Original research

How middle managers facilitate interdisciplinary primary care team functioning

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ABSTRACT

Background: The Veterans Health Administration (VA) primary care is organized as a Patient Centered Medical Home (PCMH) that is based on continuity management of patient panels by interdisciplinary "teamlets" consisting of primary care providers, nurses, and clerical associates. While the teamlets are envisioned as interdisciplinary in this model, teamlet members may continue to report separately to middle management supervisors within their respective disciplines. Little is known about the role of middle managers in medical home implementation; therefore, the study purpose is to examine and characterize teamlet members' perceptions of middle managers' role in primary care operations and teamlet functioning in an outpatient setting.
Methods: This study applied a formal qualitative data collection method and analysis based on semi-structured interviews of 79 frontline interdisciplinary staff (primary care providers, nurses, and clerical associates) in VA Patient Aligned Care Teams (PACT) teamlets. Interviews were analyzed using a method of constant comparison.
Results: Teamlet members recognize that their supervising middle managers are essential to daily functioning of PACT teamlets in terms of clarifying roles and responsibilities, setting expectations, providing coverage strategies, supporting conflict resolution, and facilitating teamlet-initiated innovation. Teamlet members identified challenges when middle manager involvement was lacking.
Conclusion: Within a multilevel system, frontline interdisciplinary staff continue to perceive the need for leadership by middle managers from their own professional disciplines for solving interdisciplinary problems, setting role-specific schedules and expectations, and fostering innovation. As such, greater focus on the structure and training of middle managers for participation in PCMH models is needed.

1. Background

The Patient Centered Medical Home (PCMH) is an interdisciplinary team-based approach to accessible, continuous, coordinated primary care.[1,2] Interdisciplinary teamwork approaches can improve quality of care while reducing health care costs; consequently, successful interdisciplinary PCMH team functioning and its determinants have become a major focus for PCMH improvement efforts.[3,4] Using a team approach in primary care can improve quality outcomes.[5,6] Providing frontline staff with clear leadership of everyday functions is one criteria known to facilitate improved interdisciplinary team functioning.[7–9]

In 2010, the Veterans Health Administration (VA) implemented its version of PCMH which involved reorganizing frontline staff into Patient Aligned Care Teams (PACTs), called "teamlets." The mandated
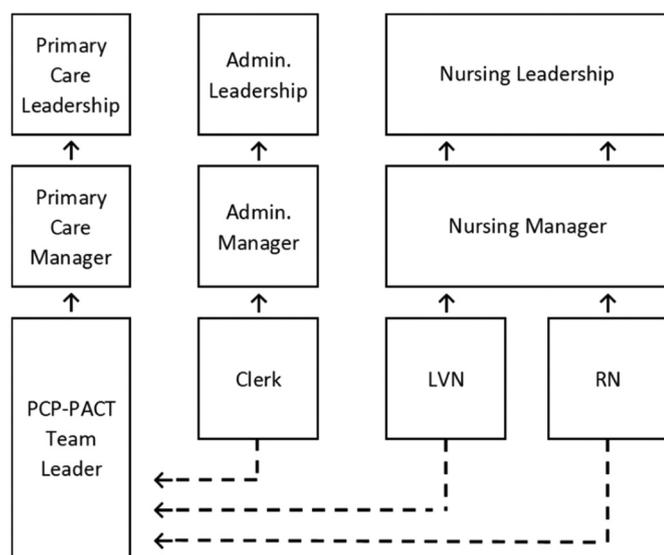
Fig. 1. The PACT teamlet configuration including managers.

PACT teamlet structure has the following configuration: a primary care provider (PCP) who can be either a medical doctor (MD), physician assistant (PA), or nurse practitioner (NP); a registered nurse (RN); a clinical associate - usually a licensed vocational nurse (LVN) or health technologist; and a clerical associate (clerk).[10,11] Together, this small interdisciplinary group composed of one provider and three full-time equivalent (FTE) support staff is assigned responsibility for a panel of approximately 1200 patients. Multiple teamlets cluster to form a larger "team" which includes additional roles from pharmacy, social work, mental health, and other ancillary specialists.

