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ORIGINAL RESEARCH

Intentional or Not: Teamwork Learning at Primary Care Clinics

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Abstract

Background and Objectives Primary care teamwork has been shown to increase satisfaction and decrease stress for physicians but the impact of outpatient teamwork for primary care residents' learning has not been described. This study aimed to understand the role of teamwork in residents' learning during and after the establishment of teams.

Methods Interviews with 37 primary care residents addressed their experiences at outpatient clinic, including their perceptions about whether team-based care affected their educational experience. Using qualitative thematic analysis, transcripts were coded to identify themes about teamwork and learning, both positive and negative.

Results Residents described learning both about and through teamwork at continuity clinic, despite variation in the speed and extent of initial integration into teams. As residents learned how to work on a team, they realized the importance of face-to-face time together and trusting one another. Team members also taught residents about the clinical system and social aspects of patient care, as well as some procedural skills, which led them to understand how teamwork can improve patient care and efficiency. Finally, residents learned, through both optimal and suboptimal first-hand team experiences, to see team-based care as a model for future primary care practice.

Conclusions While integrating residents into primary care teams, educators should consider the potential value of teamwork as an intentional learning method. Team members, beyond the preceptor, can offer valuable instruction, and team-based workplace learning prepares residents to use teamwork to optimize care for patients.

Keywords Teamwork · Primary care residents · Outpatient residency training · Workplace learning

Introduction

Many US primary care practices are transitioning to medical home models with an emphasis on team-based care [1, 2]. Team-based care has been called a "foundational element" of high-performing primary care [3], and teams that work closely together are protective against burnout [4–6]. For residents, who may have less knowledge about the clinic environment, teamwork can provide a sense of belonging and a smooth integration into clinic work [7, 8]. Integrating primary care residents into teams is essential to prepare them for future practice within new care models. Recent research has shown that teamwork enhances residents' satisfaction with their training in primary care clinics [9–12], moderates the stress they typically feel at primary care clinic [13], and encourages their interest in primary care careers [14].

This evidence leads us to believe that integrating residents into multi-professional teams could yield educational benefits. Given that residents largely train through workplace tasks [15, 16], it is important to examine the role of teamwork as a specific method of work-based clinical learning. Bandura's social cognitive theory (SCT) supports this assumption [17]. It describes how learning results from a triadic relationship among learners' characteristics (e.g., prior learning and attitudes), learners' actions, and the environment [17]. Residents bring to primary care teamwork not only medical knowledge but also prior experiences on hospital-based teams with different compositions of personnel; thus, how the composition

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and actions of the primary care team, residents' actions (e.g., assumption of hierarchy, questions, orders, errors), and residents' cognitive processing affect one another is likely to lead to new learning.

However, residents face demands that may inhibit this learning and make team integration difficult. Typically, residents move from one training setting to another, attending primary care clinic only one half-day a week. Their sporadic presence at clinic makes incorporating them into teams difficult [9]. While others have described the process of integrating residents into teams [9, 18, 19], we sought to identify what residents reported learning as they became integrated into a primary care team. We also focused on the role of the team as a method of learning and explored whether, after experiencing teamwork, residents planned to use a team-based approach in their future practice.

Methods

Study Context

The residents included in this study were training at clinics that participated in a primary care learning collaborative, the Academic Innovations Collaborative (AIC) [20]. Eighteen hospital- and community-based primary care clinics redesigned care delivery with four objectives: team-based care, population management, high-risk management, and patient engagement. At the time of our study, the clinics had created teams, assigned all residents to a team, and empaneled patients to a team. With a mean size = 6, teams included primary care physicians, medical assistants (MAs), nurses, and other health care personnel [21]. The AIC evaluation team received IRB approval from Harvard T.H. Chan School of Public Health Institutional Review Board for this interview study.

Study Design

We designed a semi-structured interview guide. With open-ended questions, we explored residents' educational and clinical experiences at continuity clinic and their perspectives on primary care redesign, especially teamwork. Of particular interest were responses that pertained to how, what, and from whom they learned at clinic.

Recruitment

We contacted residency program directors and asked for contact information for second-, third-, and fourth-year residents who were training at one of the 18 practices and were considering or committed to a primary care career. We excluded residents in their first year of residency because they did not experience the clinic before the AIC changes.

