ORIGINAL RESEARCH

Strategies for Addressing the Challenges of Patient-Centered Medical Home Implementation: Lessons from Oregon

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Background: **Patient-centered medical homes (PCMHs) are at the forefront of the transformation of primary care as part of health systems reform. Despite robust literature describing implementation challenges, few studies describe strategies being used to overcome these challenges. This article addresses this gap through observations of exemplary PCMHs in Oregon, where the Oregon Health Authority supports and recognizes Patient-Centered Primary Care Homes (PCPCH).**

Methods: **Twenty exemplary PCPCHs were selected using program scores, with considerations for diversity in clinic characteristics. Between 2015 and 2016, semistructured interviews and focus groups were completed with 85 key informants.**

Results: **Clinics reported similar challenges implementing the PCPCH model, including shifting patterns of care use, fidelity to the PCPCH model, and refining care processes. The following ten implementation strategies emerged: expanding access through care teams, preventing unnecessary emergency department visits through patient outreach, improved communication and referral tracking with outside providers, prioritization of selected program metrics, implementing patient-centered practices, developing continuous improvement capacity through committees and "champions," incorporating preventive services and chronic disease management, standardization of workflows, customizing electronic health records, and integration of mental health.**

Conclusion: **Clinic leaders benefited from understanding the local context in which they were operating. Despite differences in size, ownership, geography, and population, all clinic leaders were observed to be proponents of strategies commonly associated with a "learning organization": systems thinking, personal mastery, mental models, shared vision, and team. Clinics can draw on their own characteristics, use state resources, and look to established PCMHs to build the evidence base for implementation in primary care. (J Am Board Fam Med 2018;31:334–341.)**

Keywords: **Chronic Disease, Emergency Departments, Focus Groups, Mental Health, Oregon, Patient-Centered Care, Primary Health Care, Referral, Workflow**

Current efforts in health systems reform are driving primary care to become more patient-centered, with patient-centered medical homes (PCMH) central to this transformation. PCMHs innovate to improve patient health and wellbeing at both the individual and population levels while reducing organizational-level costs to accomplish the Triple Aim.[1–2] A robust literature describes the effects PCMH implementation has had on outcomes, service use, and costs.[3–11] There is also substantial literature that discusses implementation, systemic, and policy-level challenges that clinics face when transforming to a PCMH, as well as the organizational characteristics neces-

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Table 1. Core Attributes of the Patient-Centered Primary Care Home Program[11]

Core Attribute	Description
Access	Patients get the care they need when they need it
Accountability	Clinics are responsible for making sure patients receive the best possible care
Comprehensive, whole-person care	Clinics provide patients all the care, information, and services they need
Continuity	Clinics work with patients and their community to improve patient and population health outcomes over time
Coordination and integration	Clinics help patients navigate the system to meet their needs in a safe and timely way
Patient and family centered	Patients are the most important members of the health care team and are ultimately responsible for their overall health and wellness

sary for a successful transformation.[12–17] Yet, few studies describe strategies that clinic leadership can use to overcome the challenges of PCMH implementation and successfully transform to a patient-centered approach.

This article seeks to fill this gap in the literature by describing the results of an in-depth exploratory study of exemplary PCMH clinics in Oregon. In 2009, the Oregon Legislature created a local version of the PCMH called the Patient-Centered Primary Care Home (PCPCH).[11] This program, overseen by the Oregon Health Authority (OHA), is structured around 6 core attributes (Table 1), each of which includes numerous standards, metrics, and practices to which clinics attest through a formal application and recognition process. At the time of this study, recognized PCPCHs were assigned to 1 of 3 tiers based on the number of standards and metrics they met; tier 3 was the highest level of recognition.[11] In 2017, OHA established a 5-tier system, with tier 5 as the highest level of recognition.[18]

Methods

The OHA contracted with a research team from the Oregon Health and Science University and Portland State University School of Public Health from 2014 to 2016 to study the characteristics and process improvement activities of exemplary PCPCH clinics. The research team used a modified Success Case Method, a common evaluation strategy that "searches out and surfaces successes, bringing them to light in persuasive and compelling stories so that they can be weighed (are they good enough?), provided as motivating and concrete examples to others, and learned from so that we have a better understanding of why things worked, and why they did not."[19]