Outpatient clinics with lower patient volume may have all teamlets bundled into one team. Larger sites, such as medical centers (7000–20,000 patients), might have three to five teams each composed of multiple teamlets. Staff within the same discipline have coverage responsibilities for other teamlets within their team.[11] While PACT PCPs are conceptualized as the teamlet leaders in the PACT literature, management of the support staff is provided, at least in part, by discipline-specific middle managers (i.e., nurse or administrative manager).[10] See Fig. 1. While the PCP may be responsible for directing the teamlet through shared decision making and ultimately providing direction regarding appropriate care and care processes, discipline-specific middle managers are responsible for performance evaluations and bonuses of PACT staff. Middle management is subordinate to executive management (e.g. director, chief of staff, and director of nursing) and are responsible for one or two lower levels of staff in a hierarchical organization.[12] There are thus at least two levels of middle managers whose decisions can affect how teamlets complete day-to-day work. A combination of PCP leadership and discipline-specific middle management holds a matrix of responsibility over various frontline staff. Therefore, while nursing staff are respond to the teamlet PCP for PACT responsibilities, they also report to a middle manager in their service line. Despite the central involvement of middle managers in overseeing teamlet members, there has been insufficient attention to these roles in formal PACT policy or literature.

In large multileveled systems, middle managers are known to play a central role in the implementation of healthcare innovations.[13–17] Specifically, middle managers are key to implementation effectiveness by diffusing and synthesizing information regarding innovation implementation, mediating between strategy and daily activities required to implement innovations, and selling innovation implementation.[14,15] To generate hypotheses about how to create ideal conditions for team functioning in a newly implemented model, we conducted a qualitative study that explored teamlet members' perceptions about day-to-day

management of the teamlet members. Specifically, we explored the ways in which direct managers affect teamlet functioning and support teamlet members in carrying out everyday PACT responsibilities. We present our findings in relation to the theory of middle manger's role in implementing healthcare innovation.[14,15]

2. Methods

Study data came from the Veterans Assessment and Improvement Laboratory for Patient-Centered Care (VAIL), a demonstration laboratory evaluating PACT implementation in one Veterans Integrated Service Network (VISN).[18] VAIL takes place in VISN 22, the administrative area covering Southern California and Western Nevada, and is composed of five local healthcare systems. The six VAIL demonstration sites are outpatient clinics with 10, 12, 13, 14, 22, and 31 teamlets each.

We employed a quota sampling approach to randomly select three individuals from each of five strata in six sites participating in VAIL: PCPs working in the facility at greater than or equal to 50% full time; PCPs working at less than 50% full time; registered nurses; clinical associates; and clerical associates.[19] For some strata, the supply of potential respondents was exhausted before a quota was achieved. We invited 144 individuals to participate and 79 agreed to be interviewed (response rate = 55%). Most interviews (71/79) were conducted in person; eight were conducted by phone. The most common reasons for not participating were lack of time (n = 16) and the perception of not being qualified to participate (n = 13). Interviews were completed with 29 PCPs, 18 RNs, 20 clinical associates, and 12 clerks. Because thematic saturation in qualitative analysis is typically reached after 12 interviews, our minimum recruitment target was 12 respondents from all sites in each role.[20] Each interview lasted between 19 and 60 min. Interviews occurred between January 2012 and February 2013, approximately one to two years after each site began to implement PACT.

A semi-structured interview covered multiple domains including: teamlet formation, teamlet communication and coordination, roles and responsibilities, team training for PACT implementation, experiences of PACT changes, experiences of management and leadership support, and perceived level and contributing factors to team functioning. Probes relating to the role of managers were employed in three of the six sites. Most interviews (n = 77) were audio recorded, professionally transcribed, with transcripts cleaned to remove identifying information. Detailed notes were taken during the two interviews where the respondent did not agree to be recorded.

