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Cover Page Footnote

The authors would like to thank the host family medicine clinic, including the attending physicians, resident physicians, all staff, and, in particular, the patients who consented to being shadowed during this study. This article is associated with the Innovation & Technology lens of The Beryl Institute Experience Framework (<https://www.theberylinstitute.org/ExperienceFramework>). You can access other resources related to this lens including additional PXJ articles here: http://bit.ly/PX_InnovTech

The impact of patient shadowing on service design: Insights from a family medicine clinic

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Abstract

A central tenet of patient-centered care is to truly and deeply understand how patients experience health care. One particular qualitative method, patient shadowing, holds the promise of seeing things through the patient's eyes in real time. The purpose of this research is to utilize patient shadowing to capture the realities of patient experiences in an outpatient family medicine clinic and to report opportunities for improvement to clinic leadership. A total of twenty (20) patients were shadowed at a family medicine outpatient clinic over the course of eight (8) different days, providing a variety of circumstances including staffing levels, shift changes, patient volume, and other factors. Patient shadowing revealed many interesting observations, capturing many best practices in delivering patient experiences as well as a short list of recommendations that could improve patients' and staff experiences. Areas for improvement include helping patients better understand the entire process, wayfinding from the exam room to check-out, and creating a checklist for patient follow-up items. Patient shadowing presents many benefits to health care organizations and employees, including enhanced communication and teamwork, a greater connection with patient experiences and hardships, and the opportunity to redesign processes to optimize efficiency and service quality.

Keywords

Patient experience, patient shadowing, patient-centered care, qualitative research, ethnography

Introduction

A central tenet of patient-centered care is to truly and deeply understand how patients experience health care.^{1,2} Patients care deeply about their experiences in health care and their sense of well-being.³ Indeed, a definition of health care quality includes patient perspectives of their experiences and sense of well-being.^{4,5} Many methods, including both quantitative and qualitative techniques, exist to extract the truth of what patients truly experience.⁶ Qualitative methods of capturing patients' realities include patient shadowing, which holds the promise of seeing things through the patient's eyes in real time.⁷⁻⁹ This particular method aligns with The Institute for Healthcare Improvement's framework for observing patient care to learn through the patient's eyes.^{10,11}

Patient shadowing "involves committed, empathic observers who follow [patients and families] throughout specific care experiences."¹² It allows observers to collect "objective and subjective information: where the family members go; with whom they interact and for how long; and patients' and families' impressions, feelings, and reactions."^{13, p. 35} This method produces primary data that sheds light on patients' experiences in an effort to capture

the process that exists, in order to reimagine what could be.¹⁴ Patient shadowing can be an important aspect of quality improvement (QI) projects,¹⁵ as it supports Evidence-Based Design.^{16,17} Patient shadowing reveals "aha" moments of a patient's journey¹³ and provides insights into how service processes can be redesigned, reimaged, or improved in order to create enhanced patient experiences as well as organizational efficiency¹⁸ and treatment efficacy.¹⁹ This method is utilized to capture and share patients' voices regarding their journey with health care leaders to motivate and facilitate service design improvements:

"Before making changes in any care experience, it is critical that caregivers and working group members accurately understand, in detail, what patients and families currently experience; otherwise, even the best-intentioned attempts to improve the care experience will fall short of making meaningful and lasting transformational improvements."¹⁸

Patient shadowing has been advocated as an activity central to understanding and delivering patient-centered

care.^{13,20} However, few empirical studies have evaluated how it might be used in practice. Patient shadowing has been used in specialty health care contexts, including trauma, rheumatology, oncology, home healthcare, and as well as other non-health care contexts including human resources.^{18,21} One previous study conducted with surgical patients concluded that “patient shadowing can be performed on a large scale within health care with beneficial outcomes to patients, staff, and shadowers.”²² Another in total joint replacement found that communication with patients and families was primarily provider-focused.²³ A recent study demonstrated that shadowing patients at the end of their life provided a connection to the emotional states of patients and reminded health care staff to focus on what is important to patients and their families.²⁴ However, to our knowledge, no previous empirical study has utilized patient shadowing in an outpatient, primary care setting.

