Patient-Centered Medical Home Implementation in Indian Health Service Direct Service Facilities

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Preface

In 2008, the Indian Health Service (IHS) initiated its Improving Patient Care (IPC) initiative, in which IHS clinics received technical assistance to implement elements of the patient-centered medical home (PCMH) model of primary care. The IPC program targeted IHS direct service facilities and sought to improve the quality of care and health outcomes of patients receiving care in these facilities by expanding access, improving continuity of care, strengthening care management, and improving care coordination. Since 2008, numerous facilities have applied for and received PCMH recognition, while others are in the early stages of implementing the model. The IHS requested assistance from the Office of the Assistant Secretary for Planning and Evaluation (ASPE) to identify barriers that IHS facilities face on their path toward recognition, key lessons from the implementation experience of PCMH-recognized clinics, and possible strategies that may facilitate implementation of the model for facilities that are not yet PCMH-recognized. ASPE commissioned the RAND Corporation to conduct a study that included both a review of the literature to identify common PCMH implementation strategies and challenges and discussions with leaders of seven federally run IHS facilities that successfully obtained PCMH recognition to better understand their experiences. The study was conducted from July 2017 to September 2017. This report summarizes the results of that work.

Because we provide examples of implementation strategies that have been used successfully in PCMH-recognized facilities, these findings may be of primary interest to IHS facilities that have yet to receive PCMH recognition. Policymakers and organizations that provide technical assistance or advocate on behalf of practices that are implementing PCMH models may also find value from these insights.

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Summary

The Indian Health Service (IHS) provides comprehensive health care services to roughly 2.2 million American Indians and Alaska Natives (AI/ANs) from more than 567 federally recognized tribes across the United States.[1] The IHS delivery system comprises both federally run and tribally run facilities, as well as programs that provide services exclusively to AI/AN urban populations. While the IHS is responsible for providing comprehensive medical services, the focus of the care it delivers directly is primary care.[2]

Primary care practices across the United States are increasingly adopting patient-centered medical home (PCMH) models of primary care in an effort to provide care that is more accessible, team-based, coordinated, and patient-focused. In 2008, the IHS initiated its own PCMH initiative, Improving Patient Care (IPC), to improve the quality of care for AI/ANs that seek care in its clinics. As of May 2017, 17 IHS clinics have applied for and received PCMH recognition.

To better understand the kinds of strategies that are used by clinics both within and outside of the IHS to implement PCMH models, the Office of the Assistant Secretary for Planning and Evaluation (ASPE) commissioned the RAND Corporation to examine the peer-reviewed and gray literature and identify common implementation strategies and challenges (see Appendix A for the full literature review). The research team then held telephone discussions with representatives from seven IHS clinics that had received PCMH recognition as of July 2017. The discussions with clinic leaders sought to identify (1) how components of the PCMH model had been implemented at their clinic; (2) challenges associated with PCMH implementation; and (3) key lessons and recommendations that could benefit clinics that are not yet PCMH-recognized.

Chief executive officers (CEOs) from the seven clinics were invited to participate in two-hour telephone discussions with the RAND research team. CEOs were encouraged to invite administrative or clinical staff who were knowledgeable about the clinic's PCMH experience to join the discussion. All discussions were conducted between August 2017 and September 2017.

PCMH-Recognized Clinics Participating in the Study

Six of the seven clinics that participated in discussions provided detailed staffing information. These six clinics varied in size, reporting between 23 and 174 total full-time staff. All but one clinic used contracted staff to supplement vacant positions, and among those that did, the share ranged from 4 percent to 31 percent. Five of the six clinics reported that they currently empaneled their patients to primary care teams,[3] and the average number of patients empaneled to a care team ranged from 720 to more than 2,700 patients.

The decision to implement a medical home and pursue recognition among the seven clinics often stemmed from a desire to shift from a model of care that was defined by episodic

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[1] IHS, "About IHS," webpage, undated(a).

[2] Elayne J. Heisler, *The Indian Health Service (IHS): An Overview*, Washington, D.C.: Congressional Research Service, R43330, January 12, 2016.

[3] *Empanelment* is a term that indicates the assignment of a patient to a dedicated provider or care team for all of the patient's ongoing primary care needs.

relationships with patients who often sought care on a walk-in basis to a model that allowed deeper and more-continuous relationships between patients and their doctors. Improvements in efficiency, a desire to address patient complaints, and a desire to attract additional Medicaid enrollees were also cited as motivations.

All seven clinics received PCMH recognition through the Accreditation Association for Ambulatory Health Care (AAAHC) between 2009 and 2017. Respondents from multiple clinics noted that it was easier to pursue recognition through AAAHC relative to other programs, and many already had received ambulatory health care accreditation from the organization.

The majority of clinics reported a team-based approach to PCMH implementation in which teams were usually led by the CEO and included clinical directors, directors of nursing, and pharmacy and clinical support staff. CEOs often had the responsibility of communicating the vision and goals of the medical home to their staffs and attended regular meetings to provide ongoing reinforcement. Other clinics reported that their CEOs were less involved, primarily because of high turnover in that position. Many clinics reported that their implementation teams met on a weekly basis to maintain forward progress on multiple fronts. To promote communication within the clinic, implementation teams commonly provided updates on the status of various initiatives and their rationale during general staff meetings, and used these opportunities to obtain feedback from staff. Similarly, nearly all clinics reported some level of ongoing communication with tribal leadership and community members about changes to the clinic and to hear and respond to community concerns.

PCMH Implementation Strategies and Challenges

The seven clinics used a wide range of strategies to implement components of the medical home model, including expanding or retraining staff, shifting to team-based care, implementing empanelment, expanding access to the clinic, changing clinic space, using health information technology (IT), strengthening patient care processes, improving care coordination, and expanding quality measurement and improvement capabilities.

Expanding or Retraining Staff

Only a few clinics reported expanding their staff as part of their efforts to implement a medical home. Most clinics struggled with high rates of staff turnover and difficulty hiring new staff either because they were located in rural or remote locations or because of delays in IHS human resources (HR) processes. Because of these barriers, some clinics focused primarily on retraining existing staff for new roles required by the medical home. Other clinics used partnerships with universities or telemedicine to meet their staffing needs.

Shifting to Team-Based Care

Clinics reported a range of experiences in forming care teams and altering workflows that came with team-based, rather than physician-led care. Four key challenges included encouraging physicians to give up control over certain workflows, encouraging lower-level staff to perform more duties toward the top of their scope of license, establishing new workflows and protocols, and developing workarounds to address chronic staffing shortages. Overall, staff valued the shift to team-based care and patient care strategies often emerged from care teams, as well as from clinic leadership.

Implementing Empanelment

Empanelment—a system in which a patient is assigned to a primary care provider and care team that is responsible for managing the patient's ongoing care needs—was viewed as critical to establishing the "home" in the medical home for patients. Many clinics noted that implementing empanelment was not arduous, but in some cases, it did require careful attention and efforts to achieve buy-in among providers. For some clinics, however, staff shortages made it difficult or impossible to empanel patients.

Enhancing Access to Care

Each clinic pursued a range of strategies to improve access to care, usually in a way that addressed existing utilization patterns that the clinic hoped to change. The most common strategy was altering a clinic's scheduling system to allow for a greater share of same-day visits relative to previously scheduled appointments. Other clinics needed to reduce the stress on their urgent care settings by moving from a primarily walk-in system to one in which patients were encouraged to schedule appointments for their nonurgent primary care needs. Other common strategies designed to improve access were expanding a clinic's operating hours and implementing new systems to provide or arrange for after-hours care.

Changing Clinic Space

Most clinics described making changes to the physical layout of their clinic that helped to promote better interaction among staff and improve efficiency, including rearranging current space or building new facilities where care teams could work together in the same area. Other clinics described ongoing space constraints that prevented them from hiring new staff, implementing changes that might facilitate team-based care, or providing new space to support wellness or health education–related activities.

Using Health Information Technology

Clinics often noted that the transition to electronic health records preceded their medical home activities and that meaningful use requirements helped them to develop capabilities that were useful while implementing their medical home. Many clinics described iCare as an important tool in their efforts to better manage their patient panels, although many also noted that they had not yet begun to use the system to its fullest potential.[4]

Strengthening Patient Care Processes

To provide more patient-centered care, some clinics described efforts to better engage patients in developing care plans and setting goals, including collecting and integrating data on social determinants of health in care planning and finding novel ways of sharing patients' own health information with them during clinic visits. Other clinics sought training for their staff to better coach their patients on how to develop better self-management skills. However, many clinics mentioned that this was an area that needed additional attention.

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[4] iCare is an electronic tool that supports administrative and patient management. This tool allows practice staff to manage scheduling, develop patient care plans, oversee workflows, and monitor performance over time.

