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Redesigning primary care in the safety net: A qualitative analysis of team-based care implementation

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ABSTRACT

Background: Team-based care is an innovative approach to primary care in which groups of health care professionals work collaboratively to manage care for groups of patients. Safety-net organizations face specific barriers to implementing health care innovations. More research is needed that documents the dynamics that inform implementation and sustainment of innovative practices in the safety net.
Methods: We conducted qualitative fieldwork, including purposeful observation and semi-structured and informal interviews, to explore the implementation of care teams in safety-net clinics in California. Field notes and transcripts were analyzed using an inductive approach to identify overarching themes across sites.
Results: Salient themes across clinics suggest that 1) well-designed physical layouts that promote sustained patterns of structured and spontaneous communication and collaboration are critical to creating high-functioning teams; 2) implementation of team-based care relies on a relaxing of the traditional clinic hierarchy into an agile organizational structure that empowers all clinic staff—most notably medical assistants—by facilitating an ethos of collaborative decision-making, interdependence, and shared responsibility; and 3) resource constraints related to recruitment and retention of qualified staff are key barriers to implementation.
Conclusions: Team-based care has the potential to improve patient outcomes, strengthen relationships and well-being among clinic staff, and expand staff roles to facilitate collective accomplishment of work goals. To successfully launch and sustain care teams in safety-net clinics, greater commitments to creating well-designed spaces and a re-envisioning of the training and compensation for medical assistants that reflects the valuable role these individuals can play appear to be necessary.

1. Introduction

Several key challenges limit the ability of primary care clinics to deliver cost-effective, accessible, patient-centered care. These include a significant shortage of practitioners and a delivery-of-care paradigm in which responsibility for patient care falls primarily to overburdened physicians.[1] Team-based care, a core component of the patient-centered medical home (PCMH) initiative,[2] redirects the traditional primary care delivery model towards a new emphasis on groups of healthcare professionals working collaboratively and sharing responsibility to manage care for patients.[3] By facilitating task sharing among groups of healthcare workers, team-based care has been found to result in expanded access to care,[4] more effective and efficient delivery of services, including chronic disease care,[5] increased job satisfaction, well-being, and lower burnout among clinic staff,[6,7] and an organizational environment that encourages clinic staff to perform work that better aligns with their unique training, abilities, and skills.[8]

Safety-net organizations that care for vulnerable, high-need patient populations face specific barriers to implementing innovative healthcare practices like team-based care. Safety-net health systems are often tight on staff, time, space, and capital, and frequently lack sufficient resources to successfully implement and sustain innovations.[9] Despite a growing literature that broadly documents challenges and facilitators to innovation in the safety net, we know little about the specific dynamics of implementation processes on the ground.[9]

In an effort to fill this critical knowledge gap in the literature on innovation in the safety net and to contribute to the literature on the implementation of high-performing primary care, we examined the implementation of team-based care in diverse safety-net clinic settings. Previous research exploring the implementation of PCMHs in the safety net has found that practice transformation relies broadly on engaged leadership, a willingness to change, exposure to new ideas to base change on, infrastructure and culture that facilitates the execution of system changes, and multimodal technical assistance.[10,11] Our study deepens and enriches this understanding of team-based care implementation using a rapid ethnographic approach that reveals detailed, on-the-ground

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Table 1
Clinic characteristics.

Clinic	*Clinic type*	*Location*	*Number of patients*	*Patient population*	*Patient-clinician ratio*	*Team-based care model duration*	*Care team structure*
1	FQHC	Northern California; Rural	13,614	45% Medicaid; 7% NES	850:1	8 years	3 clinicians; 3 MAs; 1 RN; 1 BHS; 1 team coordinator; 1 clerical support
2	FQHC	Northern California; Rural	31,579	49% Medicaid; 36% NES	718:1	6 years	3–4 clinicians; 3–4 MAs; 2 RNs; 1 float MA; 1 flow coordinator MA; 1 referrals coordinator; 1 HIT coordinator
3	Clinic within a public healthcare delivery system	Northern California; Urban	3,562	55% Medicaid; 25% NES	396:1	5 years	4 clinicians; 4 MAs; 1 RN; 1 BHS; 1 billing specialist; 1 pharmacist
4	FQHC	Southern California; Urban	8,360	75% Medicaid; 58% NES	2,500:1	< 1 year	1 clinician; 1 main MA; 1 back-up MA; 1 LPN; 1 RN; 1 main registration clerk; 1 back-up registration clerk; 1 referrals clerk; 1 back-up referrals clerk; 1 lab specialist