Patient shadowing differs significantly from shadowing clinicians, e.g.²⁵: Shadowing physicians by its very nature exposes the shadower to brief touchpoints between clinicians and patients, and thus restricts the researcher to see only cross-sectional views of what patients experience. Patient shadowing provides a longitudinal, ethnographic observation of what patients experience during multiple stages and touchpoints in a service encounter.¹⁸ As a result, shadowing patients can produce a different view of a health care experience than can shadowing clinicians.

Some may wonder if shadowing patients puts staff on their best behavior, thus obfuscating the insights that may be gleaned from such a project. While staff may behave differently in the presence of a shadower, they cannot quickly change the process that the patient experiences. That is, the shadower is not evaluating individual behaviors – that is far beyond the scope of the project and the expertise of the researcher. Rather, the shadower’s responsibility is to be a witness to the processes and touchpoints that comprise a patient’s journey, and to evaluate opportunities to improve the design of the clinic operations,²² aspects of a service that cannot be quickly altered or acted away.

The purpose of this research is to utilize patient shadowing to capture the realities of patient experiences in an outpatient family medicine clinic, and to report opportunities for improvement to clinic leadership. Metrics of success include whether or not shadowing provides a perspective of health care delivery that can produce meaningful recommendations to clinic leadership. As such, it is a quality improvement initiative designed to emanate from a patient-centered perspective, holding the promise to improve patients’ experiences, improve internal processes and efficiency, and to improve patient-provider relationships.²⁶ The aim of this research is to demonstrate its value in providing feedback on design possibilities to

improve patient-centered care in an outpatient clinic. In this research, patient shadowing was conducted to support research regarding how effective shadowing, an ethnographic method,²⁷ is in diagnosing issues with service design in an outpatient primary care setting.²⁸ Insights from patient shadowing were provided to family medicine leadership to improve existing practices in order to enhance patient experience and satisfaction.²⁹

Method

Study Sample

Patients were called by clinic physicians the day prior to their appointment to explain the research protocol and to obtain verbal consent. Shadowing dates and time frames were determined by clinic leadership and shadowers in advance of patient contact. Patients were then first selected by having an appointment within these windows. Second, patients were selected so that shadowing each patient would not overlap with subsequent patient shadowing appointments. Time between patient shadowing appointments was scheduled to ensure that no part of the patient journey would be missed by the shadower. Finally, patients were selected by clinicians to represent a variety of conditions, demographic characteristics, and insurance coverages. As a result, all patients were shadowed from the moment they entered the facility to the time they left, and the final sample of patients fairly represented the overall characteristics of patients treated at this outpatient primary care clinic.

Written consent was obtained prior to shadowing on the day of the patient appointment. Patients were shadowed during a total of eight (8) different days over the course of four months, providing a variety of circumstances including staffing levels, shift changes, patient volume, and other factors. A total of twenty (20) patients were shadowed, with an average age of 54.3 (range of 21 – 85 years). Just over half of the patients shadowed (60%) were female, and 75% were Caucasian. Patients were evenly distributed between being treated by attending physicians and resident physicians (see Table 1 for patient descriptions). Patients were informed that if, at any time, they were uncomfortable with having the researcher in the examination room, they could notify their clinician. This occurred a few times, and the researcher turned their back on the patient, faced the wall, listened carefully, and continued to take notes until the situation was resolved, consistent with IRB procedures and patients’ wishes. No patient complaints were reported to the researcher or to clinic leadership regarding the research protocol or process.

Data Collection

Patient shadowing was done exclusively by one researcher according to approved IRB protocols. Patients were shadowed from the time they entered the clinic building to

