identified 11 themes (Table 44), and describe five relating to risk of readmission:

Formatted: Indent: First line: 0.5"

1
2
3
4
5
6
7
8
9 fragmented primary care relationships contributing to avoidance of ambulatory care, self triage
10 leading to potentially avoidable ED use, adequacy of formal services, heavy reliance on informal
11 support systems, and inadequate access to care. The codes contributing to these five themes were
12
13 consistent throughout the interviews and pertained to either reasons for readmission or current
14
15 interventions targeted at decreasing readmissions. The other themes represented self-reported
16
17 descriptions, such as substance abuse for the theme of patient characteristics. Overall, we found
18
19 that while patients described receiving adequate formal services, barriers in accessing care and
20
21 disjointed primary care relationships led to patients making their own triage decisions and
22
23 seeking other support systems.
24

25
26 **Table 4:** 11 Main Themes

27 28 29 30	Heavy Reliance on Informal Support Systems
31 32	Adequacy of Formal Services
33 34	Health Literacy
35 36	Inadequate Access to Care
37 38 39 40 41 42	Fragmented Primary Care Relationships Contributing to Avoidance of Ambulatory Care
43 44 45	Self Triage Leading to Potentially Avoidable ED Use
46 47	Patient Phone Call
48 49	Discharge Planning
50 51 52	Patient Characteristics

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

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

1
2
3
4
5
6
7
8
9 belief that the PCC could not treat acute illness as reasons for going directly to the ED. One
10 patient explained that “I know that once I get there [to the PCC], they would send me anyway so
11 I might just as well go to the [ED] first.”
12

13
14 Finally, amongst patients who decided to go to the ED instead of going for an urgent
15 primary care visit, a common theme was delaying action until the situation became more serious.
16 One patient commented “I wait[ed] instead to get better [...] my head was pounding and when I
17 walked to the bathroom I'd be staggering [...] I mashed my lifeline, and the ambulance picked
18 me up.”
19
20
21
22
23

24 *Adequacy of Formal Services*

25
26 We found that patients had limited or no difficulty accessing formal services such as
27 medication assistance, home care, and transportation. All patients except one were able to obtain
28 medications either despite financial barriers or with no financial barriers. One patient noted “I
29 got medical and they basically pay for [medications].” Patients similarly found home care
30 accessible, describing “Well, I have a nurse coming usually once a week and more often if there
31 is something going on.” Formal transportation was obtained with minimal difficulty, with one
32 patient explaining “They have a car that gets me [...] I have to call and make an appointment and
33 they would call people telling them two days in advance.”
34
35
36
37
38
39

40 *Heavy Reliance on Informal Support Systems*

41
42 Despite the widespread availability and use of formal post-discharge support systems,
43 patients reported still relying heavily on informal support from friends and family members to
44 help with transportation and medication management. One patient described “So my daughter
45 sets them out now so it makes it easier for the visit nurse, so that's how I manage my medication
46 at home. They put it in a little blue container and my daughter sets them up by the week.”
47
48
49
50
51
52

1
2
3
4
5
6
7
8
9 Another patient commented “If I can’t move, my family give me a ride - my daughter, my man,
10 my niece, my nephew, my son.” Patients demonstrated resilient attitudes based on the high
11 degree of support they received from friends and family members, and notably described that
12 they did not feel lonely or socially isolated despite spending a great deal of time in the hospital.
13
14
15

16 Patients also reported feeling safe at home.

17 *Inadequate Access to Care*

18
19
20 The most commonly cited problem inhibiting patients from accessing medical care was
21 an impaired ability to speak to their provider on the telephone. This was described as both
22 difficulty in reaching someone on the phone as well as long waiting times before receiving a call
23 back from a provider. As one patient noted, “I don’t call primary care because it takes too long to
24 get through to anybody until you get the call – I could have gone on a trip to Europe and back.”
25
26
27
28

29 Patients also noted that they had stopped even trying to call based on prior experiences:
30
31 “I try to call the Primary Care Center. But it’s like that one time that took 7 hours. I haven’t
32 called them [since]. So it’s like either I stick it out and let the pain or whatever subside, or I go
33 down to the ER. If I called them one time and it took them some hours to get back to me, I feel
34 that it’s useless if I call again.”
35
36
37
38