Four investigators independently reviewed five interview transcripts and developed code lists with code definitions, which were then compared and consolidated according to the codes that the investigators mutually agreed were prominent in the data. Eight interviews, two from each teamlet role, were then independently qualitatively double coded by two investigators and the application of codes was compared and discussed.[21] Discrepancies were resolved by discussion and consensus-building. One investigator then coded the remaining interviews, and other members of the analytic team systematically reviewed the coding, commented on inconsistencies, and resolved inconsistencies through team discussion. All analyses were conducted using ATLAS.ti.[22] Presentation of results to VA leadership served as a validity check. Thematic saturation was reached around the code "middle manager," which captures all mentions of direct interaction between a teamlet member and a direct manager and "team functioning", which captured what the respondent perceived about their own team's ability to collaborate and coordinate. Subsequently, using a method of constant comparison, we free coded all output from the middle manager code and identified emergent themes. We used the team function code to categorize transcripts as representing a positive or negative team functioning experience, which we described as high or low for simplicity. After identifying emergent themes in the middle manager code, we reviewed variation within the emergent themes by

respondents perceived level of team functioning (categorized as high or low).

3. Results

3.1. Updating the PACT model to include middle managers

PACT teamlet members confirm that management of providers and staff on the PACT teamlets is routinely done, at least in part, by discipline-specific managers. PCPs reported to a manager in the medicine service line, while RNs, LVNs, and health techs reported to a manager in the nursing service line and medical support assistants or clerks reported to a manager in the administrative service line. See Fig. 1 for PACT teamlet configuration including direct managers. Managers from three disciplines (medicine, nursing, and administration) are involved in the daily functioning of a PACT teamlet. Only the PCPs consistently had locally designated managers at their local primary care site, and only PCPs were formally managed by primary care operation leaders. Both designated nursing and administrative managers were most often located outside of local primary care sites, although local sites often had informal designated leads representing these disciplines.

Teamlet members confirm that day-to-day teamlet function is directly impacted by coordination between the managers in the three service lines involved.

3.2. Emergent themes

Teamlet members identified five themes relating to how managers provide guidance or support for the daily functioning of PACT teamlets. Managers: 1) clarify roles and responsibilities; 2) set expectations; 3) provide coverage strategies; 4) support conflict resolution; and 5) facilitate teamlet-initiated innovation.

3.2.1. Theme 1: middle managers clarify roles and responsibilities

Teamlet members across all three disciplines (medicine, nursing, and administration) indicated their direct manager within their specific service line as the place to turn when seeking clarity on responsibilities and role definitions. Staff further indicated that nurse and administrative managers play the key role of assigning tasks and defining task distributions between staff in the same role. Across all roles and sites, teamlet members identified that proactive involvement by managers can clarify and help resolve role confusion.

Notably, on highly functioning teamlets, PCPs indicated that their staff teamlet members turned to their nursing or administrative managers when seeking role clarification. On lower functioning teamlets, however, some teamlet PCPs envisioned their staff assuming roles that conflicted with the staff roles defined by staff managers. In such cases, managers assert their authority to ensure that staff work within their scope of practice. When staff receive direction about their roles from their teamlet PCP that conflicts with the guidance of their manager, they defer to their manager as the final voice of authority—not their team PCP.

3.2.2. Theme 2: middle managers role in setting expectations and accountability

In addition to clarifying roles and responsibilities, teamlet members across all roles perceived their managers as being responsible for setting expectations. Specifically, managers establish where specific tasks should take place and timelines and expectations around how long various tasks should take. Further, they can establish expectations that inhibit providers and staff from resisting change. Teamlet members reported that challenges can arise when managers are not involved in setting PACT expectations and holding staff accountable; some staff might not assume new tasks and might shirk their responsibilities (Table 1).