Table 1. Descriptive Statistics for Patients Shadowed at Family Medicine Clinic

Patient	Physician Type	Patient Age	Patient Gender	Ethnicity	Accompanied	Reason for Visit	Total Time for Appt.	Pre-Visit Interview	Post-Visit Interview
1	Attending	83	F	Caucasian	No	Osteoarthritis - Hip	0:41	9:37	12:32
2	Attending	21	F	Caucasian	No	Hematuria	1:06	4:58	9:00
3	Attending	27	F	Caucasian	With Partner	Generalized Anxiety	0:41	3:54	9:03
4	Attending	68	M	Caucasian	No	Routine Exam	1:02	3:49	11:53
5	Resident	66	M	Caucasian	No	Diabetes	0:31	5:02	11:39
6	Attending	58	F	Asian/Indian	No	Depression	0:48	3:54	9:47
7	Attending	60	F	Caucasian	No	Hypertension	0:38	3:12	7:11
8	Resident	57	F	Caucasian	No	Knee Pain	1:03	4:40	17:23
9	Resident	72	M	Caucasian	No	Medication Review	0:50	4:38	13:08
10	Resident	59	F	Asian	No	Knee Pain	0:45	3:26	11:28
11	Resident	60	M	Caucasian	No	Scleroderma	1:06	4:00	8:58
12	Resident	49	F	Middle Eastern	No	Cough	0:35	2:19	6:16
13	Resident	85	F	Asian	Husband	Cough	0:54	2:34	9:09
14	Attending	52	M	Caucasian	No	HBP	0:40	2:26	7:45
15	Resident	57	F	Caucasian	No	Fibromyalgia	0:51	4:35	11:57
16	Attending	33	M	Caucasian	No	Physical Exam	0:59	2:35	7:16
17	Attending	74	F	Caucasian	No	Physical Exam	0:57	2:23	6:03
18	Attending	56	M	Caucasian	No	Medication Review	0:49	2:32	7:39
19	Resident	23	F	Hispanic	With Partner	Pregnancy Check	0:55	2:42	6:16
20	Resident	26	M	Caucasian	Mother	Wart Follow-Up	0:35	3:04	8:51
	% Attending = 50	54.3	% Female = 60	% Caucasian = 75	80% Alone	Average	0:49	3:49	9:39

the time they departed. At a minimum, this included checking in, waiting, walking to the exam room, being a part of the clinical exam and discussion, exiting the exam area, and checking out. Additionally, some patients walked to the lower level of the same building to the testing center for various procedures (blood draw, X-ray, etc.). In cases when this occurred, the shadower stayed with the patient throughout their journey but did not witness the testing experience (remained in the waiting area), since it was not part of the protocol. The average time, from start to finish, of patient experiences was forty-nine (49) minutes (see Table 1).

Shadowing journals were used to record details of patient observations, touchpoints, conversations, and timing,^{23,30} generating over 82 pages of densely hand-written notes. These journals were created by the Patient and Family Centered Care Center at UPMC's Magee Bone and Joint Center and are available to the public for download or use through an app for the phone (<https://www.goshadow.org/resources>).⁸ See Appendix A for an example of the paper shadowing journal used in this research. The shadowing journals included structured pages with tables that prompt the shadower to record time stamps, people present, patient behaviors, provider behaviors, and topics of discussion. Notes included observations as well as verbatim comments made by both clinicians and patients. The shadower's job was to observe only and to avoid interfering with the process as much as possible. Thus, the shadower did not engage the patient in discussion but did respond to patient questions or requests.

Data Analysis

Analysis of the patient journey was done by iteratively studying patient shadowing journals to identify issues in a patient's journey that could be addressed by clinic leadership. This study's goal was not to assess the role of shadowing but to demonstrate that this method could unearth valuable insights into a patient's journey that can be improved in order to deliver higher levels of patient-centered care. After review of shadowing journals, a draft of recommendations was delivered to clinic leadership for review. Their comments and insights were incorporated into the final report, with no major alterations made to the list of recommendations. After delivery of the final report, the shadower was invited to attend a clinic meeting of Family Medicine and other primary care and specialist clinicians and staff who worked in the same building for the same organization. At this meeting, the results were shared, and feedback was obtained from a variety of attendees. Each recommendation engendered substantial discussion of how different areas of the clinic might implement them. This further strengthens the argument that patient shadowing can have a meaningful effect on discovering service design issues that might not otherwise be realized without taking a longitudinal, patient perspective of a health care service.

Findings

Patient shadowing revealed many interesting observations, capturing many best practices in delivering patient experiences. Additionally, insights from patient shadowing generated a short list of recommendations that could

improve patients' and staff experiences. These recommendations ranged from simple to more complex, yet all represent opportunities to help patients feel more welcome in a health care setting. Next, best practices and positive behaviors will be discussed, followed by a list of recommendations that were generated as a result of shadowing patients and seeing how an outpatient health care experience is viewed from a patient's perspective.