39 **Discussion**

40
41 In this study of underserved patients with a high frequency of hospital readmissions, we
42 found that there may be factors contributing to readmissions that are not addressed by most
43 current interventions, which typically target access to formal outpatient services [3 16 17].
44
45
46 Contrary to our expectations, patients from our sample did not have difficulty accessing
47 medications, home care, or transportation. Rather, the primary factors contributing to
48 readmissions that were consistently brought up by patients in our study were self triage to the ED
49
50
51
52
53
54
55
56
57
58
59
60

1
2
3
4
5
6
7
8
9 and a lack of primary care relationship.

10 While other studies have examined the challenges in transitions from inpatient care [8
11 18], we explored how patients interacted with the health system when they were home. We
12 found that patients delayed care and then made the decision to go to the ED without attempting
13 to contact their primary providers. Delays in care may have increased risk for readmission. This
14 delay of care likely resulted in a worsening of their health status which consequently precipitated
15 another hospital admission. The most consistent reasons for not reaching out to their primary
16 providers were inability to speak with a provider on the phone, the belief that their primary care
17 provider could not manage urgent issues, and patient perception that their primary care provider
18 could not address their concerns in a timely manner.
19
20
21
22
23
24
25
26
27

28 Our results differ from other qualitative studies evaluating readmissions. In a recent
29 article by Strunin et al (2007), patients expressed that they had inadequate medical care at home
30 and lacked transportation to appointments [3]. In contrast, we found that these needs were being
31 met for our high-risk patients. Similarly, a recent survey by Kangovi et al (2012) of patients that
32 had been readmitted found that lack of medication adherence after discharge was commonly
33 attributed to difficulty paying for medications and obtaining transportation [8]. In our sample of
34 patients, only one patient reported not being able to obtain medications due to cost. Although
35 other studies have included patients with one or more readmission within 30 days of discharge,
36 we utilized more stringent enrollment criteria, requiring patients to have had four or more
37 admissions in the prior six months. The high-risk underserved patients that we enrolled may have
38 had more interaction with the hospital system than other patients with fewer hospital admissions,
39 and therefore may have had more opportunity to be linked in with formal services such as
40 medication assistance, visiting nurse services, and transportation arranged through the hospital.
41
42
43
44
45
46
47
48
49
50
51
52

1
2
3
4
5
6
7
8
9 However, future studies will be needed to determine if there is indeed a direct association
10 between increased interaction with the hospital system and increased formal services compared
11 to other patient populations.

12
13
14 ~~The high-risk underserved patients that we enrolled likely had more interaction with the health~~
15 ~~system than other patients with fewer hospital admissions, and therefore may have had more~~
16 ~~opportunity to be linked in with formal services such as VNA and arranged transportation.~~

17
18
19 ~~Q~~ Thus our findings suggest that this population of patients needs more targeted
20
21 interventions to address the consistently stated problems of self triage and a lack of primary care
22 relationship. Another recent study by Kangovi et al (2013) described a social norm of high-risk
23 patients preferring the hospital for care when they have a change in their health status [19]. They
24 similarly conclude that targeted interventions should address the needs of high-risk patients in
25 the ambulatory setting.

26
27
28
29
30
31 First, ~~it is critical to have easy~~ improving telephone access to primary care offices is
32 important, as many primary care patients prefer this method of communication, and it this is the
33 preferred method of communication for patients and is linked to improved patient outcomes [20-
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
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

Formatted: Indent: First line: 0.5"

1
2
3
4
5
6
7
8
9 responses to urgent calls [25 26]. Future research regarding the best modes of communication
10 with providers will be an important area of inquiry moving forward.