Abbreviations: FQHC (federally qualified health center); NES (non-English speaking); MA (medical assistant); RN (nurse); BHS (behavioral health specialist); HIT (health information technology); LPN (licensed practical nurse).

insights from safety-net settings.

2. Methods

2.1. Research setting

We used a purposive sampling approach to identify a diverse sample of safety-net clinics in California based on variation along several key dimensions, including size, the duration of the team-based care model, geographic location, and patient population demographics. We used the Institute of Medicine's (IOM) definition of safety-net clinics as providers that serve primarily uninsured, Medicaid, and other vulnerable patients. These include clinics based within public healthcare delivery systems and Federally Qualified Health Centers (FHQCs).[12] Following previous qualitative research in the safety net in which thematic saturation was reached after a relatively small number of sites,[13] we approached six safety-net clinics to participate in the study. We reached thematic saturation after site visits to four clinics. Table 1 summarizes key characteristics of the sample of clinics, including the general care team structure at each site.

2.2. Rapid ethnography

Ethnography is a useful methodology for studying the nuances of the organization and delivery of primary care.[14–17] Combining purposeful observation with interviews, an ethnographic approach yields in-depth insights, or "thick description,"[18] that capture tacit knowledge and how people and their surroundings interact, often subconsciously. It is a more effective approach than interviews alone for examining collaborative work environments, in which people may act differently than how they describe themselves and their actions at work. While a traditional ethnographic approach entails prolonged periods of fieldwork, "rapid ethnography" emphasizes a shorter duration of fieldwork and quick turnaround of results in an effort to provide useful information to key stakeholders in a timely manner.[19,20] Rapid ethnography entails more focused observation, targeted selection of informants, and is typically conducted by multi-person, transdisciplinary research teams.[20]

We used a rapid ethnographic approach, including purposeful observation and semi-structured and informal interviews, to gather qualitatively rich insights into the implementation of care teams in safety-net clinics. Our interdisciplinary research team, led by a medical anthropologist with extensive experience conducting ethnographic research in a variety of settings, also included two primary care physicians, a health services researcher, and several research assistants. A minimum of three members of the research team conducted day-long site visits at each clinic. During the site visits, investigators independently conducted observations of routine clinic processes and patient appointments by shadowing clinicians, medical assistants (MAs), and administrative staff. Investigators initiated informal conversations with clinic staff and patients during the observational period and also conducted a semi-structured group interview with key clinic staff over lunch at each clinic.

The research team developed standardized data collection tools for use at each clinic site, including semi-structured templates to guide the collection of handwritten field notes and a semi-structured discussion guide for the group interviews (Appendix). Interview questions and informal conversations focused on the history of and motivation for implementing team-based care in the clinic, as well as the challenges and facilitators to implementing and sustaining the care team model. Study investigators recorded field notes and also used an audio recorder when appropriate. All handwritten notes and audio recordings were later transcribed into electronic format for analysis.

The study was exempted from review by the Institutional Review Board at the University of California, San Francisco.

Table 2
Key findings by clinic.