First, it is worth noting that the length of time that patients spent in the clinic was quite reasonable (range of 31 minutes to 66 minutes), indicating that the clinic operates efficiently. Patients spent little time in the waiting room prior to being called by the nursing assistant. This was true across various physicians, both attending and residents, and days of the week, indicating that scheduling processes and adherence were a priority across the clinic. This level of efficiency emanates from the culture of the organization, and undoubtedly is the result of demonstrating several best practices, discussed next.

Overall, the physicians, residents, nurses, staff, and all employees were extremely pleasant to patients, smiled frequently, and spoke to patients with a comforting voice. This may not seem like it is exceptional, but it is noticeable and important to patients. Physicians did a great job of dealing with the sometimes-conflicting demands of actively listening to patients and feeding the computer with data. The researcher observed an obvious effort among all physicians to apologize in advance for the time necessary to use a computer, to excuse themselves when using the computer, to look at the patient as frequently as possible when using the computer, and to sit at an angle so as to see the patient as often as possible. All these behaviors represent best practices³¹ and demonstrate a concerted effort among all involved to learn these behaviors and to utilize them as habit. This is evidence of efforts among mentoring physicians to impart skills necessary to build trust with patients.³² From the perspective of the shadower, patients responded positively to these efforts; they did not go unnoticed or unappreciated by patients and their caregivers.

Moreover, physicians manage their time and the expectations of their patients by asking about patient questions, issues, and complaints at the beginning of the consultation. Another best practice, this behavior ensures that patients feel heard and are truly heard, creates a list that is prioritized to facilitate proper use of valuable time, and avoids the dreaded "doorknob conversation" that can derail physician productivity, scheduling, and most importantly, patient engagement and activation.³³

Finally, staff work well together. The researcher witnessed everyone, from the front desk staff who greet patients and families when they first entered the facility, to the nurses and assistants who called patients to the back of the

facility, to the physicians and other providers who assessed, tested, and treated patients, communicated consistently regarding steps in the process a patient must take in order to receive care at family medicine. This is a capability that is not insignificant, in that these capabilities take time, a proper culture, great people, and patient-centered leadership to exist.^{34,35}

Although there were many best practices demonstrated, there were a few issues that were documented by shadowing patients. These issues emerged only because shadowing was done with patients, not clinicians, as these issues were found in "interstitial spaces" between steps in an overall service process. While some of the recommendations may not seem to address big issues, they can do much to further coordinate care for patients and their families, enhance compliance and adherence, decrease duplicative work, and enhance patient outcomes and well-being.

1. While welcoming the patient to the exam room, nurses and nursing assistants should provide a brief overview of the process that will take place.

Even repeat patients want to know the exact steps that will be followed for their appointment and how long it will take. While this may not seem to be a big deal to providers, it is very important to patients. When a patient is called from the waiting area to go back for their appointment, it would be appropriate to tell the patient something like, "First, I'm going to get your weight and temperature. Then I'll take you into your exam room where I will take your blood pressure, ask you a few questions, and prepare you for your doctor. After that..." This will properly orient the patient to the process and let him or her know what stage they are in at a given time, relieving anxiety or confusion.

2. When the patient is done in the clinical areas and ready to go check-out, provide the patient with directions to the front desk.

The researcher observed many patients, young and old, new and existing, who had to look around repeatedly or ask for directions to find the door to the front area after leaving the exam room. More than half the patients shadowed did not know how to navigate out of the back area to the door to the check-out desk. Some hesitated outside the room, looking from side to side; others simply asked how to get out. This was true even when patients had been seen at family medicine before, ostensibly because they do not have the same exam room each visit, they get turned around a bit by being weighed first, or some other reason. Again, while this may not be a big deal to providers, and perhaps not clinically related, it helps the patient feel more comfortable when in your facility and demonstrates a

small but memorable behavior of concern and care. Moreover, it would eliminate the gridlock in hallways, nurses' frustration when encountering patients in areas where they are not supposed to be, and the possibility that patients on their way out would observe situations that might be violations of other patients' privacy.

