What Do Patient-Centered Medical Home (PCMH) Teams Need to Improve Care for Primary Care Patients with Complex Needs?

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ABSTRACT:

BACKGROUND: Intensive primary care (IPC) programs for patients with complex needs do not generate cost savings in most settings. Strengthening existing patient-centered medical homes (PCMH) to address the needs of these patients in primary care is a potential high-value alternative.

OBJECTIVES: Explore PCMH team functioning and characteristics that may impact their ability to perform IPC tasks; identify the IPC components that could be incorporated into PCMH teams' workflow; and identify additional resources, trainings, and staff needed to better manage patients with complex needs in primary care.

METHODS: We interviewed 44 primary care leaders, PCMH team members (providers, nurses, social workers), and IPC program leaders at 5 VA IPC sites and analyzed a priori themes using a matrix analysis approach.

RESULTS: Higher-functioning PCMH teams were described as already performing most IPC tasks, including panel management and care coordination. All sites reported that PCMH teams had the knowledge and skills to perform IPC tasks, but not with the same intensity as specialized IPC teams. Home visits/assessments and co-attending appointments were perceived as not feasible to perform. Key stakeholders identified 6 categories of supports and capabilities that PCMH teams would need to better manage complex patients, with care coordination/management and fully staffed teams as the most frequently mentioned. Many thought that PCMH teams could make better use of existing VA and non-VA resources, but might need training in identifying and using those resources.

CONCLUSIONS: PCMH teams can potentially offer certain clinic-based services associated with IPC programs, but tasks that are time intensive or require physical absence from clinic might require collaboration with community service providers and better use of internal and external healthcare system resources. Future studies should explore the feasibility of PCMH adoption of IPC tasks and the impact on patient outcomes.

KEY WORDS: patient-centered medical home; intensive primary care; qualitative interviews.

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BACKGROUND

Despite their growing popularity, some research shows that intensive primary care (IPC) programs for patients with complex needs may not generate cost savings.[1–4] IPC programs vary in terms of patient population targeted, services provided, care team composition, and care delivery mode, but generally aim to improve care and reduce costs for the most complex, resource-intensive patients.[5,6] Typical program components include intensive case management by interdisciplinary teams, comprehensive assessments, home visits, care transition management, pharmaceutical services, health coaching, advanced care planning, and caregiver support.[7,8] Evidence for IPC program effectiveness for lowering inappropriate acute care utilization and improving quality is mixed.[9–13] Given the varied evidence for IPC cost savings and effectiveness, healthcare systems may be reluctant to invest in new, resource-intensive programs to improve care for these patients.

Providing enhanced resources and training to existing primary care teams, such as patient-centered medical homes (PCMH), to better manage these patients may be a less costly alternative to investing in IPC programs. PCMH aims to provide patient-centered, comprehensive team-based care that is coordinated across the healthcare system and with links to community social services, improving access, quality, and patient experience.[14] Although PCMH teams vary in composition and roles performed by team members,[15] they have many of the key features described in literature on successful

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IPC programs, including multidisciplinary teams with care managers trained in disease management.[9,16,17] Furthermore, literature supports trusted relationships with care managers and other clinicians to improve health outcomes among complex patients.[18] Although PCMH teams may include a case manager with the skills to address patients with complex needs,[19,20] they may lack the knowledge, communication tools and processes necessary for intensive care management,[21] and sufficient resources for a dedicated case manager for these patients.[9,21] Additionally, with higher caseloads and less flexibility of time and team member roles, PCMH teams may have limited ability to perform some IPC program tasks.[22] PCMH teams may also experience difficulty with adding IPC tasks that require clinic workflow changes, new staff roles,[23] and integrating care managers.[21]

No studies thus far have described which IPC tasks could feasibly be performed by PCMH teams and what PCMH teams would need to perform these tasks. In this study, we analyzed qualitative interviews with PCMH team members, IPC program leaders, and facility primary care (PC) leaders at five Veterans Health Administration (VA) facilities with IPC programs to (1) explore how PCMH team functioning may impact their ability to perform IPC tasks, (2) identify which IPC tasks could be incorporated into PCMH teams' workflow, and (3) identify additional resources, trainings, and staff PCMH teams would need to better manage their patients with complex needs.

METHODS

For this study, we used qualitative data from semi-structured interviews with PCMH team members (PCPs, RNs, and social workers), facility PC leaders, and IPC program leaders. All authors of this manuscript attest that the activities that resulted in this manuscript were not conducted as part of a research project, but as part of a non-research evaluation conducted under the authority of the VA Office of Primary Care. Due to the agreement with participants that only the evaluation team would have access to their audio recordings and transcripts, only paraphrased or summarized data are available upon request from the first author.