Clinic	*Physical space*	*Organizational structure and empowerment*	*Staffing*
1	Newly constructed facility (2013) Color-coded "pods" with spacious shared workspaces promote a collaborative work environment	All clinic staff are empowered to make autonomous decisions, regardless of their position in the traditional clinic hierarchy Medical assistants are empowered to play a key role in each pod by facilitating efficient workflows	High staff turnover, a small qualified applicant pool, and insufficient training for work on care teams are key challenges
2	Newly constructed facility (2011) Large rooms with side-by-side workstations serve as a "home base" throughout the day and promote a collaborative work environment	All team members share responsibilities by taking on tasks that are sometimes outside the scope of their own work Medical assistants have a pulse on their team's progress, delegate tasks, and make workflow decisions to ensure timely and comprehensive completion of patient visits	Part-time nature of medical assistant position is a key challenge
3	Dated building (1960s) with crowded and cramped layout hinders efficient workflows Small huddle room with limited workstations discourages spontaneous communication and collaboration	Responsibility for patient care is equally distributed among clinic staff and some work is interchangeable such that there is substantial role fluidity among staff Medical assistants are empowered to take on significant responsibility for patient care; they also anticipate and facilitate clinic workflow Patients trust the medical assistants	Clinic is consistently short-staffed because of the bureaucratic hurdles it takes to hire new staff
4	Newly constructed facility (2015) Clinic space is centered around a large shared workspace where staff frequently interact and collaborate	Clinic staff share responsibilities, understand each other's roles, and are motivated to assist one another in the completion of tasks Medical assistants are empowered to work autonomously at the top of their license and take on substantial ownership of the patient experience	Difficulty recruiting and retaining staff who can acclimate to the care team structure and to clinicians' specific preferences is a key challenge

2.3. Analytic strategy

Analysis explored the dynamics of implementing care teams in the safety net, with a focus on the challenges and facilitators to implementation and sustainment. Using the constant comparison method,[21] members of the research team independently conducted inductive, unstructured coding of the field notes to identify recurrent themes within and across the sites. Iterative discussions among the study investigators resolved coding differences, refined thematic categories, and led to a set of major themes identified across all four sites.

3. Results

Key findings by clinic are detailed in Table 2. At the time of the site visits, each clinic had implemented the team-based care model for varying lengths of time, with Clinic 4 rolling out the model most recently (< 1 year), and Clinic 1 having the longest experience with care teams (8 years). Across all the clinics, the motivation for implementing care teams generally stemmed from a desire to provide more consistent, comprehensive care to patients to improve the patient experience. For example, staff at Clinic 2 explained that the old care delivery model felt fragmented and patients' needs were not being met. Transitioning to team-based care allowed the clinic to become "in tune with what real healthcare needs are." Clinic leaders were typically responsible for introducing the team-based model across the sites. At Clinics 1 and 3, for instance, the medical directors were the key drivers of implementation, while at Clinic 4, a high-level administrator introduced the idea of team-based care to the clinic after she was externally exposed to the core tenets of the PCMH model of care. Care team structures, moreover, were comparable across all clinic sites and included a combination of clinicians, MAs, nurses, team coordinators, administrative support, pharmacists, and behavior health specialists.

3.1. Physical space

We found that the physical layout of the clinic in which teams deliver care is crucial to creating an environment in which care teams can function effectively. At Clinics 1, 2, and 4, well-designed, newly constructed facilities with open, shared workspaces have fostered the creation of well-functioning care teams by promoting sustained patterns of both structured and spontaneous communication, collaboration, information-sharing, and impromptu decision-making among all clinic staff that enable them to provide high-quality patient care.

For example, Clinic 1 constructed a new facility in 2013 that was specifically designed for the delivery of team-based care. The clinic is structurally configured into three color-coded "pods" in which care teams operate (Fig. 1). The shared workspaces in each pod promote collaboration, shared decision-making, and distribution of tasks among team members. Inside each pod, team members have a designated desk space for the shift, with the pod coordinator and the nurse positioned next to each other in the center of the pod, and the clinician/MA teamlets located on the perimeter of the pod. During the workday, we observed various team members spontaneously contributing to one another's conversations by sharing memories of patients' medical histories as specific patients were being discussed among the teamlets. These impromptu conversations led to effective and efficient collective decision-making on patient care plans without the need for electronic messaging to resolve issues.