3. Consider developing and utilizing a reminder checklist for patients to take to check-out.

It appeared at this particular clinic that the responsibility for following up with the check-out staff is completely on the shoulders of the patient. This presents opportunities for patients to miss something important, such as a test or scheduling another appointment. Although physicians verbally created to-do lists with patients at the end of visits, this can often get lost in the time it takes for a patient to get from the examination room to the front desk. Most of the patients shadowed were alone; the patient is often solely responsible for remembering and acting on this unwritten list. When patients presented to the front desk after their physician consultation, they were asked what they needed to do. On many occasions patients did not fully recall all the decisions and tasks that were made with the physician. This presents an opportunity to manage this communicate gap in a more informed manner.

The relevance of this last recommendation to patient compliance, adherence, engagement, and health outcomes is very important. If a particular individual visit with a family medicine physician can be tied to community health, it is through impacting each patient in his or her journey toward health goals. This can only be accomplished by ensuring that follow-up appointments are made, lab tests are completed, referrals are scheduled, and prescriptions are understood and filled. A form is proposed (Appendix B) that spurred thinking among the family medicine physicians to hand to patients to take to the front desk to ensure that all decisions are enacted by the patient.

Overall, patient shadowing has effectively identified both best practices and opportunities for improvement. As a result, the key finding of this research is that patient shadowing can reveal issues from the patient's perspective that never could have been seen by a clinician or by shadowing a clinician. Thus, patient shadowing should be utilized as a method for evaluating how an outpatient clinic functions and to discover opportunities for improvement.

Discussion

The stated purposes of this research were to (1) utilize patient shadowing to capture the realities of patient

experiences in an outpatient family medicine clinic, and to (2) report opportunities for improvement to clinic leadership. We now report on the extent to which we respond to these aims. First, we observed and captured aspects of patients' lived experiences that could not be captured by shadowing clinicians. Thus, we deliver on the first aim. Second, we presented findings to clinic leadership that hold the potential to significantly alter patient experiences, service process design, and even patient compliance and outcomes. As a result, we have delivered on the second aim of this research.

Patient shadowing presents many benefits to health care organizations and employees. Patient shadowing "allows staff to challenge their assumptions about what they think is important to patients and families."¹² At its core, "shadowing is a distinctive teaching exercise"³⁶ that can be utilized at various levels of education.³⁷ As a result of patient shadowing, employees can view their job in a different way and see patients through more empathetic eyes.³⁰ Patient shadowing is not designed to catch people doing things wrong or right – that is the domain of clinical managers and preceptors. Rather, patient shadowing is a method that evaluates a specific process and its design in order to diagnose issues that are often only evident to patients, and matter to them – which cannot be accomplished by shadowing clinicians or staff.

While the findings from any given shadowing initiative may be specific, the method is robustly generalizable. Patient shadowing has been used in specialty health care, specifically in trauma, rheumatology, oncology, home healthcare, and as well as other contexts including human resources.¹⁸ However, this is the first study of which we are aware that empirically evaluates the ability of patient shadowing to diagnose issues in a primary care clinical setting. Empirical patient shadowing work in specialty care has found issues with communication, design, and emotional support, for example.¹⁹

The recommendations generated here may be specific to one particular clinic – one may anticipate different recommendations for different clinics and care practices. However, the fact that patient shadowing unveiled issues that were quite germane to clinic leadership demonstrates its utility for primary care outpatient clinics. That is, the value of patient shadowing is in its ability to detect issues that are particular to a specific care design and patient population. Thus, it is a methodology that is sensitive to changing processes and practices and can see experiences through the eyes of those who health care professionals serve. However, it may also be reasonable to assume that many of the issues identified at this Family Medicine clinic may be common to other similar practices, including Internal Medicine and other primary care settings, for example.^{38,39}

Patient shadowing may be an effective tool in recruiting and onboarding new employees, as it offers a realistic view of how patients are treated as well as the culture of an organization. Additionally, everyone in a health care organization should be afforded the opportunity to shadow patients on a regular basis, as a strategy to consistently view care from the patient perspective: “All disciplines and levels of staff are encouraged to participate in shadowing, and it is included in the preceptorship process, regardless of discipline. Many of the staff who have undertaken shadowing have said that it has given them valuable insight into the experience of being in the hospital and has helped them become more compassionate care givers.”¹²

Patient shadowing is an opportunity to be a “fly on the wall” during sacred moments of truth between caregivers and patients. Interactions with patients should not be underestimated or taken for granted; they are opportunities to transform the very trajectory of a person’s life, and to positively impact their health and well-being. It is humbling and inspiring to be present during patient consultations and to better understand what patients experience during their health care journey. Insights gained from patient shadowing can transform an organization into becoming more welcoming, more efficient, and more patient-centered.