Setting

Introduced in 2010, VA's PCMH model, called Patient Aligned Care Teams (PACT), emphasized continuity through team-based care, improved access, care management and coordination, and patient-centered communication.[24] The "teamlet" staffing model includes one full-time equivalent each of a primary care provider (PCP), registered nurse (RN), licensed practical nurse (LPN), and clerk per continuity panel of 1200 patients. VA's PCMH also includes social workers, behavioral health providers, pharmacists, health coaches, and other extended team members to support several core "teamlets."[24] Implementation has been variable,[25] with some evidence indicating an association between greater fidelity to PCMH core components and better chronic disease management outcomes.[19]

PACT Intensive Management Program

Data are from the evaluation of the PACT Intensive Management (PIM) demonstration, which has been described in detail elsewhere.[8,26] PIM was a VA five-site IPC demonstration in 2015–2018. The IPC models at four sites augmented PCMH with an interdisciplinary IPC team, while the fifth site replaced PCMH with the IPC team for participating patients. Team composition varied, but generally included a part-time physician lead, full-time RN and/or nurse practitioner (NP), social worker, and mental health provider. Components included chronic disease management, comprehensive patient assessment and evaluation, care and case management, transitional care support, preventive home visits, pharmaceutical services (including medication management), chronic disease self-management, caregiver support services, health coaching, and advanced care planning.[8] PCMH teams at these sites may also have performed chronic disease management and self-management, care/case management, pharmaceutical services, and health coaching, but with lower intensity.

Sampling and Recruitment

We used stratified quota sampling to select PCMH team members by role, sampling from a list of PCMH teams with IPC patients, with a target quota of two PCPs, two RNs, and one social worker per site. We also selected 2–4 facility-level and mid-level PC leaders to participate based on a list of PC and nursing leaders that were involved in IPC program implementation (from study administrative records or nominated by IPC program leaders). For one IPC site with more than 4 identified PC leaders, we randomly selected 4 leaders. We interviewed all IPC program leaders, most of whom were also facility or mid-level PC leaders and were known from study records and their participation in the evaluation. We emailed the initial invitation to participants, followed by a telephone call approximately 3–5 days later, and after that instant messaging, with a maximum of 3 follow-up attempts.

Data Collection

Participants were interviewed by telephone in 2017 (PCMH team members) and 2018 (PC and IPC leaders). Interviews were approximately 20–30 min (to minimize clinical disruption) for PCMH team members and 60–90 min for PC and IPC program leaders. Interviews were audio-recorded and professionally transcribed. We asked participants to describe PCMH team functioning at their sites, which IPC tasks PCMH teams could feasibly perform, and what resources, trainings, or staffing PCMH teams would need to better manage their patients with complex needs. Question wording varied slightly

Table 1 Key Stakeholder Sample and Response Rate

	Total	PCMH PCP	PCMH RN	PCMH SW	PC leaders	IPC leaders
Invited to participate	56	16	14	5	15	6
Ineligible	1	0	1	0	0	0
Refused/no response	9	8	0	0	1	0
Unable to contact	2	0	2	0	0	0
Completed interview	44	8	11	5	14	6
Response rate (complete/(invited – ineligible + unable to contact))	83%	50.0%	92%	100%	93%	100%

depending on key stakeholder group corresponding with their roles and relationships with the IPC team (see Supplemental Table 1). The response rate was 83% (Table 1).

Analysis

We used Atlas.ti[27] to code and analyze the qualitative interview data. The lead author developed an initial codebook based on the interview guide and preliminary data analysis for formative feedback to pilot sites. A second analyst and the lead author tested and revised the codebook definitions by coding 3 interviews each, comparing and discussing coding. The lead author then coded all the interviews, and the second analyst reviewed the coding.

