RESEARCH REPORT



Role definition is key—Rapid qualitative ethnography findings from a team-based primary care transformation

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Abstract

Purpose: Implementing team-based care into existing primary care is challenging; understanding facilitators and barriers to implementation is critical. We assessed adoption and acceptability of new roles in the first 6 months of launching a team-based care model focused on preventive care, population health, and psychosocial support.

Methods: We conducted qualitative rapid ethnography at a community-based test clinic, including 74 hours of observations and 28 semi-structured interviews. We identified implementation themes related to team-based care and specifically the integration of three roles purposively designed to enhance coordination for better patient outcomes, including preventive screening and mental health: (1) medical assistants as care coordinators; (2) extended care team specialists, including clinical pharmacist and behavioral health professional; and (3) advanced practice providers (APPs)—ie, nurse practitioners and physician assistants.

Results: All stakeholders (ie, patients, providers, and staff) reported positive perceptions of care coordinators and extended care specialists; these roles were well defined and quickly implemented. Care coordinators effectively managed care between visits and established strong patient relationships. Specialist colocation facilitated patient access and well-supported diabetes services and mental health care. We also observed unanticipated value: Care coordinators relayed encounter-relevant chart information to providers while scribing; extended care specialists supported informal continuing medical education. In contrast, we observed uncertain definition and expectations of the APP role across stakeholders; accordingly, adoption and acceptability of the role varied.

Conclusions: Practice redesign can redistribute responsibility and patient connection throughout a team but should emphasize well-defined roles. Ethnography, conducted early in implementation with multistakeholder perspectives, can provide rapid and actionable insights about where roles may need refinement or redefinition to support ultimate physical and mental health outcomes for patients.

KEYWORDS

practice redesign, role definition, team-based care

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1 | INTRODUCTION

Primary care redesign efforts in the United States (US) began in earnest in 2002¹ and have ranged from smaller-scale home visit models and concierge-inspired "direct primary care" to the U.S. Patient Centered Medical Home (PCMH) movement, which emphasizes a personal physician, care coordination, quality, safety, and access. ^{3,4} Building on PCMH principles, a new primary care model—Primary Care 2.0—is a team-based model supporting population health, preventive care (screening), and mental health for all patients. From a process standpoint, Primary Care 2.0 additionally emphasizes (1) distributed and team-based care through top-of-license/scope of work practice for all, including staff and providers, and (2) primary care colocation/collaboration with select secondary (specialty) care providers who may comanage complex patients.

There are many challenges in implementing team-based care models into clinics³; understanding facilitators and barriers to successful implementation is critical for long-term sustainability and spread, and these factors are not well understood. To date, research on PCMH practice transformation has focused on traditional clinical outcomes such as the Triple Aim,⁵ but there is little or no explanation when a PCMH implementation fails to produce anticipated results.⁶ In this vacuum, scholars have called for hybrid implementation studies that incorporate implementation science outcomes such as feasibility, adoption, and sustainability into traditional evaluation outcomes. Implementation science studies are needed to bridge the gap between initial implementation and long-term sustainability, including definition of best practices for PCMH implementation and the ultimate spread of new care models into clinical practice.⁷

One implementation study found that changes in individual and team roles, and the accompanying changes in workflow, were among the biggest PCMH implementation challenges.³ Based on this insight, we hypothesized that the degree of clarity in new/modified roles would impact adoption and acceptability in successful implementation of new team-based care models. We expected that role definition would be demonstrated as a key part of the expectation-setting needed to quickly move a practice from traditional primary care through transformation to team-based medicine.³ With this in mind, we examined the implementation of a modified PCMH design that included both novel and less novel roles. Specifically, we assessed the adoption and acceptability of newly introduced care team roles in the first 6 months of a team-based care model implementation, additionally tracking any role adaptations as they emerged.

2 | METHODS

2.1 | The Primary Care 2.0 model

Stanford's primary care redesign, Primary Care 2.0, represents 1.5 years of intentional multistakeholder design, detailed in Brown-Johnson et al.⁸ Final model design components included a mixture of role-based elements (1-3) and systems elements (4-7) intended to support population health, preventive care, and mental health goals for patients:

- Pairings of physicians (MDs) and nurse practitioner/physician assistant "Advance Practice Providers" (APP), providing teambased care, with support from medical assistant "care coordinators";
- "Care coordinator" role of medical assistants working in an expanded capacity including in-exam scribing for team-based documentation and between-visit care coordination;
- 3. "Extended care team" dedicated onsite specialists: clinical pharmacist, nutritionist, physical therapy, behavioral health;
- 4. Protected provider time for care coordination;
- 5. Telehealth;
- 6. Health coaching: and
- 7. Learning health care system structures, (ie, continuous quality improvement, daily "huddles," case conferences).