Improving Care Coordination

To improve care coordination, clinics described their use of huddles, referral tracking systems, and more-extensive use of care managers to follow up with patients after hospitalizations to monitor their status and needs. Some clinics mentioned that they had been using these and other strategies for many years, but IPC helped them begin to document these activities in a more consistent way.

Expanding Quality Measurement and Quality Improvement Capabilities

Several clinics described transitioning to a continuous quality improvement model in which staff were involved in the design and analysis of Plan-Do-Study-Act cycles, which helped to provide reinforcement of the objectives of PCMH-related practice changes.[5] To assess the effectiveness of their PCMH efforts, many clinics discussed using a range of metrics, such as "no-show" rates or cycle time metrics like "value-added time"—the amount of time that the patient spends with medical professionals during a clinic visit—in addition to Government Performance and Results Act (GPRA) quality measures, which they closely monitored.[6]

Lessons Learned and Recommendations for Clinics Pursuing PCMH Recognition

Despite differences in the strategies that each of the seven clinics pursued as part of efforts to implement and expand the medical homes, several key lessons emerged when reflecting on the clinics' collective experiences. Many of these same themes appear prominently in the PCMH literature.

1. **Strong executive leadership can speed PCMH implementation.** The CEOs that we engaged were truly visionary and successfully oversaw the implementation of major cultural and process changes, while ensuring that the needs of patients guided their efforts.
2. **A diverse and dedicated implementation team is essential.** Because all staff will be affected by the infrastructure and workflow changes that may be required to achieve PCMH recognition, a dedicated implementation team that spans multiple disciplines, that includes senior staff, and that works to secure buy-in among clinical staff can guide the effort to a successful result.
3. **Staff turnover can slow development of critical PCMH capabilities.** Frequent staff turnover can be disruptive—particularly for small practices. Staff shortages can limit a clinic's ability to expand access and restrict the use of both empanelment and multidisciplinary care teams. However, a dedicated implementation team that provides consistent messaging can help maintain forward progress.

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[5] Plan-Do-Study-Act (or PDSA) cycles test a change "by developing a plan to test the change (Plan), carrying out the test (Do), observing and learning from the consequences (Study), and determining what modifications should be made to the test (Act)." See Institute for Healthcare Improvement, "Tools: Plan-Do-Study-Act (PDSA) Worksheet," webpage, undated.

[6] Under the GPRA, IHS sites and Area Offices are required to submit data on a set of clinical and nonclinical performance measures on a quarterly basis to track performance relative to predefined targets. Nonclinical measures might include rates of hospital accreditation and infrastructure improvements. For more information, see IHS, "GPRA and Other National Reporting," webpage, undated(b).

4. **Consistent communication with staff and the community can secure buy-in and provide reinforcement over time.** Engaging staff early, sharing data, and communicating success stories can help encourage staff to pursue continuous process improvements. Working with tribal leaders and the broader community can also help secure buy-in for major changes, leverage the rich assets of the community, and build trust.

5. **IPC tools are valuable in charting a course of change.** The IPC self-assessments and Change Package were viewed favorably; however, the level of support from IHS Area Offices appeared to vary, with some respondents indicating that they received all the help they needed and others reporting that their area-level Improvement Support Teams were not able to consistently provide the level of assistance that clinics needed.

6. **Assessing patients' needs and community resources can help focus PCMH efforts.** Knowing a clinic's patient population, including its health and social service needs, was seen as critical to being able to meet the needs of the patient community and to improve a patient's health care experience. At the same time, analyzing both a clinic's expenditures for Purchased/Referred Care program services and the availability of other service providers in the community could identify ways to spend a clinic's resources more efficiently.

7. **Smaller clinics may need more assistance.** Smaller clinics appeared to suffer disproportionately from CEO turnover and staff vacancies. They reported a more-limited ability to apply for grants to support new models of care, and often lacked staff with a deep understanding of quality improvement, with data analytics capability, or with expertise in iCare—all factors that could substantially slow progress toward PCMH recognition.

8. **Third-party revenue is critical to sustainability.** Most clinics cited the Affordable Care Act's expansion of Medicaid eligibility to childless adults as a major factor in their ability to increase third-party revenue. Additional revenue helped clinics hire more staff, expand access, and invest in other infrastructure improvements, which, in turn, provided more opportunities for growth in revenue that allowed them to sustain these changes.

9. **The impact of PCMH implementation has been overwhelmingly positive.** The seven clinics reported overwhelmingly positive experiences, including positive feedback from staff, high performance on GPRA quality measures, and improvements in patient satisfaction and access to care.

The seven clinics also offered a few recommendations to sites still pursuing PCMH recognition.

1. **Start small, do not be afraid to fail, and recognize that change takes time.** Successful clinics urged others to "start small" and pursue a few "easy wins" to avoid being overwhelmed when implementing multiple process changes simultaneously. Clinics described failing numerous times before successfully implementing a new process, and noted that incremental changes take time and require persistence.

2. **Expect at least some resistance from patients or staff.** Shifting to team-based care and continuous quality improvement models represent large cultural shifts that can initially engender resistance from staff. In addition, patients may become frustrated with new scheduling systems or by new staffing models in which they receive care from lower-level staff.

3. **Work to build your staff's adaptive reserve.** Successful clinics did not exhibit symptoms of "change fatigue," but rather embraced the concept of continuous process improvement and allowed their staff to guide practice changes using a "bottom-up" model rather than a "top-down" approach.
4. **Take advantage of opportunities to learn from others.** Clinic staff who were able to meet face-to-face with staff from other clinics and their improvement teams, share best practices, and, in some cases, shadow one another found those experiences to be particularly helpful and motivating.

Conclusion

Each of the seven clinics used a variety of approaches to implement aspects of the PCMH model based on size, staffing, and patient care priorities. Most clinics struggled with high rates of staff turnover and shortages that were exacerbated by bureaucratic delays in IHS HR processes, which limited clinics' ability to create more multidisciplinary care teams or to expand access to care. Clinics often relied on contracted staff to fill these shortages, which undermined the empanelment process and the formation of lasting patient-physician relationships. Strategies to enhance access to care varied based on existing utilization patterns that each clinic hoped to change, and most clinics found that optimizing changes to scheduling systems was an iterative process. In addition, some clinics were constrained in their ability to implement changes to the physical layout of their space to promote more team-based care; other clinics reported challenges leveraging the capabilities of iCare or enhancing their care planning and health coaching interventions.

Succssful clinics exhibited strong executive leadership that established a consistent vision of the medical home's end state and used a diverse, dedicated implementation team to manage the overall effort, gain staff buy-in, and ensure forward progress even in the face of CEO or staff turnover. Consistent communication with staff and the community in the planning stages and over time helped to ensure that the medical home was shaped by the priorities and ideas of staff and was responsive to the unique needs of each clinic's patient community. The clinics that reported the most-positive experiences were those that took a highly participatory approach, embraced a culture of trial and error, and developed a mindset of a long-term shift toward incremental and continuous quality improvement, which helped to build high levels of adaptive reserve within clinic staff.

Taken together, these findings suggest that many of the implementation barriers identified by IHS clinics (e.g., staff shortages and turnover, limited training in key competencies) and facilitators (e.g., strong leadership, clear vision, dedicated implementation teams, technical assistance) are also some of the factors most widely cited by stakeholders outside of the IHS. Nevertheless, as the IHS reflects on its ongoing efforts to support clinics on the path toward PCMH recognition, it might consider several concrete suggestions offered by these seven clinics that could address the challenges they faced. Among these are the need for expediting clearance and approval processes for hiring new staff, providing additional resources for clinic expansion and modernization to support the implementation and sustainability of medical homes, ensuring the adequacy of technical assistance across IHS areas, and facilitating additional opportunities for collaborative learning.

Acknowledgments

Abbreviations

AAAHC	Accreditation Association for Ambulatory Health Care
AI/AN	American Indian or Alaska Native
APCP	Advanced Primary Care Practice
ASPE	Assistant Secretary for Planning and Evaluation
CDC	Centers for Disease Control and Prevention
CEO	chief executive officer
CMS	Centers for Medicare & Medicaid Services
CPC	Comprehensive Primary Care
ED	emergency department
EHR	electronic health record
FQHC	Federally Qualified Health Center
GPRA	Government Performance and Results Act
HHS	U.S. Department of Health and Human Services
HR	human resources
IHI	Institute for Healthcare Improvement
IHS	Indian Health Service
IPC	Improving Patient Care
IST	Improvement Support Team
IT	information technology
MAPCP	Multi-Payer Advanced Primary Care Practice
NCQA	National Committee for Quality Assurance
NDP	National Demonstration Program
PA	physician assistant
PACT	Patient-Aligned Care Team
PCIP	Primary Care Information Project
PCMH	patient-centered medical home
PDSA	Plan-Do-Study-Act
PPC	Physician Practice Connection

PRC	Purchased/Referred Care
RN	registered nurse
SNMHI	Safety Net Medical Home Initiative
TJC	The Joint Commission
VA	Veterans Affairs

Introduction

Background on the Indian Health Service

The Indian Health Service (IHS) provides comprehensive health care services to roughly 2.2 million American Indians and Alaska Natives (AI/ANs) from more than 567 federally recognized tribes across the United States.[1] The IHS delivery system comprises both federally run facilities and those that are operated by tribes. In fiscal year 2015, 118 facilities were operated directly by the IHS, while 534 were tribally run, and more than half of all federally recognized tribes now operate a facility.[2] A third component of the IHS delivery system includes urban Indian health programs, which offer a range of services tailored to the unique needs of AI/AN residents of urban areas, where nearly 70 percent of the AI/AN population live.[3] The focus of this report is on federally run facilities, which are primarily located in rural areas.