3.2.3. Theme 3: middle managers role in providing coverage strategies

In general, PCPs covered for the other PCPs on teamlets within their team and few examples of manager intervention occurred. For nursing and administrative staff, however, the managers were central to facilitating coverage. The need for manager engagement was particularly true for incomplete teamlets, e.g., a teamlet missing an RN and having to rely on cross-teamlet coverage for RN-level tasks. Nurses indicated that the need for cross coverage is a daily challenge. Managers were recognized as playing a key role in navigating unplanned absences and preparing for planned absences.

In addition to navigating coverage issues relating to absenteeism, clerical associates relied on managers to address "fairness issues" and provide cross-coverage to arbitrate unbalanced workloads. Administrative managers made temporary reassignments when the clerks on some teams were experiencing exceptionally high patient loads and were unable to independently recruit the help of another clerk.

3.2.4. Theme 4: Middle managers role in advocacy and supporting conflict resolution

PCPs and staff agreed that one of the most important ways managers provide support is by serving as a resource for conflicts within the teamlet. The nursing and administrative staff emphasized that having the option of involving the manager within their service line gave them "agency" and "voice" on the teamlet. Staff report bringing their manager to a meeting with their teamlet when they are unable to independently navigate and resolve teamlet conflicts. Staff value advocacy provided by with-in service managers. PCPs also confirmed that managers "could" play a key role in conflict resolution. However, when staff managers would not engage with PCPs about finding a solution to a conflict with one of their managers, achieving resolution became challenging. For example, one PCP indicated that in general PACT broke down the "silos within the teamlet roles" and that under PACT, the PCPs felt they now had more authority to "task" staff to support them in various ways. However, assigning new tasks without creating conflict "was a challenge… with the MSAs [clerks]… because of the personality of the supervisor who was working at the time".

3.2.5. Theme 5: middle managers role in facilitating teamlet initiated innovation

Overall, teamlet members in all roles recognized the importance of their managers in facilitating innovation or change. Further, teamlet members highlighted that though PACT teamlets are interdisciplinary, most changes in team processes involve changes in disciplinary-specific roles or responsibilities. On highly functioning teamlets, where implementing changes occurred effectively, staff described having a teamlet PCP who encouraged them to go to their manager and initiate the change within their service line. Quotes demonstrate that going through the service line specific managers provides clerks and nursing teamlet members a vehicle through which they can initiate change.

Changes often have to be approved within the separate service lines, and managers facilitate communication up the chain. Teamlet members across all three service lines agreed with this RN who described meetings with managers as an opportunity for teamlet members to raise ideas. Another key to implementing change that teamlet members across the roles agreed upon is the need for managers to coordinate about changes across the disciplines.

Teamlet members reveal three ways that the innovation process breaks down: 1) When teamlet members are unsure to whom they should raise their ideas; 2) when teamlet members do not feel comfortable bringing ideas to their direct manager in their service line; and 3) when there is lack of communication and coordination across managers in the various disciplines about how to implement change. The following quote illustrate how failures of manager coordination break down the innovation process:

Table 1
Supervising middle managers day-to-day influence on PACT teamlets.