Thirty clinics were invited to participate on the basis of PCPCH program scores, diversity in clinic geography, urbanicity, size, and ownership.[11] The final study population consisted of 20 exemplary clinics who agreed to participate (ie, success cases). The selected clinics' characteristics are described in Table 2. Because lower PCPCH scores reflect lower levels of practice transformation rather than implementation failure, the sample included no "nonsuccess cases" for comparison. Similarly, the absence of the PCPCH designation is not necessarily an indication that a primary care practice has not successfully adopted elements of the medical home model. PCPCH program staff provided con-

Table 2. Characteristics and Numbers of Selected Clinics

Geography		Size (Full-Time Equivalent, FTE)		Ownership/Affiliation		Practice Specialty		Region	
Rural	5	≤2 FTE primary practitioners	1	Independent and unaffiliated with any other clinics	12	Family Medicine	14*	Columbia Willamette	11
Urban small	4	3 to 5 FTE primary practitioners	4	Independent and part of an alliance of clinics	1	Internal Medicine	3*	Cascades East	2
Urban medium	6	6 to 9 FTE primary practitioners	5	Owned by a larger health system	7	Pediatric	4	Oregon Pacific	6
Urban large	5	≥10 FTE primary practitioners	10					Northeast Oregon	1

*One clinic specialized in both family medicine and internal medicine.

Table 3. Strategies in Response to Common Implementation Challenges

Key Challenge	Strategy
Shifting patterns of care use	• Expanding access through teams, schedules, and staffing
	• Preventing unnecessary emergency department visits through patient outreach and emergency department information exchange
	• Ensuring care with outside providers through improved communication and referral tracking
Fidelity to the PCPCH model	• Prioritization of select standards and metrics
	• Implementing patient-centered practices including bilingual/bicultural staff, cultural competency training, and new population demographic metrics
	• Developing new continuous improvement capacity through committees, training, and clinic "champions"
Refining care processes	• Incorporating screenings, preventive services, and chronic disease management
	• Standardization of workflows
	• Customizing electronic health records for communication and reporting
	• Integration of mental health

PCPCH, patient-centered primary care homes.

textual information to guide participant selection. The clinics' scores on PCPCH program attributes were comparable to or surpassed the top quartile of all PCPCH-designated clinics in Oregon, affirming their status as "exemplary" implementers of the PCPCH model.

Semistructured interviews and focus groups were completed during visits to each clinic in 2015 and 2016. At a minimum, each clinic's lead clinician and senior administrator(s) were independently interviewed (41 interviews in total), and 37 staff and providers additionally participated in optional focus groups at 10 of the 20 clinics. All interviews were de-identified and transcribed. A codebook was developed on the basis of a synthesis of literature on PCMH implementation and emergent themes from initial review of interview and focus group transcripts. Each transcript was independently coded by 2 research assistants and reconciled by a third researcher by using Atlas.ti 7.0 software (Scientific Software Development Gmbh, Berlin, Germany). The research team identified emergent themes through review, discussion and consensus.

Results

The study clinics all reported similar challenges in implementing the PCPCH model, especially with regard to shifting use of care, fidelity to the PCPCH model, and the model's implications for refining care processes. Despite their shared status as exemplary PCPCHs, clinic leaders met these similar challenges with different sets of strategies. Ten themes regarding clinic strategy emerged across these three areas and are summarized in Table 3.

Shifting Patterns of Care Use

Clinic leaders reported challenges in providing patients access to the care they needed when they needed it. This was particularly evident in three components of PCPCH implementation goals: expanding access to clinic services, preventing unnecessary emergency department (ED) visits, and ensuring patients receive timely care from external providers.

Expanding Access to Care

Clinics were challenged to ensure that patients had provider continuity while also maintaining maximum flexibility for access. To address this challenge, clinics used team-based care. There was no consensus on how to best implement a team other than it needed to work for the individual clinic. Some clinics paired physicians with mid-level providers, others designated one provider to cover another provider's patients if they were unavailable, and some incorporated care coordinators and medical assistants (MAs) in teams instead of stand-alone positions. The electronic health records (EHR) served as a "hub" for team communication, facilitating quicker and more detailed communication about patients' care.