While the IHS is responsible for providing comprehensive medical services to AI/AN populations, the focus of the care it directly delivers is primary care.[4] Because the IHS includes only a small number of hospitals, most inpatient care must be obtained by contracting with non–IHS providers. Specialty services are similarly limited. The IHS Purchased/Referred Care (PRC) program maintains oversight of the contracting process and uses a prioritization system based on medical need to determine eligibility for receiving PRC services.[5] The need for services from non–IHS providers invariably exceeds the budget available for these services.

The AI/AN population served by IHS and tribal facilities is much younger on average than the rest of the U.S. population (median age 25.0 versus 34.9 for all other races).[6] Nonelderly AI/AN adults are also far more likely to be uninsured (22 percent versus 9 percent for whites) and are more likely to be enrolled in Medicaid (26 percent versus 16 percent for whites). IHS providers are able to bill Medicaid for AI/AN patients enrolled in the Medicaid program, and many clinics rely on this type of third-party revenue to supplement their IHS funding.

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[1] IHS, "About IHS," webpage, undated(a).

[2] IHS, "Tribal Self-Governance," fact sheet, July 2016; Elayne J. Heisler, *The Indian Health Service (IHS): An Overview*, Washington, D.C.: Congressional Research Service, R43330, January 12, 2016.

[3] Urban Indian health centers provide health care services tailored to the unique needs of urban American Indian populations throughout the United States. Currently, more than 30 urban Indian organizations provide services at more than 50 locations. Of the roughly 70 percent of AI/ANs that live in urban areas, nearly one-quarter live in counties in which an urban Indian health program operates. See U.S. Department of Health and Human Services, *Trends in Indian Health: 2014 Edition*, Washington, D.C., March 2015.

[4] Heisler, 2016.

[5] U.S. Department of Health and Human Services, "HHS FY 2017 Budget in Brief—IHS," webpage, last reviewed February 16, 2016.

[6] U.S. Department of Health and Human Services, 2015.

Many AI/ANs have significant health needs.[7] Among nonelderly AI/AN adults, 37 percent are obese (compared with 28 percent of whites), 34 percent of AI/ANs smoke (compared with 20 percent of whites), and 20 percent report fair or poor health status (compared with 9 percent of whites). The infant mortality rate within the AI/AN population was 26 percent higher than the U.S. average in 2008.[8]

Purpose of This Study

Primary care practices across the United States are increasingly adopting patient-centered medical home (PCMH) models of primary care in an effort to improve quality of care and health outcomes while enhancing their patients' care experiences. These models aim to redesign the delivery of care so that it is more accessible, team-based, coordinated, and patient-focused. Several organizations—such as the National Committee for Quality Assurance (NCQA)—provide roadmaps for implementing medical home models and offer recognition or certification programs (hereafter referred to simply as *recognition*) that signify that a practice has met minimum standards that broadly align with the Joint Principles of Patient-Centered Care—the framework that guides the modern PCMH movement.[9]

The U.S. Department of Health and Human Services (HHS) plays an important role in supporting quality improvement initiatives throughout the IHS. As part of these efforts, the IHS initiated its Improving Patient Care (IPC) program in 2008 to improve the quality of care for AI/ANs who seek care in its direct service facilities (hereafter referred to as *clinics*).[10] Through the IPC program, IHS clinics have been implementing components of a PCMH model that was tailored to the needs of the population using IHS facilities. IHS clinics have also received support in the form of the IPC Change Package, which provides a structured approach for implementing practice changes, and through access to area Improvement Support Teams (ISTs), which provide technical assistance directly to clinics in each IHS area. As of May 2017, 17 IHS clinics have applied for and received PCMH recognition.

Research on the implementation and impact of PCMH models has grown in the past decade, but little is known about the strategies IHS clinics have used to successfully implement them. IHS clinics may differ from other clinics in ways that could make lessons from prior research less generalizable. In particular, many IHS clinics are either small or located in rural areas, and local tribal communities may play a key role in the strategic direction of these clinics.

To better understand the kinds of strategies that are used by clinics both within and outside of the IHS to implement PCMH models and to identify the main challenges they face, the Office of the Assistant Secretary for Planning and Evaluation (ASPE) commissioned the RAND Corporation to examine the peer-reviewed and grey literature and identify common PCMH implementation strategies and challenges (see Appendix A for the full literature review). The

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[7] Kaiser Family Foundation, "Health and Health Care for American Indians and Alaskan Natives (AIANs)," webpage, November 22, 2017.

[8] U.S. Department of Health and Human Services, 2015.

[9] American Academy of Family Physicians, American Academy of Pediatrics, American College of Physicians, and American Osteopathic Association, *Joint Principles of the Patient-Centered Medical Home*, March 7, 2007.

[10] IHS direct service facilities comprise a system of 170 IHS and tribally managed service units that are administered through 12 Area Offices.

research team then held telephone discussions with representatives from seven federally run IHS clinics that had received PCMH recognition as of July 2017. The discussions with clinic leaders sought to identify (1) how components of the PCMH model had been implemented at their clinic; (2) challenges associated with PCMH implementation; and (3) key lessons and recommendations that could benefit clinics that are not yet PCMH-recognized.

ASPE identified seven clinics with PCMH recognition to participate in discussions. Using an initial set of questions drafted by ASPE staff with input from IHS headquarters staff, we developed a semistructured discussion guide that included questions about each clinic's practice context, implementation strategies and challenges, and the impact of PCMH recognition on patients and staff (see Appendix B for the discussion guide). Separately, we collected staffing and empanelment data from each clinic using a survey that we administered by email.

Chief executive officers (CEOs) from IHS clinics were invited to participate in two-hour telephone discussions with the RAND research team. CEOs were encouraged to invite administrative or clinical staff knowledgeable about the clinic's PCMH experience to join the discussion. All discussions were conducted between August and September 2017. The majority of discussions included two or three respondents, and only two discussions were conducted with a single respondent.

A single interviewer conducted all discussions and a note-taker attended each call. Each discussion was audio-recorded and transcribed by a professional transcription service. We developed a Microsoft Excel–based abstraction template that mirrored the discussion guide and used it to identify common and unique themes across the seven clinics. The template was modified slightly after the first abstraction to better organize content from the discussion transcripts. After the majority of discussions were complete, we abstracted participants' quotes into the template. Two team members examined common and divergent themes and other patterns within the data using thematic analysis.

Organization of This Report

The remainder of this report is divided into four main sections. In Chapter Two, we provide background information about the seven clinics participating in our discussions, including information about staffing, motivations for pursuing PCMH recognition, timing of recognition, and a brief discussion of their implementation teams and communication strategies. In Chapter Three, we discuss the implementation strategies used by the clinics and some of the challenges they faced on their path toward PCMH recognition. Chapter Four summarizes key lessons from the implementation experience of the seven clinics and their recommendations for nonrecognized clinics. Chapter Five contains a brief summary of our findings and a conclusion.

PCMH-Recognized Clinics Participating in the Study

Six of the seven clinics that participated in our discussions completed a questionnaire that elicited information about their current staff and empanelment status (see Table 2.1). The six clinics varied in size, reporting between 23 and 174 total full-time staff. Numbers of clinical and case management staff also differed widely by clinic and made up less than half of total staff at all clinics, with the exception of Clinics A and B. All but one clinic used contracted staff to fill vacant positions. Among clinics that used contracted staff, the share ranged from 4 percent (Clinic B) to 31 percent (Clinic D). Commonly reported vacancies included dental staff, nurses, physicians, and medical technologists (not displayed in Table 2.1). We discuss clinics' staffing issues further in Chapter Three.

Five of the six clinics reported that they currently empaneled their patients to primary care teams.[1] The average number of patients empaneled to a care team reported by clinics ranged from 720 to more than 2,700 patients, while the average number of patients empaneled to each primary care provider was lower, ranging from 720 to 1,051, and varied to a lesser extent across clinics. Empanelment is discussed further in Chapter Three.

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[1] *Empanelment* is a term that indicates the assignment of a patient to a dedicated provider or care team for all of the patient's ongoing primary care needs.