We analyzed the data to summarize key stakeholders' perspectives of 3 main a priori themes determined by the interview topics: How do key stakeholders' perceptions of PCMH team functioning at their site shape their views of PCMH teams' ability to perform intensive primary care? Which components of IPC programs would be feasible for PCMH teams to perform? What tools, resources, and training would PMCH teams need to improve care management for their most complex patients? We generated Atlas.ti reports for the codes pertaining to these three themes. We used these reports with a matrix analysis approach to compare experiences across sites and key stakeholders.[28] Specifically, an analyst abstracted or paraphrased quotes from the code reports into an Excel spreadsheet, which were then checked against the original transcripts by a different analyst. Within the 3 main themes, the lead author summarized common subthemes described across all sites and key stakeholder groups, which a second analyst then reviewed and confirmed. We compared responses between stakeholder groups (PCMH members, facility leaders, and IPC program leaders) and sites, but found no clear differences by group or site. While rare, any disagreements among analysts about codes, coding applications, and derivation of subthemes were resolved through discussion.[29]

RESULTS

Table 1 shows the distribution of participants by key stakeholder role. Study key stakeholders felt that PCMH teams may be able to perform most clinic-based IPC tasks; however, team functioning would influence their ability to perform IPC tasks. Time-intensive tasks or tasks requiring physical absence from clinic were perceived as less feasible. Key stakeholders also identified six categories of supports or capabilities PCMH teams need to perform IPC tasks.

Team Functioning May Impact PCMH Teams' Ability to Perform IPC Tasks

Some key stakeholders linked the ability to perform IPC tasks with team functioning, as characterized by key stakeholders in Table 2. As one PC leader described:

> "High functioning [PCMH] teams huddle. They communicate well. They delegate tasks well. They are aware of all the other things that can be done, other avenues, referrals, what all the different services do….present [themselves] to the patient as a team and not as individuals who happen to work together."

Several key stakeholders across sites noted that staffing shortages contributed to the inability to work at "top of license" and perform panel management and care coordination tasks.

Table 2 Descriptions of High-Functioning and Low-Functioning PCMH Teams

High-functioning (ratings of 9–10 on 10-point scale)	•Strong patient advocates •Team helps break down barriers for patients •Conflict resolution •Relationship building •Adequately staffed for clinic demands •Nurses performing panel management and care coordination •Team members valuing, respecting, supporting each other	•Collaborative teams •Huddle and communicate well with team members •Delegate tasks •Present themselves as a team to the patient •Nurses call patients re: appointment reminders
Moderate- and lower-functioning (ratings of 6–8)	•Staffing shortages •Challenges with panel management and care coordination •Team requires training in mental health and behavioral issues	•Competing tasks •Staff unable to work at top of license •Nurses not co-located with providers •Team requires training in PCMH principles

PCMH Teams May Be Able to Perform Most Clinic-Based IPC Tasks, but Time-Intensive Tasks or Tasks Requiring Physical Absence from Clinic Were Perceived as Less Feasible

Many key stakeholders thought that PCMH teams were already doing all or most IPC tasks, or could perform most clinic-based aspects of IPC. Several mentioned that with much larger panels than IPC teams, PCMH teams could not provide the same level of intensity or availability (e.g., less frequent check-ins/calls with patients, not being able to call patients back right away). As one RN described:

> "I already do many of these things with my patients . . . We do engagement, advocacy, etc., but I can't always be the navigator for someone who needs this level of intensity. I can't follow-up with the patients, unless the patients are proactive (responds, picks up the phone, follows up, initiates contact)."

Table 3 contains a list of specific IPC tasks mentioned as feasible and not feasible for PCMH teams to perform. A few key stakeholders did not think that PCMH teams could perform time-intensive or time-sensitive IPC tasks, such as creating individualized care plans, intensive chart review/assessment, quick responses to phone calls, engaging families/caregivers, engaging hard-to-reach patients such as those who are homeless or cognitively impaired, and identifying community resources. Tasks requiring physical absence from clinic (e.g., home visits and accompanying patients to visits with other healthcare providers) were perceived as not feasible. As one social worker said, "the home visits are so helpful but I just can't imagine a way that the [PCMH] social worker could be gone the whole day, or the [PCMH] RN."

Table 3 Key Stakeholder Perspectives of IPC Tasks that PCMH Teams Could Perform

Tasks PCMH teams could perform	•Answering/returning phone calls •Care coordination •Virtual in-home assessments •Supporting patients during care transitions •Patient/caregiver education •Medication reconciliation •Intensive follow-up •Case management •Relationship building with patients and caregivers •Medication management	•Psychosocial support •Panel management •Interdisciplinary teamwork •Huddles •Complex case conference •Use existing tools for neurocognitive/memory issues •Intensively manage small panels of patients •Referrals to community services
Tasks PCMH teams could *not* perform	•Home visits •Co-attending appointments with other clinicians •Same level of intensity [as IPC teams] • "Being on top of appointments" • "Being on top of medications" •Identifying community resources	•Engaging hard-to-reach patients (e.g., homeless; cognitively impaired) •Services outside the outpatient setting •Respond quickly to patient calls •Individualized care plans •Quicker access to care •In-depth assessments or chart reviews •Intensive case management