To meet PCPCH metrics and accommodate the increase in patient population due to Medicaid expansion, clinics expanded their hours beyond the typical 9 to 5 work week to include 12-hour days

and weekend hours. Clinics staggered staff schedules or hired part-time clinicians to ensure that the clinic was adequately staffed during all open hours. Some reported this as a challenge, as current staff often resisted the change. In some cases, clinics found it difficult to hire new staff who did not want positions with nontraditional hours. This became less of an issue over time.

PCPCH standards stipulate that clinics maintain a 24 hour/7 day access phone line for patients. Several clinics implemented a rotating schedule for clinicians to cover the phone line. In some cases, clinics hired a third-party answering service that referred calls to the provider as needed; however, this option was costly and unattainable for several clinics.

Another component of expanded access involved providing same day appointments. Clinics implemented this in many ways. Some allowed all patients to schedule same day appointments, whereas others allowed only those with urgent needs to schedule them. Some clinics blocked time in each provider's daily schedule and only opened that block of time when the day began to ensure they had openings; others ensured there was an on-call provider on duty.

To assist providers with the increased workload, MAs were encouraged to work to the top of their license (ie, the full extent of their education and training)[20] and perform screenings and vaccinations. In addition, many clinics provided alternatives to one-on-one in-person appointments for maintenance visits, such as group visits, emails through patient portals, and phone calls. However, providing emails and phone calls as alternatives remained a challenge, as clinics were not reimbursed for these activities under current payment models.

Preventing and Addressing Unnecessary ED Visits

Clinics found that patients had been using the ED for nonemergency needs. This was especially evident with patients who became covered through the Medicaid expansion and were not used to having a regular source of care and health insurance. To prevent unnecessary ED visits, clinics advertised their extended hours and 24 hour on-call phone lines through information pamphlets, lobby posters, and computer screen savers in patient rooms. Some PCPCHs partnered with community organizations to assist with transport or offer at-home visits to address the needs of patients who visited the ED because the ambulance was their only source of transportation.

Clinics with the technologic capacity to interface with the local hospital's EHR received real-time alerts when their patients were in the ED. If they received an alert and the situation did not warrant a hospital visit, the clinic contacted the patient and asked them to leave the ED and make an appointment with their provider. Clinics without this capacity had formal agreements with their hospital to contact the clinic if their patient arrived for nonemergency needs. In other cases, the clinic received a list of the patients who were seen in the ED the previous day. After an unnecessary visit, clinics contacted these patients via a follow-up call, sent a letter, or scheduled follow-up visits.

Ensuring Continuous Care with External Providers

Many clinics were concerned that patients were not receiving continuity of care outside of the clinic via their pharmacists, specialists, and hospitals. Interviewees noted that both patients and external providers were not clear on how information exchange worked. Patients often did not give information to their providers, assuming that if one specialist knew, all providers knew. Specialists also told clinics that they sent information via the EHR, not realizing that their EHR systems were incompatible. Clinics addressed these challenges by walking through all details with their patients, forming partnerships with specialists to facilitate referrals, and reminding both patients and specialists of the communication barriers. Many clinics provided medication reconciliation or pharmacy refills at their on-site pharmacy.

Clinics now recognize the importance of following through on referrals. Some interviewees reported additional challenges with specialists, and to a lesser degree, hospitals, neglecting to send patient records. This was less of an issue with hospitals, as many had EHR access or formal agreements with the clinics. However, if specialists systematically neglected to send patient records, some clinics tracked and flagged them and threatened to discontinue referrals.

As clinics began to track their patients' referrals to external providers, they realized how often patients did not follow through in making and attending an appointment. Some clinics were more proactive and took on the responsibility of scheduling

appointments for the patient. Clinics that referred their patients to specialists within the same health care organization found this easier than clinics that were not a part of a larger organization. Some clinics had discussions with their patients on why they were not following through, and addressed external barriers, such as lack of transportation. Care coordinators developed partnerships with social and community organizations, or joined their mailing lists to stay current with services provided.

Fidelity to the PCPCH Model

Clinic leaders reported challenges in adhering to standards and metrics, incorporating patient-centered practices, and introducing and maintaining continuous improvement practices.

Meeting Mandatory and Recommended Standards and Metrics

PCPCH recognition requires that clinics meet various metrics and be evaluated against multiple standards. Clinic staff stated that standards and metrics were beneficial, as they highlighted the clinic's strengths and challenges, but there was considerable initial skepticism and resentment, leading to staff turnover. The most frequently cited reason for resistance was the perceived implication that, if the clinic was not previously collecting and using data systematically, then the clinic was not providing adequate patient care.