Clinics 2 and 4 are also newly constructed, built in 2011 and 2015 respectively, with particular attention to space utilization that facilitates interactions among team members. Clinic 4 (Fig. 2), for instance, has a large central space with ample workstations for team members to work, interact, and collaborate throughout the day. The central location of the workspace, surrounded by exam rooms, allows clinic staff to have easy access to one another at all times. As a result of the clinic's physical layout, the clinic staff are easily able to locate and communicate with one another to make collaborative decisions regarding patient care.

By contrast, Clinic 3 operates out of an antiquated building constructed in the 1960s with narrow hallways and a small, shared workspace for team members (Fig. 3). This physical environment has posed a significant challenge to implementing care teams in the clinic. One clinic staff member remarked that she would prefer to be in a more modern, spacious space with updated furnishings. The clinic has eight exam rooms lining a narrow hallway, and only one small "huddle room" at the end of the hallway with a limited number of workstations for team members to share. Observers at the morning huddle noted that staff jostled for standing space. One physician used the exam room's telephone to talk with the MA because the space made it difficult for her to exit to the room for a face-to-face conversation. The physical layout of the clinic creates an inefficient work environment in which team

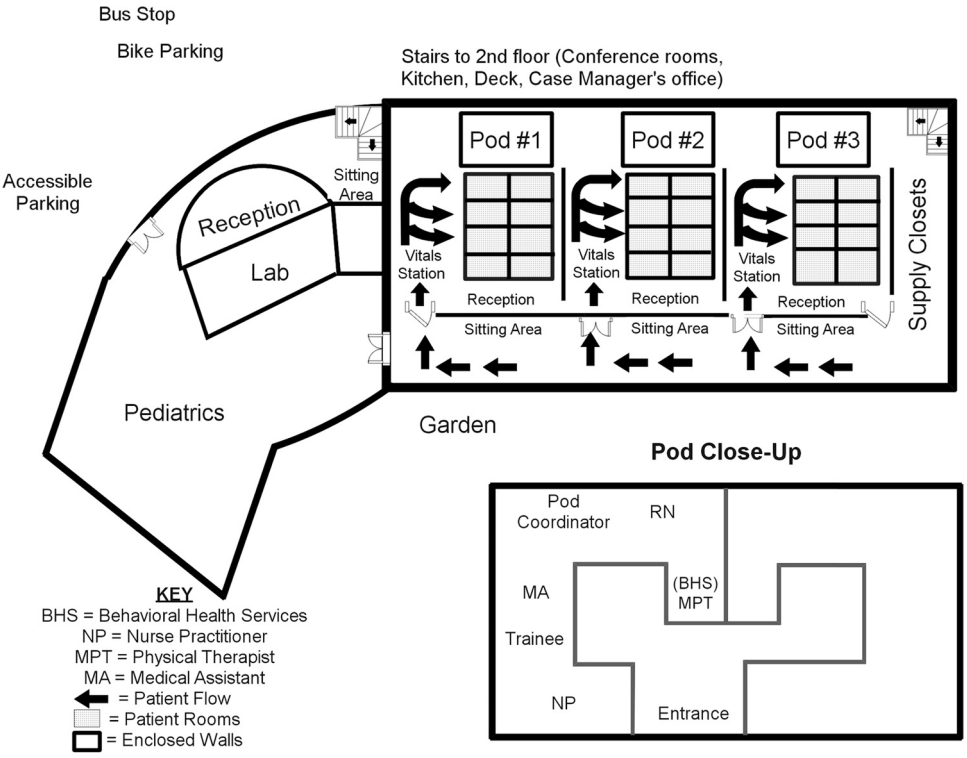

Fig. 1. Clinic 1 layout.

members hustle back and forth from exam rooms to the huddle room throughout the day, and once inside the huddle room, clinic staff appear less able to work comfortably and collaborate due to insufficient and poorly designed space.