Themes	How Managers Provide Guidance or Support	Examples of Teamlet Perspectives of Managers Involvement
Theme 1: Middle Managers Clarify Roles and Responsibilities [3.2.1]	Teamlet members across all three disciplines (medicine, nursing, and administration) indicated their direct manager within their specific service line as the places to turn when seeking clarity on responsibilities and role definitions.	"My nurse, RN… I know that if she's not clear, she goes to the nurse clinic manager and it clarifies her role." [PCP] "Some doctors were not in agreement [about the boundaries of the LVN role]. They didn't want their nurses to do that [call patients] … But then our other boss [nurse manager] said it was important and we should start doing it…This boss said yes. It has to be done." [LVN]
Theme 2: Middle Managers Role in Setting Expectations and Accountability [3.2.2]	Teamlet members reported that involved managers can provide clarity around expectations. When managers were not involved in setting PACT expectations and holding staff accountable, some staff might not assume new tasks and might shirk their responsibilities.	"The RN was supposed to go to the green team…And then I found the manager and… she said, "Well, you're supposed to go to the blue team." So I went to the blue team." [PCP] "Sometimes her [an LVN] own patients try to check in and if the patient checks in at 2:30, she will just let it [the patient] wait until 3:40 [staff leave at 4] and then say, "Hey, I got to go so you guys [other nursing staff] got to take care of this patient." Management has not been enforcing that everybody needs to do their own work…Management is not having these people be accountable." [LVN]
Theme 3: Middle Managers Role in Providing Coverage Strategies [3.2.3]	PCPs covered for the other PCPs on teamlets within their team. For nursing and administrative staff, the managers were central to facilitating coverage.	"We have 12 doctors in our team—if we take off one or two days, it goes to the entire physician group to cover, because we have a message system that goes to our team." [PCP] "The LVNs and RNs… some of them start later or stay later, and the issue was who's covering whom…you have to account for who's out sick, who's on vacation, who's car got stuck on the highway… The nursing supervisor, she has been sending out these e-mails to everybody saying here's the people who are out today, here's the people who are covering for the people who are out today." [PCP] "So before we go on vacation or anything,—my manager and I push it on the other girls is that if you're going to be gone, let everybody know… that your patients should not be scheduled in your clinic because you're not going to be here." [LVN]
Theme 4: Middle Managers Role in Advocacy and Supporting Conflict Resolution [3.2.4]	PCPs and staff agreed that one of the most important ways managers provide support is by serving as an advocate or resource for conflict resolution within the teamlet.	"When you [the nurse] can't solve it on your own, when you have to keep on saying the same thing repetitively, when your voice is not being heard, that's the only time that I've had to pull outside people [nurse manager] to come in." [RN] "We [teamlet members] try to directly communicate, but sometimes that doesn't work. We sometimes use a manager [to advocate for us] and they come into the meeting." [LVN]
Theme 5: Middle Managers Role Facilitating Teamlet Initiated Innovation [3.2.5]	Teamlet members in all roles emphasized the importance of their managers in facilitating innovation or change. Further, teamlet members highlighted that though teamlets are interprofessional, most changes in team processes involve changes in disciplinary specific roles or responsibilities.	"I'm very shy… But if it's [an innovation] that I felt really deeply about, I'd probably speak to my providers about it, but then they'll probably say you need to speak to your supervisor. Go through the supervisor." [Clerk] "We go into specific RN/LVN meetings, nursing meetings [led by the nurse manager], just kind of bounce things off and see what we can do. And if we can, we send them [the ideas] up the chain and hope they get addressed, and if not, then they come back down." [RN] "So, you want to effect a change, I have certain things that I would like my team to do, I would have to take it to my physician's supervisor…I went to her and she listens and… she has her own feedback and she tells me why it's not feasible, or if it's feasible, she'll take it to the meeting, or she'll talk to the nursing supervisor." [PCP] "I go through that chain and usually I can get answers right away from the physician supervisor …if it's something that is reasonable and can be done or that she thinks that it could change, then she takes it to the nursing supervisor." [PCP]

"I brought up my issues [having the teamlet do something differently], they [managers of PCPs] always say, 'They're [the nurses and clerks] under a different leadership' … You [the teamlet] have to go through so many channels of approval and it has to be done at the very top, which is so hard. No change gets really effected in any significant manner." [PCP]

4. Discussion

Our findings align particularly well with Hackman's theory of leading teams which incorporates the idea that team bounded-ness and knowing you are on a team will impact team functioning.[9,15] Interpreting our findings in the context of this theory leads to the conclusion that if managers are to fill key roles in implementing innovations, they need to be considered part of the team.