Clinics used data collection, reporting, and use to meet PCPCH metrics and improve individual and population care. Although most staff were supportive of increased reliance on data, the data collection burden often exceeded staff capacity. To reduce the workload, some followed the mandatory metrics and those that were most meaningful to their clinic population, whereas others attempted to meet as many as possible. Providing patient-centered care while also making the time to document and measure outcomes was challenging, especially because shared decision-making tools were not easily incorporated with other documentation demands.

Implementing Person-Centered Practices

Staff often referred to themselves as patient- or person-centered, but were challenged when implementing a patient-centered lens that supported shared decision making. For example, clinic leaders believed it was important to reach out to patients and explain the concept of PCPCH to them through "patient agreements," newsletters, or social media. Yet, they experienced difficulties in empowering patients with mental health crises, including substance use disorders, who were not able to take an active role in their care. Clinics were more aware of patient goals, especially as care coordinators took on a more prominent role in the health care team.

Culturally competent practices are a hallmark of patient-centered care, and most clinics had already implemented these practices before applying for PCPCH recognition. Many clinics provided services in multiple languages, addressing language and cultural barriers by hiring bilingual employees and employees with the same cultural identity as the patient population. Clinics were also attentive to patient demographics by including them in population metrics and tracking data for continuous improvement processes.

Continuous Improvement

Clinic leaders reported that in order for staff to be fully engaged, there needed to be clearly articulated goals to ensure that everyone understood what needed to be done, why it needed to be done, and who would do it. Clinics relied on a PCPCH champion to rally the rest of the clinic staff and initiate improvement initiatives. Some clinics created committees to lead improvement efforts, whereas others created multiple committees as different projects arose. Others initiated friendly competition among staff, which emphasized the importance of celebrating goal attainment while also recognizing staff for their successes.

To emphasize the importance of continuous improvement processes, many clinics closed for half or full days to work on improvement projects, including as many staff as possible. Interviewees reported that it was sometimes difficult to stay committed during improvement cycles that appeared long and tedious. Some clinic staff perceived that improvement processes, while necessary and beneficial, reduced time devoted to patient care and revenue-generating activities. Thus, it was imperative that staff comprehended why the clinic was undergoing changes.

Refining Care Processes

Providing the best care, information, and services that meet patient needs was a challenge, given the

frequent interruptions when helping patients navigate the health care system to achieve comprehensive, whole-person care.

Incorporating Screening, Prevention, and Disease Management Services

Many PCPCH metrics include screenings and discussions on health promotion and disease prevention. Another PCPCH standard requires creating care plans for high-risk patients, which frequently focused on chronic disease management. These care plans help patients understand and better manage their illnesses, ultimately reducing costs. However, many respondents observed that these care plans were not helpful for all high-risk patients and neglected some patients who were in danger of becoming high-risk. In those situations, clinics chafed under this requirement, and providers preferred to implement care plans on a case-by-case basis instead of following a standard protocol.

Standardizing Workflows

More screenings happened during visits, whereas discussions on disease prevention and health promotion were occurring before, during, and after patient visits. Care coordination was also standardized, including the facilitation of the post-visit transition to specialists, pharmacies, and community resources. Some clinics that also had on-site pharmacies standardized recurring refill protocols so that all patients knew when to expect their medications to be ready for pickup. The inclusion of more screenings and discussions led to the standardization of the previsit process. MAs scrubbed charts, called patients to establish visit goals, and double-checked provider schedules to confirm that there was adequate time for complex visits. Because these protocols were additional to other tasks that MAs had assumed, many were overwhelmed and came in on days off or worked unpaid hours to catch up. Clinic leaders cited financial burden as the reason for why they could not offer a better solution.

Customizing EHRs for Communication and Reporting

In addition to communication, clinics could obtain data about a specific patient, a population, or the entire clinic through the EHR; however, minute data entry differences could render a search useless if it was unable to capture all relevant data. Clinics standardized data entry protocols; however, this did not address all issues of data analysis. EHRs did not provide tools for data analysis, so clinics purchased third-party analysis tools, used basic Excel spreadsheets, or used existing staff to conduct analyses. In some cases, a staff member emerged as a data expert, shifting their role into a data management and analysis position. For other clinics, the task was incorporated into each staff member's role in addition to their existing responsibilities. Clinic staff frequently requested funding for data management and analysis staff or tools.