3.2. Organizational structure and empowerment

Across all the clinics, we observed that the implementation of team-based care shifts the traditional physician-centric model toward a more agile organizational structure in which team members share responsibility, assume role fluidity, collaborate, empathize with and support one another. For example, when we asked team members at the clinics to define "care team" in their own words, responses included "collective ownership and responsibility of the patient;" "teamwork means never having to take all the blame yourself;" and "working together—it's a team sport." At each of the clinics, staff repeatedly expressed that responsibility for patient care is

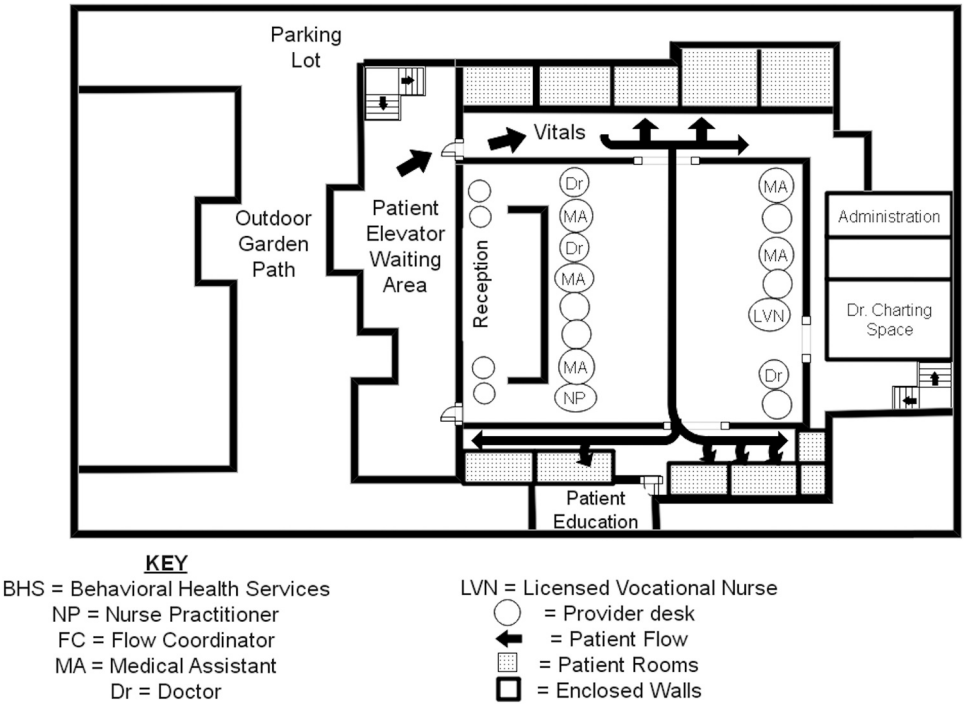

Fig. 2. Clinic 4 layout.