Table 2.1. Characteristics of Clinics Participating in the Study

	Clinic A	Clinic B	Clinic C	Clinic D	Clinic E	Clinic F
Year receiving PCMH recognition	2016	2010	2009	2013	2017	2017
Service area	Portland	Billings	Phoenix	Albuquerque	Nashville	Great Plains
Clinic staff (number of full-time equivalent employees)						
Total staff	174	122	38	92	23	40
Clinical or case management staff	97	74	16	26	7	12
Clinical or case management staff under contract	7.5	3	0	8	1	1
Empanelment by clinic (number of patients)						
Primary care	3,242	4,739	2,438	4,400	–	Unsure[b]
Pediatrics	2,560	2,748	–	–	–	–
Behavioral health	–	–	–	–	–	–
Medical specialty	–	909[a]	–	–	–	–
Average number of patients empaneled to a care team	870	2,748	2,482	720	–	Unsure[b]
Average number of patients empaneled to a primary care provider	648	1,051	813	720	–	Unsure[b]

NOTE: Clinical staff include medical, dental, and behavioral health providers. Staff under contract indicates locum tenens.
[a] Internal medicine.
[b] Data were not reported for these items.

In the remainder of this section, we describe clinics' motivations for pursuing PCMH recognition, their previous quality improvement experience, the structure of PCMH implementation teams and their communication strategies, and a discussion of the IPC tools available to clinics pursuing PCMH recognition. The themes we present in this section and all subsequent sections reflect discussions we held with all seven clinics.

Motivations for Pursuing PCMH Recognition

Respondents shared a variety of reasons for their decisions to implement a medical home and pursue recognition. Several respondents mentioned that their primary motivations were related to the desire to shift from a model of care that was defined by episodic relationships—particularly for patients who sought care on a walk-in basis—to one that allowed deeper and more-continuous relationships between patients and their doctors:

> I think it's a perfect fit for IHS just because we do tend to have a fairly steady population, and I think that we just have a population with a lot of challenges, and I think that having this consistent relationship with the patients and really focusing on that is really . . . the way that we can actually improve the health of the patients and really be involved with them on a personal level.

Another respondent described how the PCMH model would help address patient complaints and improve the clinic's quality of care:

> We were having a fairly high volume of patient complaints, and coupled with the quality improvement, we needed to start addressing these areas to make it a better patient experience and deliver better overall health care . . . . It just makes good sense in care delivery.

A few respondents mentioned that financial considerations motivated them to implement medical homes, either in response to financial incentives from their state Medicaid program or to attract patients with third-party insurance (typically Medicaid) who might otherwise seek care from a neighboring practice. One other respondent hoped that the medical home would lead to a more efficient style of care, which can be important for IHS clinics with limited resources:

> I think for IHS, it's probably pretty universal that we're all understaffed. We have very limited resources. I know some service units have trouble with their budgets . . . . So, to me, efficiency is so key because we have less to work with.

Assigning patients to dedicated care teams and optimizing scheduling to expand the number of patients that can be seen each day were seen as aspects of the medical home model that could increase efficiency.

All seven clinics received PCMH recognition through the Accreditation Association for Ambulatory Health Care (AAAHC) between 2009 (Clinic C) and 2017 (Clinics E and F). Multiple respondents noted that it was easier to pursue recognition through AAAHC relative to other recognition programs, including the NCQA or the Joint Commission. According to one respondent,

> NCQA did come up at one juncture. However, they were fairly complex. And our accreditor, AAAHC, allowed us to pursue patient-centered medical home at no additional cost and with no potential adverse impact on our organization's rating for our main clinic accreditation.

Most respondents mentioned that the decision to pursue PCMH recognition through AAAHC came naturally because they had already received ambulatory health care accreditation from the organization. For one clinic, AAAHC notified the clinic that it met most requirements for PCMH recognition and were able to grant it conditional recognition status. One clinic noted that all clinics in its area were encouraged to pursue AAAHC by the IHS Area Office in an effort to better coordinate efforts regionally. Notably, one respondent acknowledged that the more stringent requirements associated with NCQA's PCMH recognition program could lead to more far-reaching changes within his clinic and indicated that his clinic might consider pursuing recognition through NCQA in the future.

Previous Quality Improvement Initiatives

Previous engagement in quality improvement programs varied by clinic. While some clinics primarily conducted internal quality improvement projects with a relatively small scope, others participated in statewide or national programs, such as their state's Medicaid Health Home program, which was authorized by Section 2703 of the Affordable Care Act. One respondent described participating in the Centers for Disease Control and Prevention's (CDC's) Million Hearts program as a valuable experience for one of her clinic's care teams.[2]

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[2] For more information on Million Hearts, see CDC, "Million Hearts," homepage, undated.

Several clinics participated in the earliest IPC initiatives (known as IPC 1.0 and 2.0), during which the Institute for Healthcare Improvement (IHI) sponsored a breakthrough series involving a small number of IHS clinics. Through IPC 2.0, clinics received support and were encouraged to achieve PCMH milestones that would eventually lead to PCMH recognition. Clinics were eligible to participate in a 16-month curriculum consisting of webinars that provided guidance on how to reach the PCMH milestones.

Staff Roles in PCMH Implementation

The majority of clinics reported a team-based approach to planning and implementing the medical home. Implementation teams were usually led by the CEO and included clinical directors, directors of nursing, and pharmacy and clinical support staff. CEOs often were responsible for communicating the vision and goals of the medical home to their staff and attending regular meetings to provide ongoing reinforcement. One CEO described her responsibilities as primarily allocating the necessary resources and communicating with both staff and external partners:

> My role was . . . making sure the conversations were happening, that we . . . had follow-up on assignments that were given. If additional staff were needed, then I would make sure we have the funding to do it and have our budget officer and everyone involved . . . whether it's a contractor or a full-time employee, and work with HR [human resources] . . . . [O]ur program is a tribally managed program, so [I work] with the tribal leadership to have them come be part of the team here.

Another CEO described her role as one of providing support and encouragement to staff in order to create a sense of ownership of the change process, which was important because it let people "feel good about what they're doing." Another CEO felt that one of her main responsibilities was to communicate a consistent vision throughout the effort by "reiterating to . . . staff that we're doing things because it's the right thing to do; not [simply] to check a box."

Other clinics reported that their CEOs were less involved, primarily because of high turnover in that position. The turnover led to many leadership responsibilities falling to other clinic staff. One respondent shared that the CEO's role was limited to "giving me the directive to apply for [PCMH recognition] and see that it goes through, basically." Multiple clinics reported that turnover in leadership highlighted the need for a dedicated group of staff to lead the implementation effort.

Many clinics reported that their implementation teams met on a weekly basis to maintain forward progress on multiple fronts. Most indicated that their implementation teams had sufficient authority to set policy, which was needed, given the large number of new processes the clinics were seeking to implement:

> I think the key was that our improvement team, our leadership team, was made up of key supervisors. So, once they're on board, then they just sort of implement: they make it the policy that this is how we do things, and it has to come from the top down.

Although setting policy was a primary function of implementation teams, they also oversaw testing and experimentation with new approaches. One respondent described how the

implementation team tested out new patient care strategies with a single designated care team before they were rolled out to the larger clinic.

Communication with Staff, Tribal Leaders, and the Community

Respondents discussed a variety of ways in which information about the medical home model was communicated with stakeholders, including staff, patients, tribal officials, and other community members. To promote communication within the clinic, implementation teams commonly provided updates on the status of various initiatives and their rationale during general staff meetings. One respondent stated that these general staff meetings were an opportunity to obtain feedback from staff:

> I think it's important when you include [staff] as well . . . with, 'What do you think?' or, 'What are your suggestions for making this better?' Because a lot of employees have some really good ideas. But if you don't ask, you'll never know.

Nearly all clinics reported some level of ongoing communication with tribal leadership and community members about changes to the clinic. One respondent shared:

> [We] would hold community health forums right here in the clinic, typically after hours . . . we would give presentations on what we were doing, and then answer questions and, at first, take complaints, because there was a lot of frustration. But I think once people started to understand and got their concerns answered, I think it created a [much] better relationship with the community and the clinic, and also with tribal leadership.

CEOs typically attended tribal meetings on a regular basis to hear and respond to community concerns. One CEO mentioned that she engaged the tribal health board as opposed to the tribal leadership because they tended to be busy with other priorities, although tribal leaders did attend several administrative functions.