2.2 | Context

The Primary Care 2.0 model was piloted in a community-based Stanford-affiliated primary care/family medicine clinic beginning in June 2016.

2.3 | Data collection

We used qualitative rapid ethnography methods that have been successfully applied to health care to characterize multistakeholder perspectives, particularly physician, staff, and patient roles. The aim of ethnography in health care evaluation setting is "to provide rich, holistic insights into people's views and actions. Rapid ethnography efficiently leverages multiple related data collection methods (eg, clinic and patient visit observations, semi-structured interviews) while retaining a human-centered focus. 1

We structured our rapid ethnography around purposefully sampled patient visits, using observation and semi-structured interview techniques previously tailored for exam room settings. 12 The observation packet included protocols for approaching patients, semi-structured interview questions for post-visit debriefs, and reference material such as elements of the Primary Care 2.0 model. Observations and interviews were conducted during multiday site visits in August/September and December 2016. Visits were intentionally scheduled to align with expected phases of stable implementation (3-month postlaunch) and early sustainability (6-month postlaunch). This schedule allowed for exploration of consistency over time with respect to roles and implementation science outcomes, specifically adoption and acceptability.

We applied purposive sampling in selecting patient visits, ensuring diversity of gender, care complexity, provider type (MD vs APP), and visit type (new vs return) in order to get varied stakeholder perspectives. We also targeted family medicine providers to ensure representation of pediatric patients and families. Observations included as much of the patient experience as possible: from the waiting room

to the exam rooms, through checkout and to the exit/parking lot. For patient visit observations, patients were approached by evaluation staff in the clinic waiting room and invited to participate in this quality improvement evaluation of Primary Care 2.0. Only one potential participant declined to participate.

Observations were intentionally unstructured. As in exam room observations of Saleem et al,¹² informal patient interviews occurred when the care coordinator and provider left and focused on perceptions of care, the context of the patient's health history, and prior health care experience. After-visit semi-structured debriefing interviews with patients, providers, and care coordinators compared Primary Care 2.0 with each stakeholder's prior experience in traditional models of primary care. We focused on stakeholder acceptance of three new roles designed to enhance patient access, care coordination, and job satisfaction: the care coordinator role, the extended care team specialists, and the APP role.

Within 24 hours, clinic observers dictated notes which were subsequently transcribed, for a total of one research memo per patient (n = 21) and one overall research memo for each day at the clinic (n = 6). Identifying information was purged before analysis.

2.4 | Data analysis

Research memos were analyzed by a PhD-trained qualitative expert and an MPH-trained evaluation associate. Subject matter expertise was also obtained from a family medicine physician external to the clinic, to ensure appropriate interpretation. Coders read memos and notes at least three times each, noting themes, identifying exemplar quotes/situations, and independently coding for relevance to role definition and stakeholder experience. Special attention was paid to implementation science outcomes of acceptability (eg, satisfaction with the role) and adoption (eg, role uptake and implementation).¹³ The evaluation team reviewed analysis and came to consensus on coding disparities with input from the subject matter expert.

This project received a nonresearch determination by the Institutional Review Board of Stanford School of Medicine since its primary goal was quality improvement.

3 | RESULTS

3.1 | Observation and participants

During 74 hours of clinic observation, we observed numerous aspects of the clinic, including morning team huddles; staff/physician meetings; waiting room flow and volume; patient visits (rooming, patient history, blood draws, vaccines, clothed exams, medical assistant implementation of standardized assessments for patient activation and depression); provider/staff team-room flow and collaboration; and break-room utilization.

Twenty-one patients seeing seven providers (four MDs and three APPs) agreed to have their visits observed. Table 1 provides an overview of each anonymized visit including type of visit, care

team, and diagnosis. Fourteen patients (67%) were female. Patient race/ethnicity was diverse: Asian/Asian-American (n=7); White non-Latino (n=6); Southeast Asian (n=5); Latino (n=3). New patient visits were overrepresented (n=11). Three visits were pediatric. Presenting diagnoses ranged from acute issues (eg, sports-related injury) to chronic conditions, including diabetes, Parkinson's disease and rheumatoid arthritis.