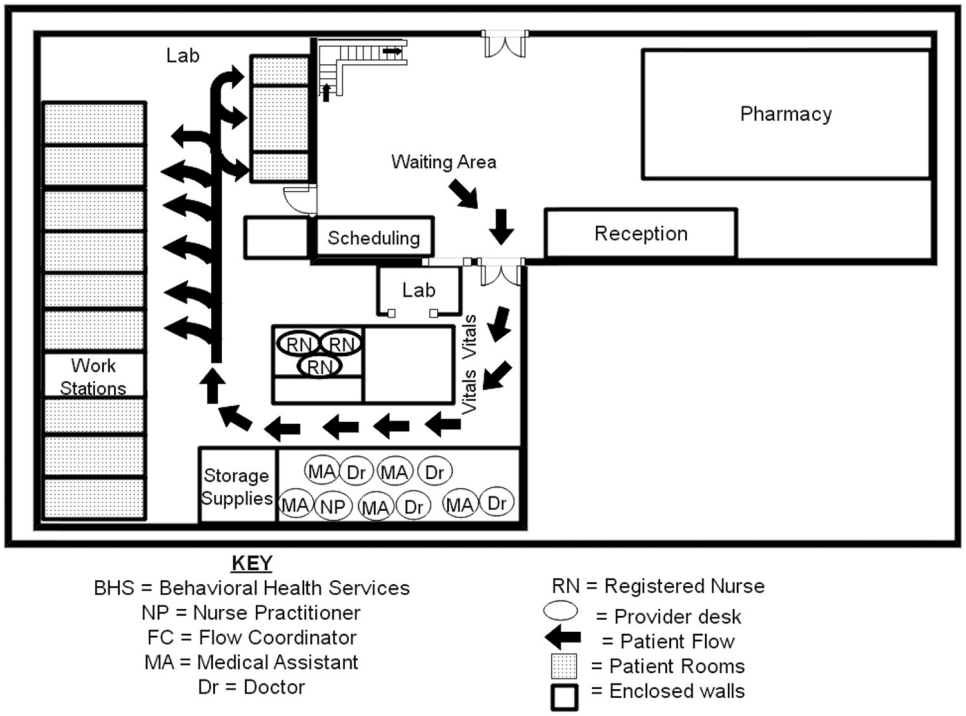

Fig. 3. Clinic 3 layout.

shared across all team members, and that clinic tasks are frequently interchangeable such that everyone shares ownership for the provisioning of high-quality patient care.

We found significant trust among team members to collectively accomplish patient care goals, particularly between clinicians and MAs. Clinicians reported trusting MAs—who are traditionally responsible for administrative and low-level clinical duties, including escorting patients to exam rooms, checking vital signs, and filing charts—to accomplish a variety of tasks that they would not typically be expected to handle, such as pre-visit planning and conducting thorough patient intakes. A willingness on the part of providers to diffuse responsibility to MAs, however, evolved over time. As the Clinic 3 director explained, "old habits, letting go, especially on the side of the providers" had to be overcome in order to effectively implement team-based care. It took time for clinicians to let go of what the director called a culture of "maternal medicine," in which clinicians would allow patients to call them directly and talk for up to an hour, to, instead, allow MAs to take on a more active role in patient communication and care.

This shift in the division of labor has allowed MAs to become increasingly empowered. We found that MAs at all of the clinics were expected to work autonomously and take on substantial responsibility for patient care. When we asked clinic staff which member of the care team facilitates the accomplishment of care team goals, MAs were mentioned the most often. At Clinic 3, the clinic director told us that "MAs really run this clinic." Informal conversations with MAs at the clinics, moreover, revealed that they take great pride in their work, and have high self-worth and a mentality of "I can deliver." Importantly, MAs have earned the trust of not only the clinicians, but of the patients, which has helped facilitate a distribution of clinical tasks away from the clinicians and nurses and contributed to more shared responsibility for patient care among all clinic staff. At Clinic 3, this trust was facilitated in large part by having the MAs consistently appear with the clinicians during patient appointments:

> "What really helped, I think, was the consistency for the patient having to see [the MA] working all the time with [the clinician]. That we're a team. They had to have the experience of trusting that if they ask [the MA] a question, that we would work as a team to answer it."

Patients at Clinic 3 are now comfortable speaking directly with "their MA," who knows a substantial amount about their health history and can answer many questions. Printed business cards were even made for the MAs to help directly connect them to their patients, which has further increased patient trust of MAs. We learned that one MA recently posted a "selfie" on social media with her clinic business card, revealing the pride she takes in her role at the clinic.

3.3. Staffing

All the clinics, however, faced challenges with recruiting and retaining full-time MAs who were qualified and highly motivated to keep up with the increased demands required of them in the team-based care model, particularly without commensurate increases in wages. In this way, challenges with resources and staffing were a key barrier to care-team implementation and sustainment across all the clinics.