Most clinics described a variety of communication channels that they used to reach the broader community, including sharing information through a tribal newsletter, newspaper, or local radio; posting photos and biographies of staff in the patient waiting area; and sending text messages to patients. One respondent noted that her clinic used its yearly health fair as an occasion to educate their community about the benefits of their medical home. Several respondents mentioned that in smaller and more-rural tribal communities, word-of-mouth communication was common for disseminating information about the clinic's initiatives, which may be essential in changing patients' perceptions of the clinic. One CEO noted:

> I know that there's these opinion makers out there in our community . . . . I was the one that talked with them and had one-on-one conversations with them about the changes that we were making. And so, once I got them on board . . . they went out to the rest of their family and community and started sharing, 'This is what we're doing. We have confidence in what they're doing over there.'

One respondent also noted that patient concerns could also be shared with staff through word-of-mouth communication. This informal communication channel allowed staff to identify potential problems before they became major issues.

IPC Tools Available to Clinics Pursuing PCMH Recognition

As part of the IPC program, IHS made available multiple forms of technical assistance to any clinic that was interested in pursuing PCMH recognition. Specifically, IPC provided general information about possible PCMH recognition programs and their requirements and developed webinars, videos, electronic newsletters, and other tools to provide education about PCMH concepts and to build such specific capacities as data management and continuous quality improvement. Among the most important tools were self-assessments that were designed to help each clinic better understand its strengths and weaknesses, and the IPC Change Package that provided clinics with specific strategies to implement components of the medical home model. IHS Area Offices also helped to provide tailored support to individual clinics through area-level ISTs. Finally, IHS developed a learning network for clinics to share best practices and lessons learned during the PCMH implementation process.

PCMH Implementation Strategies and Challenges

In this chapter, we discuss the types of strategies clinics used to implement components of the medical home within nine distinct areas: expanding or retraining staff; shifting to team-based care; implementing empanelment; enhancing access to the clinic; changing clinic space; using health information technology (IT); strengthening patient care processes; improving care coordination; and expanding quality measurement and improvement capabilities. In each area, we highlight differences in approaches across clinics and the motivations behind the selection of individual strategies to the extent possible. We also discuss challenges the seven clinics faced when implementing changes in each area.

Expanding or Retraining Staff

Only a few respondents reported expanding their staff as part of implementing their medical home. Most clinics struggled with high rates of staff turnover and difficulty hiring staff either because they were located in rural or remote locations or because of bureaucratic delays in IHS human resources (HR) processes. As a result of these barriers, some clinics focused primarily on retraining existing staff for new roles required by the medical home. Other clinics used partnerships with universities or telemedicine to meet their staffing needs.

The small number of clinics that expanded their staff focused primarily on mid-level staff and care coordinators. One clinic appeared to be an outlier in its ability to add multiple clinical staff:

> We've added some positions for nursing. We've also added a position for a certified medical assistant. And even on [the] provider side, we looked at our user populations . . . almost 50 percent of our user population was pediatrics. And so then we sat down and looked at what we can do differently and we added a second pediatrician onto our staff. We've also started utilizing mid-levels as well.

Recognizing the growing workload for its existing case manager, this clinic also added a second case manager.

Other respondents mentioned that they already had enough primary care physicians when they started implementing their medical home, and instead sought to expand their care teams to include a more diverse set of clinical staff, including dental and behavioral health providers and health coaches. One respondent mentioned the need for such staff as nutritionists to help with preventive care activities, including patient and community education:

> We want to focus our efforts on prevention of health care issues in this community and not so much reacting to that [for which] they come in the door. So . . . we have a new full-time nutritionist who does a whole lot of work out in the field, who does cooking classes and training people in better ways of eating.

Even among clinics that made major staffing changes, staff turnover was reported to be a major problem, and reliance on temporary support staff and physicians through locum tenens contracts was common. One respondent noted that the challenge was often in finding staff to cover its urgent care clinic:

> [For] providers, it seems like we're always at . . . a vacancy of one or two at
> least. It seems like when we get one hired, then one may be leaving. So
> that's . . . one area that I think we struggle with the most, especially with our
> urgent care. It's hard to find people who are willing to work the nights,
> weekends, holidays, and yet work in a busy urgent care environment and who
> feel comfortable and qualified. So, we do utilize a locum contract right now to
> help cover shifts. It would be great if we could have all permanent staff, but that
> just hasn't been a reality at this point.

Some respondents noted that contracted staff are not a good long-term solution because they do not tend to stay with the clinic for very long.

Reasons for staff shortages and turnover varied. Clinics located in rural areas had difficulties recruiting staff to practice in remote areas. While local staff, including tribe members, might fill these positions, one respondent mentioned that staff with the right skill sets are not always available locally. For at least one clinic, a tentative plan to convert it from federally run to tribally run may have induced many physicians to leave. One clinic cited the IHS pay scale as a challenge that limited its ability to retain clinical nurses, who often leave to find other positions or transition into administrative roles that allow them to rise to a GS11 (rather than topping out at a GS9).[3] Retirement also appears to be a common reason for staff turnover.

Several respondents also reported long delays in getting HR support to enable them to recruit new staff—which one clinic identified as an IHS-wide challenge and may relate to the Child Care National Agency Check and Inquiries (CNACI) clearance process.[4] One respondent reported delays of between six and nine months to hire new staff. According to one respondent, the combination of HR delays and general difficulty recruiting meant that it might take up to two years to fill a position. At least one clinic relied primarily on mid-level staff because it was so difficult to recruit physicians.

In general, staff turnover seemed to limit a clinic's ability to fulfill the many care management and quality measurement activities required by the PCMH model. One respondent noted:

> We've got staffing issues. And I feel like it's a struggle for us to try—sometimes
> I'll go a month without even thinking about any of my quality improvement stuff
> because I'm trying to deal with other stuff . . . put out fires. And I think that
> finding that balance of still prioritizing it with the balance of doing all the other
> ten things on your list has been a challenge. And I really feel like with a new
> nurse executive and having some of our staff being in and trained, I think that's
> going to help us to get where it's higher on our priority list. And we've talked in
> the past about . . . could we have a dedicated staff member for quality
> improvement. And we're just so small.

Physician turnover presented a major challenge when implementing empanelment, which is premised on a strong, ongoing relationship between a patient and his or her physician and care team. (We discuss the topic of empanelment further in the next section.) Staff turnover can also leave critical skill gaps that can undermine patient care. For example, one clinic reported spending significant resources to train its staff on iCare (the IHS population health management

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[3] GS9 and GS11 are paygrades in the General Schedule (GS) payscale for federal employees.

[4] CNACI is a background investigation for federal employees to determine whether they are suitable to hold a position that involves child care.

system) only to have these staff members leave the clinic shortly thereafter. Other clinics drew a direct linkage between staffing and PCMH implementation success, noting:

> [Now] we're hiring people in a timely manner, so I'm seeing things turn around here where we're starting to see more positives and more positive feedback.

In response to their staff shortages, clinics pursued a few innovative strategies, ranging from partnerships with other groups to increased use of telemedicine. Other clinics made do with current staff. One respondent described how they developed partnerships with nearby universities:

> We've really concentrated a lot of effort on how we can recruit providers. We've done some things that will probably pay off four, five years from now in getting medical students to do rotations here from [the] University of North Dakota and University of Minnesota. That's a long-term investment where the tribe partnered with us. They provide hotel rooms for these students that rotate through.

A different clinic noted that expanded use of telemedicine helped them compensate for psychiatrist staff shortages and augment their staff in other ways. For example, one respondent reported using telemedicine to help with diabetic retinopathy screening:

> We've got more people trained to do the JVN exam, the Joslin Vision Network, so . . . we have two people trained to do the exam here, and then it gets sent off to Phoenix to be read, and it allows us to kind of use our diabetic retinopathy screening from here.

Another clinic developed a telepsychiatry program in which the clinic contracted with a psychiatry department at a teaching hospital to bring opioid dependence services to its patients. In other cases, clinics pursued a strategy of primarily retraining existing staff:

> With nursing, we really didn't bring on any new staff. What we did is train [four of] them to be coaches. So we've mainly gone out and we've taken the people that we had working here and re-educated them to do different things. That's really still in its early stages, but we're really trying to address some of the patient-specific barriers to improving their health behaviors.

Shifting to Team-Based Care

Forming care teams and defining (or redefining) roles were other top priorities for many clinics. Clinics reported a range of experiences in forming care teams and altering workflows that came with team-based, rather than physician-led care. Challenges largely fell into four main groups: encouraging physicians to give up control over certain workflows, encouraging lower-level staff to perform more duties toward the top of their scope of license, establishing new workflows and protocols, and managing the chronic staffing shortages that can undermine the shift to team-based care. Overall, staff valued the shift to team-based care and many new patient care strategies emerged from care teams rather than from clinic leadership.

Several respondents reported that moving to team-based care represented a cultural shift that could be difficult for both physicians and nurses. A few respondents reported that physicians were resistant to sharing tasks with their care teams; over time their resistance appeared to lessen. One respondent described her clinic's early experience with care teams:

> I just don't think they were working together as a team. And they didn't understand, you know, how to do that. I don't think the nurses, the providers, had

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that trust in their nursing and tech teams to allow them to function at their highest level. And so that took some coaching and training. And then there were those that absolutely just were so old school they just couldn't let go of the reins, to some degree. But just having them come together and talk those things out made a big difference in how they functioned as a team.