11
12 Second, many patients in our study had stopped calling their primary care provider
13 because of their perceptions of the primary care clinic as incapable of handling acute medical
14 concerns. Patient experiences, such as being transferred from their primary care office to the ED,
15 shaped their perception of the primary care clinic. Once access to providers has been improved
16 and the lack of primary care relationship has been repaired, we would suggest educating patients
17 about the scope of their primary care clinics as urgent care centers, as well as the role of their
18 primary providers in their care when they have a change in their health status. In addition,
19 providers should discuss their role in helping patients make triage decisions when they get sick at
20 home.
21
22
23
24
25
26
27
28

29 Third, patients in our study described inadequate continuity with their providers. Patient-
30 provider continuity ~~is essential and~~ has been consistently associated with improved patient
31 outcomes and satisfaction [27 28]. To address the lack of primary care relationship that patients
32 described, there must first be a system in place that enables patients to have continuity with their
33 teams when they have a change in their health status [10]. This is especially difficult in clinics
34 staffed by residents who are present one half day per week, which is a common model for
35 internal medicine residency programs. When patients have urgent issues that arise, they are often
36 seen by providers who are not part of their primary care team. A strategy for improving upon this
37 situation would be to arrange residents into practice-partner teams where they would work
38 together to care for a larger panel of patients. While the patients would still need to become
39 familiar with a team of resident physicians, this has the potential to make patients feel more
40 comfortable seeking care for acute issues. This team-based care would also aid in the conversion
41
42
43
44
45
46
47
48
49
50
51
52

1
2
3
4
5
6
7
8
9 of primary care clinics to patient-centered medical homes, where continuity is an essential tenet.

10
11 Our study has several limitations. First, we focused on an underserved population; our
12 results may not apply to other populations. Second, our sample size is small, though we did
13 employ a comprehensive strategy to identify patients meeting our enrollment criteria during the
14 study period, and we did reach theoretical saturation as evidenced by no new themes being
15 introduced in the final interviews. Third, we conducted our study at a single site, and there may
16 be other factors more prevalent at other sites contributing to readmission.
17
18
19
20
21

22 In summary, we found that even though patients were receiving the formal services that
23 they needed, they were still being driven to make the decision to go to the ED based on based on
24 long phone wait times for primary care and their belief or experience that primary care cannot
25 treat their acute problems. We propose that educating patients about the capability and role of the
26 primary care provider while concurrently streamlining telephone access to providers could
27 enhance continuity and thereby prevent readmissions. Focusing entirely on arranging formal
28 transitional care services, such as transportation and medications, is unlikely to be adequate in
29 reducing readmissions.
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

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]].

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

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]].

1
2
3
4
5
6
7
8
9
10
11
12 **Appendix 1:** List of questions from interview instrument

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

14
15 Do you think there is anything else that could have been done to have prevented you from
16 coming back to hospital, and if so what?
17

18 When you have a change in your health at home, or start to feel sick at home, how do you make
19 the decision to try to reach your PMD versus going to the ED?
20

21 How often do you try to reach your PMD as opposed to going to the ED?
22

23 When you have a change in your health at home, or start to feel sick at home, how long have you
24 waited in the past before contacting your provider?
25

26 Can you tell me about the medications you take at home?
27

28 Has a financial barrier or problem ever resulted in you not being able to obtain the medications
29 that you need? If so, tell me about it. Has this been a common problem for you?
30

31 How do you manage your medications at home?
32

33 Do you have any difficulty with your medications?
34

35 Tell me what it's like at home for you?
36

37 Do you have people who can help you at home?
38

39 Do you feel safe at home?
40

41 How do you think of the social support you have at home?
42

43 What is your financial situation?
44

45 In what ways do you have difficulty getting to and from your primary care appointments, if at
46 all?
47

48 How do you get around?
49

50 In the last couple of weeks, have you been feeling depressed?
51

52 Have you ever been on any medications for depression?
53
54
55
56
57
58
59
60

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

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? <i>E.g. PhD, MD</i> 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? <i>e.g. personal goals, reasons for doing the research</i> 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? <i>e.g. Bias, assumptions, reasons and interests in the research topic</i> 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? <i>e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis</i> Grounded theory
Participant selection		
10.	Sampling	How were participants selected? <i>e.g. purposive, convenience, consecutive, snowball</i> Purposive
11.	Method of approach	How were participants approached? <i>e.g. face-to-face, telephone, mail, email</i> 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. <i>home, clinic, workplace</i> 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. <i>demographic data, date</i> 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 findings	
	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. <i>participant number</i> 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

For peer review only