A clinician at Clinic 1, for example, stated that hiring MAs is a major challenge because the qualified applicant pool is so small in the rural area where the clinic is located and many applicants are ill-prepared for work on care teams. He explained that there is only one MA training program in the region that has 11 graduates at a time and the program does not have a team-based care curriculum. This puts significant strain on the teams as the seasoned MAs at the clinic must orient newly-hired MAs to the care-team model while on the job. Ultimately, many of the clinic's newly hired MAs end up not being the right fit, resulting in high staff turnover.

Similarly, Clinic 4 staff said that they have found it difficult to recruit and retain MAs who can thrive in the care team environment and accommodate each primary care clinician's specific preferences. As one administrator told us:

> "Some of the challenges that we face [with] care teams are maintaining consistent staff…It's been very hard to find MAs that acclimate to the care team culture, and then also understanding that each provider kind of comes with his own culture as well, whether it's like having a certain focus with patients or how they carry their visits. There's a lot that goes into it and we want to ensure that whoever comes onboard is really in tune with that."

Having the appropriate training and disposition to work on care teams is crucial and can be difficult to find and retain for clinics. In addition, some MAs mentioned that the increased responsibility and pressure in the care team model combined with low salaries for MAs contribute to high turnover.

To try and ensure the success of newly hired MAs as much as possible, however, administrators at Clinic 4 have implemented specific hiring and onboarding processes. These include emphasizing to prospective candidates how much team-based care is a central part of work in the clinic, introducing MA candidates to clinicians during the interview process to gauge if they will work well together, and, most importantly, providing orientation for newly hired MAs on the delivery of team-based care. As a clinic administrator explained, presentations on care teams have now become a standard part of orientation for all new hires to compensate for the lack of specific team-based care curricula in most MA training programs:

> "It's a standard thing that we're giving all new hires. We bring them in and … I will ask them, 'What is the care team?' and 'How are you a member?'…We sit with them, we'll go through the whole process and the terminology and the checklists, and just go through it as thoroughly as we can to help them through that process quicker."

The strong reliance of team members on one another to collectively accomplish goals in the team-based care model creates an environment in which staffing shortages of well-qualified MAs can greatly impede the efficiency and dynamics of the team. The clinics have had to creatively design specific hiring and onboarding practices to internally address these challenges.

4. Discussion

Previous research has found that a key element of high-functioning primary care practices is the creation of teams that share responsibility for clinical care and clerical tasks—what some have deemed the "Share the Care" model of primary care.[6,22,23] Safety-net settings, however, can pose a unique set of challenges to implementing care redesign, including financial constraints, high staff turnover, and cultural resistance to change.[10,11] The results of our study reveal key facilitators and barriers to implementation and sustainment of team-based care in safety-net clinics.

First, our results affirm that well-designed physical space can be a catalyst for innovation in the health sector,[24] and that the implementation of effective team-based care requires deliberately designed physical environments that are conducive to fostering sustained patterns of formal and informal interaction. Constructing updated, open-layout clinic spaces, however, requires significant financial investment that is often not readily available in resource-constrained safety-net settings, as was the case for Clinic 3. Care teams were largely unable to function effectively in Clinic 3's dated physical spaces that were crowded and cramped and isolated team members from one another throughout the work day. In this way, our results align with previous research on high-performing primary care practices that has found that thoughtful physical layout with co-location of clinicians and nonclinical staff in common work areas is crucial to implementing effective care teams by enabling efficient face-to-face communication and frequent forums for interaction.[6,22,23]

Second, we found that implementing team-based care well relies, in part, on relaxing the traditional primary care hierarchy into a more flexible organizational structure that fosters an ethos of interdependence. This relaxing of the hierarchy requires a culture shift on the part of clinicians to allow for a diffusion of responsibility to conventionally ancillary clinic staff. Our results show how the transition to team-based care can promote an empowering organizational structure that encourages all staff to work to the fullest extent of their education and training.

Related, our results echo recent research on the increasing centrality of MAs to the effective delivery of primary care,[25–28] and on the necessity of role transformation for MAs to create successful care teams.[6,22,29] Previous research suggests that high-performing primary care practices are effective, in part, due to MAs who transcend their traditional scope of work and assume increased responsibility for elements of patient care.[6] Our results from the safety net underscore the key role that highly motivated MAs play on care teams.