Another respondent echoed that sentiment, reflecting on her clinic's experience developing care teams as an "eye-opening" process in which staff were forced to learn about each other in a deeper way and figure out how to work with one another. According to this respondent, some teams worked very well with one another while others struggled. One respondent described the initial transition as difficult but rewarding in the long run, and recalled a conversation with a physician on her staff who said

It was really hard for me to share my office with a nurse and eventually a CMA [certified medical assistant]. But now I can't imagine if my nurse wasn't sitting right next to me.

In a few cases, the challenges were less likely to involve physicians than the clinic's nonphysician staff. One respondent reported having to go to considerable effort to convince lower-level staff to perform at the top of their license as part of the transition process. In that clinic, the nursing staff initially resisted a larger role:

Back then . . . we had nurses who were . . . maybe not functioning as nurses. You know, they were more of a kind of a glorified health tech. And the previous director of nursing, really kind of pushed that to say, 'Okay, you guys are RNs [registered nurses]. These are things you can do. These are things you can do for your provider. Make their day easier.' Because when you work with someone, you're going to know what they want. If they're doing a procedure, you can kind of be prepared and anticipate their needs. So that took a little bit of coaxing. And I think she did get some pushback from the outpatient nurses at that time because they had kind of gotten in a groove of maybe not living up to their licensure expectations.

In another clinic, forming care teams required clinic leadership to create new positions so that existing staff could receive higher levels of compensation by taking on expanded roles:

We had nurses that were more experienced nurses here that stepped into care manager roles, and they took on a greater level of responsibility but didn't necessarily get any pay for it. So, then we created care manager positions where they get compensated . . . at a higher level.

Many clinics found that the shift to care teams also meant making sure tasks were delegated to specific staff members and that new protocols were established:

We even had problems with who's making the follow-up appointment and when and who's empaneling the patient, like the actual technical aspect of who does it in the computer. So . . . we're really getting a lot of that ironed out that was previously just up in the air.

A few respondents mentioned the importance of involving additional staff who were not previously involved in care teams. For example, one clinic described how pharmacists' involvement on care teams could improve productivity:

> Getting them involved to spend the time with the patient that's on 20 medications and [has] several co-morbidities, so that when they actually have the visit with the provider they don't spend 45 minutes of a 20-minute appointment talking about medications.

Implementing or maintaining care teams was often made challenging by staffing shortages. For example, one clinic shared how it dealt with staff turnover and restructured its care teams to work with available staff:

> Due to . . . high turnover and . . . a nursing shortage, I've . . . had to relook at that and kind of restructure everything . . . It's an ever-changing model that you have to just try to accommodate and continue . . . and work with what you have. And so right now, [we're] looking at more nursing assistants providing the hands-on care and using the RNs to do more case management, and . . . using their training more towards nursing instead of taking vital signs and things like that, and letting the nursing assistants do a lot more direct patient care.

Despite the challenges that some clinics experienced shifting to greater use of team-based care, all clinics embraced the potential benefits. One respondent described the efficiency benefits of care teams: They allow providers to delegate tasks to a consistent group of nurses or nurse assistants, which can help them "get today's work done today"—one of the mottos that IPC uses in its training materials. Some respondents also described the care teams as being incubators for new care management strategies:

> Within their care team, not only were they doing iCare and all the things that we did with [one of the clinic's other care teams], but then they just decided they wanted to try group visits. And then [a member of the team] asked if she could become a self-management coach because her patients had a high [prevalence] of chronic disease. And so then she started some group visits. And so now all of a sudden, we had a care team that not only was doing some of the things that the other care team did, but they were looking at some additional expanded functions.

Implementing Empanelment

A major change in some clinics was implementing empanelment, in which a patient is assigned to a primary care provider and care team that is responsible for managing the patient's ongoing care needs. Clinics viewed empanelment as critical to establishing the "home" in the medical home for patients. Many respondents noted that implementing empanelment was not arduous, but it did require careful attention and efforts to achieve buy-in among providers in some cases. On the other hand, staff shortages made empaneling patients difficult or impossible for some clinics.

Many respondents viewed empanelment as a critical part of the medical home that could transform the ways in which patients interacted with the clinic. Many respondents felt that empanelment could help patients establish lasting partnerships with care teams that would lead to more-productive and efficient health care encounters that might also encourage patients to seek preventive care on a more regular basis:

> That was something that we focused on initially in hopes of providing access because at that time we had so many patients that would present daily that didn't have an assigned primary care provider, and those needs of that patient would

typically fall on the on-call provider of the day. And then this would just happen every month where we were allocating a lot of human resources and seeing this patient again for the first time by a new provider, a different provider.

Some clinics noted that continuity was something that patients might value just as much as providers. One respondent mentioned that patients wanted to "have a physician that they could call their primary care provider." Over time, most clinics had positive experiences with empanelment and found that both patients and providers viewed the new system as beneficial. As one respondent noted:

I think that patients, once they gave a doctor a chance and stayed with them, they came to see how nice it was to have a provider that knew them. And they didn't have to explain things over. So, I think that the patients did like the new system. But even with the staff, I think it helps when you do know your patients. You manage them better. You know their situations, their families, their life. And as you know, all those things impact health. And so if you're somebody that just comes in and sees patients and [does] not have this consistency, it's difficult to manage the other aspects as well.

Another respondent noted that empanelment could sometimes improve patients' access to the clinic, by allowing care teams to work patients in as a double-booked appointment. This was feasible only because the care teams already knew their empaneled patients' clinical histories and could therefore efficiently address their needs during a double-booked appointment.

Most clinics reported that empanelment was not a difficult process per se, but it took a significant amount of manpower to initially empanel each patient. The primary strategy was to assign patients to the provider they saw most frequently and then let patients switch if they preferred an alternative provider. This process required analysis of visit patterns, which took a few months for at least one clinic. While this method of auto-assignment worked fairly smoothly in several clinics, patients in one clinic reacted negatively and complained that they would have preferred to have been asked for their preference directly because the physician they saw previously was not their first choice. Empanelment was relatively effortless at one clinic whose two physicians had been practicing for over 20 years and whose patients typically received care from only one of the two physicians.

In clinics where the use of empanelment presented more of a challenge, the resistance came more from staff than from patients. In at least one clinic, the benefits of empanelment took some "selling" by the clinic director:

We started talking about empanelment early on and tried to link it with access and productivity. And I think that the care team saw that as increased workload. So, that was a pretty big barrier for us initially. They already felt overwhelmed, and [we were talking] about increasing their panel size pretty significantly— maybe going from less than 200 to 700. Until they could get their mind around [the idea that] working smarter and not harder might actually benefit us all overall, it was a big stumbling block for us.

In this clinic, respondents reported some initial reluctance by physicians because empanelment required them to assume responsibility for the entire health care picture of their patients, and was perceived as more work even though the entire care team shared the burden. However, these attitudes changed over time as physicians adapted to the new model.

An ongoing challenge with empanelment mentioned by one respondent involved patients who received their primary care at a different location:

> One of the biggest discussions . . . is what to do with those patients that don't
> receive their primary care here, but they come here for only optometry or only
> dental. And how do we manage those patients? Are they our responsibility? . . .
> I've seen that some sites empanel these patients to a 'received care elsewhere'
> panel. Some sites choose not to empanel them at all. Some sites choose to
> empanel them through optometry and dental.

This may be an issue primarily for clinics located in areas where patients have multiple options for receiving their primary care.

Staff shortages made it difficult to empanel patients for some clinics. One respondent reported that the clinic simply did not have enough providers to empanel all patients, and therefore implemented empanelment only to a limited extent:

> We're still trying to get fully staffed with providers right now. I have two: a
> nurse practitioner and a PA [physician assistant] that are my permanent staff.
> And we're trying to hire an MD [medical doctor] for the clinical director
> position. So it's kind of hard. It's hard to ask patients to pick a provider when we
> don't have enough to go around that are permanent. So we just haven't opened it
> up to everybody; that's our biggest . . . downfall.

Despite these shortages, this respondent indicated that empanelment was a top priority as soon as its workforce challenges could be addressed.

Enhancing Access to Care

Each clinic pursued a range of strategies to improve access to care—usually in a way that addressed existing utilization patterns that the clinic hoped to change. The most common strategy was altering a clinic's scheduling system to allow for a greater share of same-day visits relative to previously scheduled appointments. Other clinics needed to reduce the stress on their urgent care settings by moving from a primarily walk-in system to one in which patients were encouraged to schedule appointments for their nonurgent primary care needs. Other common strategies designed to improve access included expanding a clinic's operating hours and implementing new systems to provide after-hours care or direct patients to available providers. Physician staff shortages could undermine these efforts by creating extremely long wait times for scheduled appointments.