Data Collection

Residents meeting our inclusion criteria were emailed a study invitation. A little over half of contacted residents completed an interview (56.9%). Each participant signed a written informed consent prior to the interview and received a $75 gift card. One author conducted and audio-recorded 45–96-min (average 60 min) interviews, which were professionally transcribed.

Data Analysis

We conducted a qualitative thematic analysis of the interview transcripts [22]. Rather than test hypotheses, we were interested in themes that emerged commonly across interviews. One author began analysis by open-coding transcripts, and organizing the data into categories [23, 24]. Then, together, the team developed and tested a codebook that contained 11 codes, yielding a Fleiss' kappa of .81, which indicates high agreement [25]. One author then continued coding the entire content, using NVivo 10 qualitative analysis software to manage the coding process. For this paper, two authors conducted a second round of focused coding of responses related to two codes: teamwork and learning [26–28]. From this second round of coding, we identified the themes presented in this paper.

Results

We interviewed 37 residents from 16 of the 18 AIC primary care clinics. Twenty-five respondents were women and 12 were men; 15 were in post-graduate year (PGY)-2, 20 in PGY-3, and 2 in PGY-4. We randomly assigned each resident a number (1–37) for identification purposes, followed by gender (M/F) and year in residency (2–4).

Our findings are organized into three main themes. First, as the clinics assigned each resident to a forming team, residents learned how to function on a primary care team. Second, through both positive and negative experiences, residents observed how teamwork can impact everyone—patients, the clinic, and themselves. Finally, residents became convinced that teamwork is the model they want for future practice.

Learning How to Work on a Team

Residents reported learning how to work on a team through a range of positive and negative experiences. Residents

recognized three interdependent aspects of team functioning as important: integration, presence, and trust.

Integration Most residents felt they were part of a team at their continuity clinic, at least titularly. But, the implementation of teams was an ongoing process. As reported elsewhere [9, 18], an obstacle to team formation for residents was their training schedule.

> [I'm] not as integral [to the team] as I wish I could be 'cause… the way that the primary care curriculum is set up, you're just not there enough to really be part of a team. [8-M-3]

Residents tangential to their team remained ignorant of key aspects of functional teamwork:

> I would say that I don't quite understand everybody's roles and how the workflow is actually supposed to go. [2-F-2]

Yet, most residents reported engaging with their team members sufficiently to learn about teamwork.

> I feel like there's definitely a lot of teamwork. I think there are a lot of things that we're also doing to kind of create more of a team feeling within our clinic…I think we do a pretty good job of it...[24-M-3]

Some, by being fully engaged, perceived the benefits of teamwork.

> I work with the same people every time, and they're great… I know my administrative assistant…I know the two MAs in my suite very well…So I do feel like I'm a part of a team, and actually they're really great people…very helpful. [1-F-3]

Presence Residents perceived the importance of face-to-face time among team members. A majority mentioned how their sporadic presence at clinic interfered with their functioning on teams. But, equally important to residents' experience of teamwork was the lack of continuity with team members stemming from staff turnover, part-time faculty, inadequate staffing, and simple absences, even due to lunch breaks.

> They really do try and …we have actually set teams, but I think the practice is so huge, and there's so many people and the team members change so often that… theoretically there is a team with set roles, but it's not working. You know, it doesn't feel like a team. [9-F-2]

> And I think, you know, the MAs do a lot, and I think they might be even overstretched. I think we could probably be using even more MAs. [32-M-2]

> In an academic practice…I think the other problem…is we had a lot of half-time physicians who were just physically not there. [36-F-3]

Trust Residents also learned how important trust is for effective teamwork. When the following resident was asked about challenges to working as a team, she responded:

> Trusting that everyone will do their job. You know, there are certain members of our team that are phenomenal. They are 100% reliable…and then, there are other members that you feel like you're essentially doing their job cause you're checking in so much. [26-F-2]

Trusting other team members involved learning how and when to delegate or collaborate on tasks:

> I think that it requires a lot of trust in your team…depending on…how comfortable you are with your team, you're more or less likely to sort of let go of the things that used to be…yours to do…and then you need some continuity, so you need to have people that are staying for a long enough time to then create that trust and create… the continuity of the team in that regard. [15-F-2]

Learning Through Teamwork

Residents reported learning through teamwork, including improving clinical care and knowledge about primary care medicine.