Recent literature on PACT implementation has pointed out the importance of leadership (both clinic and institutional level-leadership) as a key element for PACT success.[8] In this analysis, we highlight the variability of perceived management over daily teamlet functioning. Specifically, teamlet members' direct managers are much more involved in daily team functioning than any current published version of the PACT model would suggest. Having identified at least five roles middle managers currently assume demonstrates their involvement is critical to facilitating high functioning teamlets. A resultant recommendation is thus codifying the roles and responsibilities middle managers have in a model that acknowledges the central importance of their contribution to PCMH team functioning.

For instance, Birken and colleagues' theory relating to middle manager involvement indicates that they can improve the efficacy of implementation innovation, specifically in healthcare settings, by 1) diffusing information, 2) synthesizing information, 3) mediating between strategy and daily activities, and 4) selling innovation implementation.[14,15] Interpreting our findings in the context of Birkin's theory suggest that to facilitate teamlet functioning, managers must be able to take their understanding of elements critical to successful functioning and communicate or diffuse the information in a way that helps teamlet members gain a clear understanding of their roles and responsibilities as well as what is expected of them in terms of task accomplishment and timeline adherence. PACT managers need to have an overall understanding of goals to be accomplished and consider their managerial roles, including facilitation of day-to-day activities as well as conflict resolution, within and between disciplines, considering their staff member's capabilities and capacities.

When implementing a team-based model of primary care in a large clinic-based setting, it is important to take into consideration the disciplinary structure that is already in place. The concept of interdisciplinary team functioning likely diverges from a functionally organized health system, since the labor force is not siloed by discipline.[23] Decisions impacting team member roles, responsibilities, and activities are routinely made by discipline-specific management. PCPs rarely serve as direct managers of nurses and clerks. Instead, RNs and LVNs report to nurse managers and are under the nursing leadership, while clerical associates report to their managers and are under the administrative leadership. Our findings indicate that teamlet staff may benefit from having their roles defined by a singular PACT teamlet manager instead of by separate managers specific to individual member's discipline.

Our expanded understanding of the role of managers underscores the need for coordinated interdisciplinary leadership approaches to governing PCMH teams. Without interdisciplinary coordination at the leadership level, complications and conflicts between teamlet leads (i.e., PCPs) and extra-teamlet managers may arise and cause confusion and lack of role clarity in teamlet staff. Our findings lend support toward establishing specific roles for managers in the PACT model as well as provide guidance on how to implement these roles across a variety of settings.

5. Limitations

The interviews in this study were conducted in a subset of six practice sites in one VA healthcare system planning area. Though all six clinics were in Southern California, they do represent a range of environments including large medical centers and community based outpatient clinics. Also, the interviews were conducted over an 18-month period, with the practice sites being at varying phases of implementing the PACT model. This limited us from making between-site comparisons. Finally, future work in this area could also incorporate the perspectives of middle managers themselves as we were unable to do so. Our findings, however, are thorough in that they include the perspectives of professionals from multiple disciplines impacted by middle managers.

6. Conclusions

The important role that middle managers play in facilitating team functioning in PCMH models needs to be given more consideration in implementation strategies. The frontline staff implementing the PACT model described multiple ways in which their direct managers are essential to the functioning of PACT teamlets. Our results enumerate specific roles middle managers play in implementing PCMH models and highlight the problems that can result when there is a lack of interdisciplinary collaboration between these managers. Because managers are responsible for explaining and enforcing the specific responsibilities that frontline staff assume, it is important to invest in the training of not only primary care team members, but also managers. Our expanded understanding of the role of supervising middle managers in PACT team functioning supports efforts to use interdisciplinary leadership approaches to governing primary care practices implementing team-based models. Future implementation efforts should consider formally developing mechanisms for interdisciplinary collaboration among managers from all disciplines involved.

Authors' contributions

Each author (K.F.G., H.R., A.K.H., A.B.H., L.K., S.E.S., J.N., E.M.Y., L.V.R.) made significant contributions to this article includidng conceptualizing and designing the study, collecting, analyzing, and interpreting the data, and finally organizing, drafting, and revising the manuscript for submission.

Conflict of interest statement

All authors have reported that they have no conflicts of interest.

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