Some key stakeholders gave examples of how PCMH teams could perform specific IPC tasks. For example, they could collaborate more closely with integrated mental health and the PCMH social workers for patients with intense psychosocial needs, and with home-based primary care and pharmacy for medication management. In addition, the team huddle could be used as an expanded interdisciplinary team meeting or mini-case conference by inviting social work, pharmacy, and behavioral health to discuss specific patients. Virtual in-home assessments could be performed by PCMH RN care managers or social workers with VA's newly enhanced video-visit capabilities.

Six Categories of Supports or Capabilities PCMH Teams Need to Perform IPC Tasks

Key stakeholders identified six categories of supports or capabilities that PCMH teams would need to provide better care for patients with complex needs: (1) fully staffed PCMH teams or additional staffing; (2) RN-led panel management and care coordination; (3) training; (4) better use of existing resources (VA and non-VA), (5) additional specific resources or services; and (6) more time or smaller panels (see Table 4).

A majority said that PCMH teams would need full staffing (PCP, RN care manager, LPN, and clerk as well as behavioral health, pharmacy, and other ancillary services) or additional staff. Some also indicated that providers and staff working at "top of license" and who are flexible and willing to work with this population were needed:

> "We would need [PCMH] team members that were willing to go above and beyond. I just happen to have [PCMH] team members that will do anything. We would need willing participants to do this kind of more intensive management." (PCMH PCP)

Many key stakeholders identified better panel management and care coordination performed by RNs and supports for those tasks as important for caring for patients with complex needs. PCMH staffing shortages and not working at top of license contribute to less than optimal panel management and care coordination, as one PC nurse leader described:

> "We just went over the chronic care management guidelines that [Office of Nursing Services] sent out and I think our RNs do very little of that because

Table 4 Supports or Capabilities Key Stakeholders Thought PCMH Teams Would Need to Perform IPC Tasks

Fully staffed PCMH teams/ additional staffing	•Fully staffed teams •Stable teams •More staff •Providers •Nurse practitioners •Registered nurses •Social workers •Specialized teams •Case managers •Inpatient nurse practitioners for care transitions/discharge planning • "Staff who are flexible" • "Willing to do the work"	•Specialists/ technicians in homelessness, substance abuse •Staff (intermediate care technicians, social workers, psychologists) for co-attending appointments with other clinicians •Peer support for navigation •Psychologist •Providers and staff practicing at top of license •Facilitator to help teams with data on their patients
Panel management/ care coordination	•Individual patient data/measures/goals •Expectation [from leaders] that PCMH teams will do care coordination •More frequent monitoring and follow-up	•Interdisciplinary team meetings •Dedicated time for panel management, care coordination, team meetings •Better care coordination with community
Training	•PCMH roles and responsibilities •Panel management •Treatment and engagement methods for complex patients	•Available resources, including community •Boundary setting with patients •Personality disorders
Better use of existing resources (VA and non-VA)	•Data and performance measures for panel management •Space utilization	•Available tools and resources in VA and community settings
Additional specific resources/ services/ capacities	•Flexibility to meet patients outside the office setting •Someone to drive patients to appointments •Expanded telehealth capacity/telehealth RNs •Ability to offer same-day appointments	•Ability to do home visits or use community resources for home safety evaluation •Ability to transfer calls from specific patients directly to PCMH teams (e.g., not routed through a call center)
More time/ smaller panels	•Smaller panels •More time	•More efficient workflows

they're so busy doing everyone else's job. Then the PCPs are doing everybody else's job, too."

Many key stakeholders also thought PCMH teams could use existing care management tools and resources but would need more training in identifying and using them. As one PC lead physician expressed, "... to get the tools disseminated to everybody and to teach everybody how to use it—I need a trainer here that will work with all of the teams."

DISCUSSION

This qualitative evaluation using interviews with PCMH team members and IPC and PC leaders suggests that PCMH teams characterized as "well-staffed" and/or high-functioning are able to incorporate key panel management and care coordination strategies for patients with complex needs. Most key stakeholders thought that PCMH teams had the knowledge and skills to perform IPC tasks, but home visits/assessments and co-attending appointments with patients were perceived as not feasible for them to perform. A few key stakeholders thought IPC tasks could be performed by PMCH teams but with less intensity and using existing resources. Our key stakeholders also identified 6 categories of supports or capabilities that PCMH teams would need to better manage care for their patients with complex needs, with fully staffed PCMH teams and better panel management and care coordination as the most frequently mentioned. Many thought that PCMH teams could make better use of existing VA and non-VA resources and services, but would need more training in identifying and using resources specific to this patient population.