3.2 | Multistakeholder perspectives on role-based elements

3.2.1 | The care coordinator role

Patients noticed the team-based practice model, reporting positive and cohesive care experiences, often centered around the care coordinator, a role which was reported to be highly acceptable and positively endorsed by members of all other stakeholder groups. Care coordinators created a caring and attentive environment for patients, advising new patients that they would be assisting with care and could be reached directly. For example, when asked about whether the doctor and team was more or less caring than other doctor visits, Patient 4 mentioned that the visit was more caring, especially "the new care coordination." This same patient seemed highly comfortable with care from his care coordinator, even waiving off a question from the provider by explaining "Oh, she [the care coordinator] answered that question for me."

Care coordinators also supported patient-provider connection by scribing during the visit, allowing providers to devote full attention to patients. Some care coordinators recognized that their expanded responsibilities (eg, managing provider in-baskets, preparing and pending patient orders) empowered them to directly contribute to better patient care. One care coordinator expressed delight that the role facilitated "... focus on the [patient] instead of the [work]."

In addition to the well-defined aspects of the care coordinator role (ie, rooming, scribing, after-visit summation, in-basket management), some care coordinators spontaneously provided value by using in-exam computers to look up information relevant to patient care. Care coordinators for Patients 4 and 5 inserted themselves into patient-provider conversations with information about (a) other patient appointments, (b) information shared in the care coordinatorpatient conversation, (c) details about requests from patients (referral requests) that had not surfaced during the provider-patient interaction, and (d) potential issues with prescriptions. While no single element of such care coordination is itself novel, introducing them directly in the midst of the visit represented a novel adaptation of this hybrid role that includes in-exam scribing and care coordination. Care coordinators' in-exam exchange of additional information and patient requests, while not explicitly described in the original care coordinator role description, was reported by providers as acceptable. It was perceived as specifically valuable with respect to timely information exchange and supporting efficiency by reducing the need for providers to clarify notes to care coordinators outside of the visit (Table 2).

Demographics and characteristics of observed patient visits in Primary Care 2.0 ordered by visit type and morbidity^a TABLE 1

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	Patient and Visit Information	Information		Model Componer	Model Components Present in the Visit	
Patient/encounter ID	Visit Type	Multimorbidity? (>1 Active Chronic Condition)	Presenting Diagnoses	Care Team Provider	Same Care Coordinator Throughout?	Extended Care Accessed?
August/September 2016						
1	New	`	Headaches, GERD	APP		
2	New	`	Pulmonary fibrosis	APP	`>	
೮	New		Irritable bowel	APP	`>	
4	Follow-up	`	Rheumatoid arthritis, osteoporosis	MD	`>	`
5	Follow-up	`	Leukemia, weight loss	APP	>	
9	Follow-up	`	Crohn's disease, type 2 diabetes	APP	`>	`>
7	Follow-up	`	Bariatric surgery, physical	MD	`>	
80	Follow-up		Well-check	MD	`>	
6	Acute		Dry tongue	MD	`>	
10	Acute		Running injury	MD	`>	>
11	Acute		Fall injury	MD		
December 2016						
12	New	,	Ovarian concerns, hypertension, hypothyroid	MD		>
13	New	`	Joint surgery, depression, eczema	MD	`>	>
14	New		Hypertension, infertility	APP		>
15	New	`	Type 1 diabetes, hypertension	MD	`>	>
16	New		Vertigo, trauma	APP	>	>
17	New		Well-check	MD	>	
18	New		Well-check	APP	>	
19	New		Physical	APP	`>	
20	Follow-up	`	Parkinson's, blood clots, back pain	МБ	<i>></i>	
21	Acute		Viral "cold"	АРР	<i>></i>	

Abbreviations: APP, Advanced Practice Provider; GERD, gastroesophageal reflux disease; MD, physician.

^aAdvance Practice Providers (APPs) are providers at the nurse practitioner or physician assistant level. Patients can be assigned MDs or APPs as their primary care provider. Care coordinators are medical assistants who receive extra training and perform additional duties, such as in-exam scribing for team-based documentation. The Primary Care 2.0 model specifies that the same Care coordinator room the patient, scribe during the visit, and follow-up with patient discharge.