Improving Clinical Care When teams were effective in their day-to-day work at clinic, residents perceived benefits in two categories: (1) a more efficient system of care and (2) higher quality patient care. They also distinguished between teamwork and simply "having helpers." Most residents felt that utilizing their teammates could increase their efficiency, decrease their busy work, and enable them to focus on the parts of doctoring they felt were most important. While these benefits were important, residents realized that delegating tasks is not

necessarily the same as operating like a true team. One resident explained what he saw as different levels of "teamness":

> [Although others take responsibility for some tasks] and do a good job, ultimately everything still kind of revolves around the physician, which to me is, I mean, that's not team-based care. That's me with a lot of assistants, you know? So…I feel like we're slowly moving in that direction. [3-M-2]

Other residents explained how teams were helpful because they bolstered continuity of care for patients, particularly important in offsetting residents' own transience and divided attention between inpatient and outpatient settings: "I think one of the main sorts of bonuses is it…allows for much greater continuity of care for the patients" [28-F-3]. Residents felt a sense of relief that, given their limited time for outpatient care, they were "not the last line for these patients...that there's actually a safer and more appropriate kind of team approach" [33-F-2]. Another resident explained: "I use the nursing staff and the other doctors in my practice to help extend my ability to follow-up with patients in an appropriate amount of time" [37-M-2].

Increasing Residents' Breadth of Knowledge of Primary Care Medicine While residents reported their preceptors' modeling and direct instruction as primary sources of learning, some also recognized learning from other team members. Residents credited MAs and other team members with helping them understand clinic functioning and community resources.

> We have some different resources… some social workers and case management folks, refugee coordinators, who can help you with a lot of the not-so-medical situations that we deal with, and I probably learn just as much from them [as from preceptors]. [31-M-3]

These team members also trained them in clinical skills:

> The MAs also help teach me about, like, the strep tests that they're doing, they're the ones who showed me how to swab. The nurses will help me whenever I have to do a procedure, like, if I have to do a urine cath, they'll teach me. [11-F-3]

Residents explained that it was helpful when teams were *thinking* together about patients, not just dividing tasks.

> We [have] these team meetings that are about patients, not about tasks, which I think has helped everybody contribute ideas rather than just assignments…I think all of those things are moving towards the team being a care team rather than a work team. [23-F-2]

This respondent explained further that, when caring for complex patients, well-functioning teams enriched residents' learning, providing them valuable knowledge about both patients and clinic.

> [With] a challenging patient, I think having a lot of perspectives weigh in with you on those patients is much more important and helpful than just trying to sit and worry about them by yourself…There's what I bring to the table as a physician and…there are many other people on the team, and sometimes they're better suited to figure out this problem than I am or sometimes they just will, you know, pinch hit some suggestion that's really helpful and perfect and I just hadn't thought of and that is something the team is really good at. [23-F-2]

Learning a New Model for Future Practice

Despite encountering challenges and frustrations with teamwork, as well as rewards, almost all the residents were hopeful and excited about working on teams in the future.

> I think [teamwork] is the future of medicine. I think that's how it's gonna work. I think there's no way a primary care doctor can do it all themselves. I think the idea of somebody practicing off by themselves is an idea of the past, so I think it's gonna be – wherever I go, I hope I'm working in a team. [26-F-2]

Moreover, residents commented on the value of being exposed to teamwork during training—with all its challenges and rewards—during a period of both local and national clinical change.

> So I think the important thing in residency is…being exposed to people who are doing these exciting things, being exposed to the clinic that… has a team-based model or they're working towards it and see how that's happening and just to get excited about it… so that you want to do it later on. [17-F-2]

Discussion

Drawing from interviews with 37 residents, this study examined how trainees learned both *about* teamwork and *through* teamwork experientially at their outpatient clinics. First,

residents emphasized the importance of face-to-face time and trust for teams to function effectively. Second, residents learned new things through teamwork—how to improve workflow, enhance continuity of patient care, and extend resources for patient care. Finally, despite both negative and positive team experiences, residents communicated that they were committed to a team model for their future practice.