Limitations and Future Research

One limitation of this research was that it was conducted in a single context, outpatient care at a family medicine clinic. However, shadowing has been demonstrated in a variety of clinical contexts, including total joint replacement,^{19,23} hand and wrist surgery,⁴⁰ preoperative processes,⁴¹ pediatric daycase surgery,²² emergency departments,⁴² trauma care,¹⁸ HIV/AIDS care,⁴³ and older adult hospitalization for diabetes.⁴⁴ Thus, this research expands the patient settings in which shadowing has been utilized, providing a greater degree of generalizability.

Another potential limitation is that both attending and resident physicians were included in the protocol. No perceptible differences were seen between patients treated by the two physician groups, reducing the probability that this is a limitation. Indeed, an effort is underway to expose medical students and residents to shadowing as a method to develop patient-centered care appreciation and empathy.^{37,45} In this research, resident physicians did not shadow patients but became aware of and developed some appreciation for this method.

Another issue with this study is a relative lack of disparity among patients. This issue restricts the insights that may be gained from displays of cultural sensitivity,⁴⁶ religious differences in patients’ experiences,⁴⁷ or preferences for patient-physician concordance/matching.^{48,49} Future

research on patient shadowing might evaluate how these issues affect patient-physician relationships and what issues in service design might be useful in creating a process that better fits a wide variety of patients.

Another potential issue is that the clinic where patients were shadowed provided high levels of service quality. However, this research demonstrates that even when patients are shadowed at clinics that are doing a good job, an ethnographic approach can still identify issues in patients’ journeys. That is, whether the service quality is high or low or somewhere in between, patient shadowing can provide insights into patients’ experiences which can produce meaningful quality improvement efforts. Thus, it is shown that shadowing reveals issues that exist anywhere along the patient experience continuum, particularly in between touchpoints in a health care experience. If patient shadowing can diagnose areas for improvement in a clinic that overall is performing well, it can certainly do so when significant elements of a service process are broken.

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Appendix A. PFCC Shadowing Journal



PFCC INNOVATION
CENTER =
PATIENT AND FAMILY CENTERED CARE

**For additional shadowing resources and more copies of this please visit www.pfcc.org/go-shadow/

Shadowing Information

Date of Shadowing: _____

Facility: _____ Department: _____

Care Experience to be Shadowed: _____

Begins: _____

Ends: _____

Prior Improvements/Projects to audit (if applicable):

_____ _____

_____ _____

Contact Person: _____

Phone Number: _____

Email: _____

Send Report to: _____

Report Deadline: _____

PATIENT'S STORY

Patient Alias:

Accompanied by:

Notable details or characteristics:

Interests or descriptive items:

HIPAA REMINDER!

Remember, you must adhere to the Health Insurance Portability and Accountability Act (HIPAA) privacy rules when documenting the Care Experience during Patient and Family Shadowing.

Time	Touch Point (Location)	Care Giver(s) (Role)	Observations	Anxiety
Example Start 6:13AM End 6:18AM	Same Day Surgery Check-in Desk	Registrar	Registrar smiled and greeted patient. Presented him with medical history form to complete and confirmed insurance. Did not introduce self.	Patient's name is misspelled on medical history form
Start End				
Start End				
Start End				
Start End				
Start End				
Start End				
Start End				
Start End				

Appendix B. Sample Checkout Checklist for Patients

Date: _____

Patient: _____

Physician: _____

Prescription(s) Sent to Pharmacy

Take Paper Prescription to Pharmacy

Referral to Specialist

Physician Name:

Schedule Tests:

Tests: Blood EKG
 X-Ray CT Scan

Schedule Follow-Up Appointment

When?