Despite generally positive perspectives, some comments and observations suggested that the care coordinator role was not yet fully implemented or adopted in the clinic. For example, constraints on staffing and scheduling meant four of 21 visits lacked scribing. Also, although providers generally appreciated the care coordinators' contribution to team-based documentation, two providers expressed some discomfort in not having direct computer access during the visit. In her brief after-visit interview, the MD provider for Patient 4 mentioned that she felt this patient had *less* information support as a result of scribing, compared with if she, the MD, had access to the computer herself.

Observations identified further training needs for care coordinators, specifically with respect to providing appropriate language support for patients not fluent in English. In a worst case scenario, one care coordinator never directly addressed the patient, instead only addressing his English-speaking family.

3.2.2 | Extended care specialists

Eight of 21 patient visits included extended care specialists in some form, indicating good adoption of specialists into integrated team-

based care. Two patients demonstrated highly positive health outcomes that their primary care providers attributed to their extended care specialists. For example, multiple telephone visits between the pharmacist and one patient with diabetes mellitus preceded successful blood glucose control, and her provider credited this with "keeping this patient out of the hospital."

Onsite colocation was reported to be an important success factor by both specialists and primary providers, who shared the perception that colocation facilitated access. Providers also noted that they learned from the expert advice available on demand from the clinical pharmacist and behavioral health specialist and that this was an unexpected benefit of the colocated specialists.

3.2.3 | MD/APP pairings for team-based care

Providers reported feeling more supported with team care and appreciated improved patient access, in particular through increased capacity for urgent patient visits accommodated by team providers, either APP or MD. MDs in this system had generally not previously worked with APPs in primary care, and in this context APPs reported wanting

TABLE 2 Multistakeholder perspectives of Primary Care 2.0 key components: Observation and debriefing interview results from patients, providers, and medical assistant "care coordinators"

providers, and medical assistant. Care coordinators							
Primary Care 2.0 Role	Clinic Visit Ethnographic Observations	Patient Perspective	Provider Perspective	Care Coordinator Perspective			
Providers: MDs paired with an APP (ie, nurse practitioner or physician assistant) and supported by four care coordinators per team	Some teams consult jointly (both provider and care coordinator) with patients during the visit ^a	Cohesive care experience for complex patients ^a	Team and APP create access for patients ^a Providers have more support ^a	Care coordinators think teamwork is better with Primary Care 2.0, because "you are there the whole time." ^a			
	Some patients and staff resist APPs ^b	Patients see care coordinators as part of care team ^a	Some providers may resist team-based care, not wanting to manage "someone else's patient" chronic disease care ^b				
	Visit preplanning is adapted to include EMR "care coordination note" for team review of patients ^c	Patients see providers as more attentive with care coordinator team- based documentation ^a					
Care coordinator: Medical assistants coordinate between-visit care through MyHealth and phone messages, and perform scribing during patient visits to support team-based documentation	Care coordinators provide value-add by looking up information relevant to patient care ^a	Care perceived as more caring, especially with "the new care coordination" ^a	Some providers uncomfortable with lack of computer access during exams ^b	Better patient rapport for care coordinators ^a Empowerment for care coordinators ^a			
	Care coordinators expand language options for team (Spanish) ^a Additional care coordinator training needed ^b	Some patients resist care coordinators: "What are your credentials?" ^b	MDs concerned that difficult conversations (addiction) could be more difficult with care coordinators in the room ^b				
Onsite extended care specialists: Physical therapy, clinical pharmacist with diabetes focus, dietitian, behavioral health, nurse manager/triage	Onsite specialist referrals to physical therapy delayed or denied ^b	Convenient access to specialists onsite ^a	Pharmacist helps manage patients' diabetes ^a				

Abbreviations: APP, Advanced Practice Provider; EMR, electronic medical record; MD, physician; Pt, patient.

^aObservations and multistakeholder perspectives on the listed Primary Care 2.0 component that supported the importance of that component (row) and/or had a positive effect on that stakeholder (column).

^bObservations and multistakeholder perspectives on the listed Primary Care 2.0 component that provided evidence that that component (row) was not important and/or had a negative effect on that stakeholder (column).

^cPerceived as a change in practice compared to traditional primary care.

"to see the APP role developed ... how it differs from a physician." MDs and APPs may have perceived differences in the scope of their roles, but functionally their role as provider was not differentiated, as one MD noted: "[we are] functioning in the same capacity essentially."