The use of same-day appointments, otherwise known as "open-access" scheduling was a strategy that was pursued by most, but not all, clinics to better meet patients' demands for timely care. However, this strategy required testing and refinement in several clinics. For example, one respondent described her experience of scaling back an open-access model that was not initially successful:

> The [open-access model] was taken to the extreme [so] that the patient could
> only call that day and then we would scramble to try to fit them in somewhere.
> And that worked very little of the time, caused a lot of staff apprehension and a
> lot of inability to plan ahead for the patient because . . . if they needed to get in
> that day, they needed to secure an appointment first and then go back to their
> employer and ask for time off or vice versa. So, we received a lot of kickback
> from the community about that approach. So, then we went to . . . maybe a 50/50
> model . . . . and right now, I'd say we're at about . . . 60/40 . . . of folks planning
> ahead versus having appointment slots available for . . . a same-day need.

Another clinic used a 50/50 split between routine appointments and same-day appointments, while another allocated 85 percent of its slots for same-day appointments—which may have been due to the fact that this clinic faced an existing problem of overuse at its urgent care clinic by patients with nonurgent needs. The CEO of this clinic explained that its patients place a very high priority on same-day access to the clinic, and noted that shifting away from a mostly walk-in model was a radical change. Nevertheless, this effort led to a large reduction in the no-show rate for the clinic's scheduled appointments:

> We had what we thought was a high no-show rate because people would forget their appointments when a month came around. So our no-show rate was 25 percent. And then we switched to the same-day access system. And about 85 percent of our appointments are same-day appointments. And once we implemented that, the no-show rate's down to 12 percent. The other 15 percent . . . we still do some traditional appointments that they can make ahead of time, so we have that flexibility. Some people live far away and they just need to have an appointment secured in the future.

However, moving to a system with such a high percentage of same-day appointments required the clinic to better manage the volume of calls each morning. The CEO described a system in which additional staff were assigned the task of scheduling appointments from 8:00 a.m. to 8:30 a.m.—the period of peak call volume—and using schedulers that worked with a dedicated care team, which they found to be extremely helpful:

> Having to know how to schedule that provider and what kind of services that provider can provide . . . . That also helps with the consistency when you have the same person scheduling for the same provider and knowing how that provider works.

However, to accommodate this system, the clinic had to upgrade its phone system because it easily became overloaded each morning and calls were being dropped.

Not all clinics used an open-access model. One clinic explained that they do not have same-day appointments; rather, they allow walk-ins on a first-come, first-served basis.

> [Patients] want their walk-in times. They want to be able to walk in and be seen today, which is why we . . . make sure we have walk-ins available every day. They don't want to do a same-day appointment. They want to be able to just walk in and be seen.

To accommodate this model, this clinic used one provider to cover all walk-ins and offered no same-day appointments.

Aside from using same-day scheduling models, some clinics decided to expand their operating hours during lunch (when one clinic used to be closed) or after normal business hours to allow patients to seek care without having to take time off from work. One clinic noted that evening clinics were recommended as part of IPC, and this clinic was able to implement both adult and pediatric evening clinics. Expanding business hours into the evening was not successful for all clinics, however:

> Well, we did try an after-hours . . . clinic that actually was not utilized. We [opened] an hour later in the evenings. And it wasn't utilized very well, so we actually ended up not doing that anymore . . . I mean, to be honest, I expect to be busier when the tribal offices—when businesses are closed or schools are closed. I expect to be busier, but it's actually the opposite.

Even if clinics were not able to expand their business hours, nearly all clinics implemented strategies to guide patients to a nearby emergency department (ED) if the clinic was closed and patients needed immediate assistance. In at least one case, the clinic did not have an after-hours voicemail system, but was planning to implement a new phone system that would include a programmed message that gave the phone numbers of two nearby EDs. At least one clinic contracted with a nurse hotline that patients could call when the clinic was closed that would not only provide advice to patients but would send reports back to the clinic to promote better care coordination.

Despite all of these efforts to expand access to their clinics, many respondents mentioned that persistent physician staff shortages worked against these efforts. For example, wait times for appointments with physicians could be quite long—30 to 45 days on average, according to one clinic. These clinics used appointments with nurses and mid-level staff and phone-based consultations with physicians as workarounds to try to meet their patients' needs.

Changing Clinic Space

Most clinics described changes to the physical layout of their clinic or major renovations that helped to promote better interaction among staff and improve efficiency. These strategies included rearranging current space or building new facilities where care teams could work together in the same area. Other clinics continue to have space constraints that prevent them from hiring new staff, implementing changes that might facilitate team-based care, or providing new space to support wellness or health education–related activities.

Co-locating members of a care team within the clinic was a high priority for several clinics. Several respondents described an existing layout in which nurse stations were located at a distance from physicians' private offices, which helped to reinforce divisions between physicians and nurses. Several respondents described efforts to move team members into a common office:

> We have our teams in an office together, so it's the provider, RN, and health tech. And some of them are pretty crammed; some of them are pretty small offices. But it works. And each provider has two exam rooms. We try to have their offices and exam rooms as close in proximity as we can.

One clinic was able to change the location of its psychologist so she was no longer "down a back hallway" but had office space in the main patient care area. Even if clinics were not able to make major changes to the structure of the building, those that simply moved people around perceived benefits of doing so.

Clinics that mentioned plans for new facilities described the way in which the clinic layout would be conducive to the medical home model. One respondent described plans for a satellite clinic:

> We're looking at building a new health facility . . . . And for the clinical area, medical home is really the prevalent theme in how we're laying out the design, so it works well for our care teams so they have access down the corridor. They can see the exam rooms that belong to their care teams, use the indicators outside the door for status of the patient in the room, and also to have that constant communication about the patients that are empaneled to those care teams. So, the providers will have small offices right off of that main care team or pod area. So, we're really laying out our whole physical design and architectural layout around patient-centered medical home.

Other clinics modified their layouts in ways designed to improve efficiency. For example, one clinic sought to minimize the amount of time required to restock exam rooms by storing supplies in a central location.

Clinics that were not able to make major changes to their clinic space appeared to be struggling somewhat. In particular, some respondents mentioned that after successfully implementing the medical home model, they were poised to expand their staff, but they had no space to accommodate new staff. This was viewed as a major problem by these clinics, not only because it limited patient access but because it made it hard to generate additional revenue. One respondent described the enormity of the challenge:

> We have one dentist and two chairs, and we have no place else to put them. So we've talked about, okay, should we move dental to like a mobile facility outside the clinic and use that space for another provider? . . . And then we have a telemedicine room, so we've got more telemedicine going, but looking at adding more telemedicine providers, okay, how do you schedule that room? We've talked about, over the years, adding physical therapy. But then we don't even know where to add them and where to put [them] so I think we've talked about a lot of things that we could do, knowing that we can't do it in the space we're in right now.

Aside from hiring staff, respondents mentioned that their ability to provide certain types of patient care or education were limited by their clinic space:

> Our space is very lacking. Like our health education community, our activities are generally held in a tribal area because we don't have room for any . . . group education or anything in our clinic. Our facilities are very lacking. They're not big enough for us.

Using Health Information Technology

Clinics often noted that the transition to electronic health records (EHRs) preceded their medical home activities and that the availability of additional payments from the Centers for Medicare & Medicaid Services (CMS) for demonstrating meaningful use of their EHR helped them to develop capabilities that were useful while implementing the medical home. Many clinics described iCare as an important tool in their efforts to better manage their patient panels, although many respondents felt that they had not yet begun to use the system to its fullest potential.[5]

Nearly all respondents mentioned using iCare and found it to be useful for keeping track of their patients and whether they were receiving high-quality care. Several respondents specifically mentioned that iCare's reminder system was helpful in managing patients with diabetes—iCare prompts them to schedule visits for screening tests. One respondent mentioned using reminders to engage patients about needed follow-up care during clinic visits. Another respondent noted that its quality improvement lead used iCare to generate reports for staff, which was helpful for identifying quality gaps. This clinic used iCare to create specialized templates for notes that were used for specific types of visits, such as those for patients with diabetes or well child or women's care visits.

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[5] iCare is an electronic tool that supports administrative and patient management. This tool allows practice staff to manage scheduling, develop patient care plans, oversee workflows, and monitor performance over time.

> A lot of the text is already in there. So I try to do trainings with the doctors so that they become very good at it, so they can whip out these notes quickly, and it has all the information needed.

However, the ability to leverage the full capabilities of the system seemed to vary across clinics.

> Not all of our staff know how to use it to their benefit. So, I think they have some definite missed opportunities there . . . of working smarter not harder to let a lot of that IT infrastructure help them more through their patient panels.