However, in line with previous research that has found that limited resources, including persistent understaffing, is a key barrier to innovation in safety-net health systems,[11,30,31] our findings suggest that recruiting and retaining well-trained, highly qualified MAs is a significant challenge to implementing and sustaining care teams in the safety net. Echoing previous researchers who have put forward recommendations to facilitate a more robust MA workforce,[29] we suggest that increased compensation for MAs to reflect the valuable role these individuals can play may help to mitigate chronic MA shortages in safety-net clinics. In addition, our findings underscore that building comprehensive team-based care curricula into MA training programs could enable more MAs to graduate with the skills needed to work and excel in care team environments in the safety net and would relieve existing clinic staff from having to conduct on-the-job training for newly hired MAs.

4.1. Limitations

The major limitation of our study is the small sample size that limits the generalizability of our findings. Second, our sample of safety-net clinics may represent those that are better resourced than typical safety-net providers, further limiting the generalizability. Third, in keeping with the precepts of rapid ethnography,[19] our site visits were of relatively short duration. Future qualitative studies exploring team-based care in the safety net would benefit from more prolonged observational periods in more settings, and more in-depth interviews to generate detailed insights into the complex processes of care-team implementation. Future studies could also focus on the pre-implementation phase and clinic readiness to innovate, as well as the key role of clinic leadership in initiating implementation—a finding from this study that was unexplored.

5. Conclusions

By providing qualitatively rich insights into the implementation process of care redesign in a diversity of safety-net clinic settings, this study contributes important empirical findings to the literature on innovation in the safety net. To successfully sustain the team-based care model in the safety net, financial investment to support the construction of open-layout clinic spaces is needed, as well as more training opportunities that prepare MAs for work on care teams. In addition, we suggest that higher salaries for MAs that reflect the valuable role these individuals play on care teams may help safety-net clinics retain highly-qualified and motivated staff.

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Conflict of interest

The authors declare that, to the best of our knowledge, no conflict of interest, financial or other, exists.

Appendix

Site Visit Observation Form – Patient appointment

Date	Observer
Clinic	Clinician Primary MA
Language of interaction ☐ Third person translated in person ☐ Telephone translation service used	Patient age, sex
Complexity of patient's care plan *Low Average High*	
Pre-visit questions for patient	
Who takes care of you here?	
Whose advice do you rely on?	
Time Start _____ End _____ Type of activities and interactions observed:	
Field notes	
Post-visit questions for patient	
With whom do you have rapport? Does anyone on the care team (besides physician) know your name, family, background, etc.?	
What is the nature of interaction with your physician or other care team members? Comfortable (like a friend) or professional?	
Did you know you have a care team?/Do you know who your team is?	
Who on the care team do you know best?/Who do you rely on?	
Who did you interact with today?	
Who on the care team do you learn from?	
Which care team members interacted with/were a part of the patient's visit today? ☐ Physician ☐ Nurse ☐ Medical assistant ☐ Social worker ☐ Behavioral health provider ☐ Front desk staff ☐ Other:	
Impression of appointment (Circle on or more): *Slow Long Average (45min) Quick Rushed*	
Write a sentence that captures your experience; summary of the narrative	

Site Visit Observation Form – Care Team

Date	Observer
Clinic	Time Start _____ End _____
Type of activities and interactions observed:	
Questions for care team member (clinician, MA, administrative staff etc.)	
Is today a typical day?	
Define care team.	
Are you part of one or more care teams?	
Is concern/worry about patients shared by more than one member of the care team?	
How does the care team work?	
Does being on a care team make your work easier or more difficult – or both?	
What member of the care team facilitates the efficiency/ease of your tasks most?	
Do you do work that another team member could do? Do you feel like you're working at the top of your license?	
Did you work here before care teams were created? What was it like? Do you prefer the way the clinic works now or then?	
Field notes	

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