Patients had varying reactions to APPs as MD substitutes, demonstrating uneven acceptability of the role for patients. Three of 10 patients with APP visits expressed resistance; all three reported having had strong previous attachments to MDs. In contrast, other patients were complimentary of APPs and explicitly expressed trust.

Regardless of uneven patient acceptance of APPs, the role's adoption in the team-based model system was strong at this early stage of implementation: Almost half of our observed visits were with APPs. Furthermore, APP adoption enabled improved patient access as intended in the model, for example, when an APP provided a sameday urgent-care visit for the patient of an unavailable MD provider.

4 | DISCUSSION

This rapid ethnography expands the literature on prevention-focused practice transformation as one of the first studies to document perceptions of team-based care roles implemented in a modified PCMH model, Primary Care 2.0. Our qualitative results show that where roles were clearly defined (care coordinator and extended care specialists), they served to quickly set expectations and allow transformative culture-shifting implementation with minimal training. In contrast to the positive acceptance of the novel and clearly defined medical assistant care coordinator, the less novel but less clearly defined APP role engendered resistance and uneven acceptance in a physician-led primary care practice.

Successful roles in this team-based model enhanced patient contact with the clinic and notably created unanticipated value, with productive and spontaneous role adaptations as early as 3 months post-implementation. Indeed, a high functioning team with empowered medical assistants has been hypothesized to be central to successful redesign.¹⁴ To wit, we observed that care coordinators practiced to the top of their scope of work, notably by documenting during the visit (scribing), establishing trusting relationships with patients, and even providing unanticipated value by reinforcing patient desires or sharing information from online databases that were relevant to ongoing patient-provider conversation. This care coordinator role is aligned with new medical assistant roles across the US that emphasize leadership, patient ambassadorship, team-based documentation, and care coordination¹⁵; the role also speaks to international calls for investigations of workforce skill-mix.¹⁶ Notably, this role was successful despite observed gaps in training/competence (eg, with non-English-speaking patients).

By contrast, the APP role was not consistently accepted by stake-holders. Our observations suggest this was possibly a result of unclear role definition; even in internal implementation documents, the APP role was defined as "to be determined," because stakeholders could not come to consensus on the functions of the APP role within this

model. This lack of role definition may be a wider spread problem for APPs in traditionally physician-led settings; other qualitative studies have documented role clarity as a barrier to successful integration of APPs across medical contexts. ¹⁷ Future planned evaluation of this model includes a focused assessment of the APP role.

Beyond the particular findings, we believe our study demonstrates how an embedded ethnographic approach, conducted early in implementation and with multistakeholder perspectives, can provide rapid and actionable insights and be a key part of evaluating implementation. Team-based care is arguably the future of primary care¹⁸ and a cornerstone of preventive care for patients. As a complex system, it deserves an evaluation approach that is flexible and nuanced and targets the right outcomes at the right time (eg. acceptability and adoption as outcomes in early implementation phase).7 Embedded rapid ethnography addresses growing awareness and movement towards including patient-centered perspective in evaluation (eg, Patient-Centered Outcomes Research Initiative). In this implementation science quality improvement study, focused primarily on the occasion of the patient visit, we were able to use ethnography to gather rich descriptions of a complex team-based model. We contend that such rapid ethnography, centered around the patient experience, represents a powerful tool that can underpin state-of-the-art evaluations and contribute to successful evaluation and implementation of practice redesign.

There are two main limitations for this project: Observations were conducted in a single clinic context, and observations were not independently audio or video recorded. To address the first limitation, we observed at two time points and found that observations were consistent, despite changes in clinic staff. To address the second limitation, we used best-practice ethnographic approaches that emphasize documenting observations as soon as possible (within a half day) to allow for unfiltered and therefore less biased recording of observations.

Primary care redesign has been increasingly evaluated ¹⁹ but has yet to be thoroughly explored from an implementation science perspective. This study takes a novel implementation science perspective and in so doing highlights a key lesson: Practice redesign can redistribute responsibility and patient connection throughout a team, but success of a team-based model might depend on clear role definition. Ethnography, conducted early in implementation and with multistakeholder perspectives, can provide rapid and actionable insights to identify where roles may need refinement or re-definition.

PRIOR PRESENTATIONS

Posters outlining this qualitative rapid ethnography method have been presented at the 2017 Society for General Internal Medicine and 2017 AcademyHealth Annual Conferences.

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CONFLICTS OF INTEREST

Authors have no other conflicts of interest to declare.

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