Integrating Behavioral and Mental Health Care into Primary Care

Many clinics did not distinguish between behavioral and mental health, but all recognized that this type of care was important and needed to be better integrated into primary care. Before PCPCH implementation, most clinic staff felt uneasy addressing behavioral and mental health needs due to a lack of resources, or lack of knowledge of resources to provide care. To combat their uneasiness, some clinics partnered with local mental health clinics to facilitate reliable referrals, which made providers more comfortable in addressing their patients' needs. Some clinics received grants to integrate behavioral specialists on-site. Some used a behaviorist for on-call assistance when a patient presented with a need, whereas other clinics used behaviorists on a regular basis for patients with complex needs to assist them with navigating the health care and social services systems. When special grants expired, clinics were often unable to retain the behaviorists, but indicated that the experience provided them with the tools to better integrate mental health services.

Discussion

Exemplary PCPCHs used a variety of strategies to overcome challenges throughout the implementation process. Some strategies drew on existing strengths embedded in the clinic's characteristics, whereas others required more education, time, persistence, and experimentation. Occasionally, challenges emerged that could not be resolved at the clinic level. These challenges revolved around workforce and funding issues, which are outside the scope of this article and need to be addressed at the system- or policy-level.

Before and during the recognition process, clinics could access practice coaches and on-line technical assistance resources through the PCPCH program. A public-private partnership among OHA, local foundations, and nonprofit organizations created the Patient Centered Primary Care Institute (PCPCI) to provide clinics with trainings, learning collaboratives, and online resources to help ensure successful transformation to the PCPCH model. Clinics credited both PCPCI and other learning collaboratives with offering support, education, and a network of similarly minded clinics interested in improving health care. PCPCI recently published a series of technical "tip sheets" (derived from this research project) on a variety of topics that include strategies for aspiring PCPCHs but also illustrate the importance of providing patient-centered care.[21] These tip sheets are accessible to any clinic interested in transforming into a PCMH.

Although this study did not aim to test the relevance of Peter Senge's learning organization model for PCPCH transformation, the framework is a useful heuristic tool for contextualizing these observations, because clinic leaders seem to have embraced and championed the so-called "disciplines" of a learning organization.[22] That is, despite their differences in organizational size, ownership, geography, and patient mix, each clinic and its leaders seemed to exhibit a proclivity toward systems thinking, a value for learning and continuous self-improvement, critical examination of their assumptions about how things should work, cultivating a shared vision for the provision of care, and a dedication to team learning. Finally, it is worth noting that the approach to this study does not allow for drawing conclusions about the extent to which the clinic strategies described here are causally related to success with implementing the PCPCH model. It is likely that many factors influence successful practice transformation, and as such, we have limited our discussion to strategies that can shed light on some of the mechanisms by which transformation may be achieved.

Conclusion

States across the country have established medical home programs with their own metrics and standards for recognition and will continue to do so. Although the metrics and standards themselves may be different, primary care clinics face similar challenges with implementation of this new model of care. These challenges include an unprepared workforce, insufficient financial incentives, complex patient populations, a complex health care system, barriers to building organizational capacity, and technologic issues. It behooves clinic leaders to help prepare their staff for these challenges while recognizing that the transformation process is long and considerable investment of resources is necessary at the beginning of implementation.

As the results of this study have demonstrated, PCMHs can find ways to successfully overcome implementation challenges regardless of geography, region, practice specialty, organizational affiliation, and size. They can draw on their own characteristics to build successful strategies. This research found that the clinics' context seems to matter; what works for one clinic may not be suitable for another, yet when given latitude, each clinic may adjust its practices to ensure they best fit the capabilities and needs of the clinic and its patient population.

As more clinics engage in the transformation to a medical home model, exemplary clinics can pave the way for new insights about medical homes and offer advice to beginners. Decision-makers at the state level may also find that providing resources to mitigate some of the challenges, including technical assistance, financial support, and grace periods for clinics that are finding their way, may prove helpful. Finally, the results of this study of exemplary clinics in Oregon demonstrate that clinic leaders who are seeking to transform their clinic to a PCMH may find value in adopting the mindset of a learning organization for success.[22] What is important above all else is the dedication to continuous learning through implementation.

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