Our results confirm and expand on literature regarding barriers and facilitators to successfully managing patients with complex needs in primary care. Barriers to implementing care coordination for these patients—a key IPC task—are well documented in the literature and include misaligned financial incentives,[9,23,30–32] lack of information and communication systems,[21] and lack of appropriate data and decision-making tools.[23,32,33] These barriers were not identified by our key stakeholders as impediments, and may be less common in VA because it is a large integrated healthcare system with two important features of successful IPC programs[16,34]—a well-established electronic health record (EHR) that facilitates communication among VA healthcare team members and data for identifying complex patients for panel management.[35]

Successful IPC programs usually consist of teams centered around a care manager and include social workers and behavioral health.[16] VA's PCMH model similarly centers around an RN care manager, equipped with dashboards and other care management tools embedded in the EHR.[24] VA's PCMH also includes social workers and behavioral health providers to assist with care management for patients with complex needs. A majority of key stakeholders in our study emphasized the importance of RNs performing care coordination and care management and full staffing for PCMH teams to perform IPC tasks. As has been found in previous studies,[17,31] a few of our key stakeholders also mentioned the importance of role flexibility and staff that are willing to perform IPC tasks, suggesting that some adaptations to standardized PCMH roles could enhance the team's ability to care for patients with complex needs. Other recent studies suggest that clinical pharmacy specialists, who are also included in VA's PCMH as extended team members, could also play a bigger role in care management by performing medication reconciliation, taking over chronic disease management of complex patients, and performing other care coordination tasks.[36–38]

Our results suggest that PCMH teams in large integrated healthcare systems may be well suited to perform IPC tasks that overlap with tasks they already perform, but may not be

able to take on the additional workload needed to intensively manage these patients. With full staffing and additional training in use of existing resources (such as panel management tools within the EHR and community resources for various patient needs), PCMH teams might be a more cost-effective approach to managing patients with complex needs, but more research is necessary to establish this. Other essential non-clinic-based IPC tasks, such as home visits and safety assessments, may be possible with better use of and collaboration with community programs and services.[17,31] The VA has recently implemented several virtual care modalities which are beginning to expand access for all patients to primary care and specialty providers.[39] Virtual modalities might facilitate more frequent follow-up with patients with complex needs and could be used for virtual home visits. In addition, implementation of the MISSION Act might facilitate increased collaboration between VA and community services that could improve care for these patients (such as home visit services).[17] These resources could also improve primary care teams' ability to manage their workload and free up more time to focus on patients with complex needs.

Our study had some limitations. The study was conducted within five VA facilities, and the results may not be applicable to other healthcare systems or all VA facilities, but may be relevant to other large, integrated healthcare systems with EHR and team-based primary care. Key stakeholders varied in terms of how much interaction they had with IPC teams, and those with less interaction may have less knowledge of IPC components and what services IPC teams provided for patients. Our semi-structured interviews did not systematically ask key stakeholders about whether specific IPC components could be provided by PCMH teams, and thus, we cannot draw any conclusions based on the frequency with which specific components were mentioned. Our data also do not permit investigation of the association between IPC task performance and patient outcomes, and thus, we cannot draw any conclusions about which IPC tasks are most important for improving care for patients with complex needs.

These limitations are balanced by several study strengths. This is the first study to explore qualitatively which IPC components PCMH teams could feasibly perform and what additional supports, resources, or training they might need to improve care for patients with complex needs. Our rich qualitative data provided specific examples of how PCMH teams might perform some IPC tasks with available staffing and resources, and suggested interventions to provide IPC in PCMH settings (for example, collaboration with community services to provide home visits or conducting virtual home visits).

CONCLUSIONS

Use of existing PCMH teams to perform clinic-based IPC tasks for patients with complex needs may be a less costly alternative to establishing separate IPC programs in primary care. PCMH teams, however, need staff with the time and ability to perform these tasks, and training in use of existing tools and resources to optimally manage patients with complex needs. PCMH teams are less well suited for IPC services such as home visits and co-attending appointments, but these services could be provided through collaboration with community service providers and better use of internal and external healthcare system resources. Future studies should explore the feasibility of PCMH adoption of IPC tasks and the impact on patient outcomes.

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