While some residents did not yet feel fully integrated into their teams, they learned through negative experiences what was needed for teams to function effectively. We focused here not on the integration of residents into teams, as others have done previously [9, 18, 19], but instead on the potential of the team as a *learning method* for residents—i.e., a significant element in the educational environment. Not only did residents learn about team functioning and how teamwork might fit their future practice, but they also learned primary care practice skills through teamwork. In addition, residents described learning directly from other team members besides their preceptor, and the team structure helped them learn to rely on a wider network of teammates to care for their patients. At times, residents described using team members instrumentally to be more efficient, but other residents described viewing teammates as offering inherently valuable skills and knowledge. These benefits prepare residents for future practice, as caring for complex patients in primary care demands learning from a multiprofessional team.

Our study confirms the obstacle residents' schedules pose to their integration onto teams, but it also addresses the persistent problem of staff changes to the development of teams. While Ladden et al. [29] described a nationwide problem with understaffing and frequent staff changeover, its effect on residents' learning, especially through teamwork, had not yet been apparent, though two studies briefly mentioned the challenge of part-time physicians in academic settings [18, 30]. So, while teamwork may improve the learning environment for residents, inconsistency in team staffing could undermine the use of teamwork as both a learning method and clinical model.

Medical educators rely upon several perspectives on learning that, like SCT, also recognize the interplay among the social and cultural environment, learner participation, and individual cognition, e.g., workplace learning [15, 16] and communities of practice [31]. In a synthesis of research on workplace learning, Wiese et al. [16] described a triadic interaction among learners, instructors, and patients that led to learning through mutual dialogue, observation, and participation. While these findings align with ours and SCT, the definition of the learning environment needs to be expanded to acknowledge the complexity of today's clinical system— namely that it encompasses other health care personnel who interact meaningfully, socially, culturally, and educationally, with learners.

Moreover, faculty need to think more purposefully about how residents can learn most effectively and efficiently. Comparison of this in-depth study of residents' experiential, work-based teamwork learning with previously reported evaluations of didactic teamwork training demonstrates the need for both approaches over time [32]. In a systematic review of teamwork training interventions with learners, Chakraborti et al. (2008) described seven workshops that trained residents teamwork skills; while post-program self-assessments showed positive growth, the authors noted that these experiences needed to be supplemented by longitudinal real-world clinical experiences to sustain the benefits. Here, we would note that our residents might have benefited from formal teamwork skills training, especially in collaboration with other health care professionals, to hasten effective teamwork. Comparing the AIC experience described here with others' formal teamwork skills development programs, we find a growing appreciation for the importance of teamwork learning but an, as yet, underdeveloped approach to implementing teamwork as an intentional educational method, through which residents might learn the knowledge and practice of medicine. Thus, we would argue that such orienting programs could not only hasten team functionality but also highlight the value of teamwork as a learning method.

Our study has several limitations. Not all clinics were at the same point in the process of transitioning to teams and exposure to the "team" varied for the residents in our study. While we are unable to standardize the team experience, we do not believe that this creates a significant concern for our findings because we were focused on what they were learning from both good and bad experiences with teamwork. In addition, because we interviewed residents who were seriously considering or committed to primary care careers, it is possible that their perceptions of and experiences with outpatient teams were, for unknown reasons, more positive than residents' who were less interested in primary care careers (those who are likely to choose subspecialties).

Given the need for primary care physicians in the USA, understanding how primary care transformation is affecting the next generation of primary care physicians is vitally important. Residency program directors should consider not just the challenges of meaningfully integrating residents into teams but also the power of teamwork as a learning method in and of itself. Residents' exposure to teamwork in primary care settings is significant because, as their excitement indicates, the teamwork model provides residents with a vision of better-functioning primary care careers.

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Compliance with Ethical Standards

Conflict of Interest The authors declare that there is no conflict of interest.

Ethical Approval Approval for this study was granted from Harvard T.H. Chan School of Public Health Institutional Review Board.

Informed Consent Informed consent was obtained from all individual participants included in the study.

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