Some clinics thought that additional training would be useful, while others felt that the IHS had done a good job providing training on how to use the system. Several respondents suggested that what was required was a dedicated person with expertise on staff at each clinic who could use the system in a more advanced way. Clinics that had health IT specialists on staff indicated that these individuals would often provide training on the use of iCare for other staff so they could become more-skilled users of the system.

Strengthening Patient Care Processes

Increasing patients' engagement with their care teams and improving their self-management skills are two key goals of the medical home model. Some respondents mentioned strategies they used to better engage patients in developing care plans and setting goals, including collecting and integrating data on social determinants of health in care planning and finding novel ways of sharing patients' own health information with them during clinic visits. Other clinics sought training for their staff on how to coach their patients to develop better self-management skills. Several other respondents mentioned that engaging patients was an area that needed additional attention.

Some respondents reported that IPC had helped them recognize the importance of listening to patients more closely, better understanding their social situation, and developing meaningful care plans in collaboration with patients rather than dictating to patients what their course of treatment should be. Several clinics described efforts to engage patients outside of their clinics, for example, by having their health educators make presentations in the community.

One clinic considered improvements in this area an extremely high priority and implemented a highly structured program to improve chronic disease self-management. As part of this program, the clinic had its staff undergo a self-management training course that was developed by Stanford University. This respondent noted:

> We had several trainers that could train the community in chronic disease health management. So, the goal was, if somebody came in and needed case management, to get out of case management, they would go through this six-week chronic disease self-management and learn how to manage their disease the best that they can, and then that would be the entryway out of the care management program.

Another respondent described using data displays generated from its EHR to help facilitate discussions about a patient's health and care goals. These tools included height and weight graphs (to help talk about obesity) and a thermometer graphic to communicate to patients with diabetes about what constituted an elevated HbA1c level:

The other day I gave [the thermometer graphic] to somebody that I've been seeing for years, and I talked probably until they were sick about—what's going on and how are your fluctuations and that kind of stuff. And they looked at that and they said, 'Oh, that's what you've been talking about.' And I thought, 'Oh my gosh, that's really embarrassing that I've been yakking all that time and they really didn't get it until they saw it in that picture format.'

Consistent use of patient engagement strategies has been a challenge for some clinics. After completing the PCMH Assessment (PCMH-A) in response to a requirement from IHS headquarters,[6] one respondent reported that this was the domain where her clinic struggled the most:

That was . . . one area that we found that we scored the lowest . . . [ensuring] that we had consistent use across the board of health coaching, self-management, setting goals, documenting the goals, using those goals from visit to visit, and so on. We have some folks doing that, but I wouldn't say it's consistent.

One respondent indicated that, while the EHR has some functionality for tracking patients' care goals, "it's not something that we really monitor." Another respondent mentioned that they used to have staff follow up with patients on care goals documented in the EHR, but were not doing that much anymore, even though patients appreciated the clinic checking in on them periodically. One clinic noted that it does not use any formal care plans; rather, it uses its EHR reminder system as a de facto care plan.

Improving Care Coordination

To improve care coordination, clinics described their use of huddles, referral tracking systems, and more-extensive use of care managers to follow up with patients after hospitalizations to monitor their status and needs. Some respondents mentioned that they had been using these and other strategies for many years, but IPC helped them begin to document these activities in a more consistent way.

Huddling was often described as the most important strategy for promoting care coordination. Most clinics reported having huddles before the first patient arrived, while one respondent described holding huddles at the end of the day to prepare for patients coming in the next day. One respondent described these meetings as an opportunity not only to discuss patients' needs, but to ensure coordination about the clinic's available resources each day:

[At] 8:02 in the morning, all the nurses and docs get together and we huddle. And also X-ray and lab, because like I was saying, we're understaffed. Sometimes people are off. We have to reassign. Maybe the chemistry machine's not working. Maybe X-ray won't be available afternoons. So that way, everybody knows what to expect for the day.

A few clinics mentioned that huddles had been a part of their daily routine prior to implementing the medical home model, but that their process became more advanced over time. One clinic mentioned that its front desk staff were incorporated into the huddle to discuss the distribution of urgent and same-day appointments, and to remind others about the timing of the third-next-available appointment to help with planning. This clinic described the huddle as

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[6] The PCMH-A tool assesses a practice's progress in implementing components of the PCMH model. Clinics participating in IPC are required to complete the PCMH-A and submit a copy of the results to IHS headquarters.

becoming much more meaningful and important over time, whereas before it was mostly perfunctory.

Staff in at least one clinic initially struggled to convince its providers that ceding the first appointment slot of the day to enable huddling was a wise trade-off:

> We had just recently decided that we really needed to have both of the PAs there or available to be there so that they could take part in it. They're maybe a little frustrated that they're not having that appointment. But I think it's . . . one of the frustrations that's just going to take time to [overcome] . . . to have them be involved and realize that, okay, this is planning for the day, and it really can be valuable to make sure you look and see what's going on, and . . . so they're aware . . . if our staffing is low.

Using case managers to track referrals was a strategy several clinics employed to ensure that patients who were referred for specialty care completed these visits. One clinic described weekly PRC meetings to help manage referrals:

> We have a PRC meeting every Wednesday. And so [the case managers] get all the referrals and they look at them just to see if they're complete, if there may be more information our folks at the PRC meeting may need in order to get a referral approved. So, they kind of do a lot of the footwork with making sure that's a smooth process.

Case managers also helped with care transitions by following up after specialist visits or inpatient stays. One respondent noted that a case manager follows up with all patients who are hospitalized and reports on their status. Another respondent explained that a public health nurse would coordinate medications before patients were discharged and would conduct home visits with patients shortly after discharge. Another staff member described a system of case managers who follow up with patients who had ED visits the previous day to better understand the issues and make appointments as necessary:

> They . . . call them up and say, 'Hey, I noticed you had an ER [emergency room] visit last evening. How are you doing?' Patients really appreciate that. They may get a call at 7:15 in the morning. But it [helps patients understand] that these people really do care about us.

One rural clinic's staff felt that maintaining close relationships with neighboring clinics and specialty practices was helpful for improving care coordination with providers outside of their clinic.

> We have very good relationships with other specialists. There are two hospitals that we refer to. And we have their doctors come and have breakfast with us, and we have all these ties with the outside specialists. Because we are so rural, we're very dependent on them receiving our patients, getting all the information they need, we get faxes and reports back very quickly, and we consider them part of our medical neighborhood, of our medical home. We have to have good relationships with our neighbors.

Although this clinic was particularly successful in engaging specialists, the extent to which other clinics face difficulty obtaining specialty care for their patients or coordinating care with specialists remains unclear and was not a major focus of our discussions.

Coordinating with hospitals was a particular challenge for some clinics. One respondent reported difficulty developing a notification system between the clinic and a local hospital that

would alert the clinic that a patient was about to be discharged, because hospitals could not always tell whether a patient was an IHS member.

Expanding Quality Measurement and Quality Improvement Strategies

Although all clinics reported that they closely monitored their Government Performance and Results Act (GPRA) quality measures,[7] many clinics discussed using other metrics—particularly those assessing timely access to care—to guide their PCMH efforts.

Some clinics monitor no-show rates, continuity with the same provider or care team, and the percentage of patients with appointments versus walk-ins. Most clinics tended to use these metrics to identify areas for process improvement, but also used them because these factors were likely to influence patient satisfaction. One respondent described their use of "cycle time" metrics:

> One of the things we measure . . . is called . . . "Toes in/Toes out" when the patient walks through the front door to the time they leave pharmacy. And our average is about 45 minutes. So we don't have patients waiting in the waiting room more than two to three minutes at a time, I think. It's [critical for] those 20-minute appointments . . . . And [the] pharmacy has an average of five minutes.

Another respondent noted that "value-added time," which it monitors closely, may be a better metric than "toes in/toes out" because it assesses the amount of time that the patient spends with medical professionals during a clinic visit.

Other respondents described transitioning to a continuous quality improvement model as part of their medical home implementation efforts. One respondent described a clinic's increased use of data analytics to drive change, including generating baseline data for benchmarking and identifying the root causes of poor performance. This respondent mentioned that conducting Plan-Do-Study-Act (PDSA) cycles and refining the clinic's care processes in response is a gradual process.[8]

One respondent discussed their clinic's expanded use of Webcident[9] to describe its attention to process changes that might have been overlooked in the past:

> [Webcident] was one of the EHR [features] that we utilized before but not as often now because it was hard to keep track if there was an issue. So even as far as . . . the trash wasn't emptied, I decided that any issue [would be tracked through] Webcident reporting. Let's get it into Webcident and let's bring it to the committee, so that we can see if we can improve the thing.

One respondent described efforts to engage all staff in quality improvement activities to reinforce the value of the many changes that were being made:

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[7] Under GPRA, IHS sites and Area Offices are required to submit data on a set of clinical and nonclinical performance measures on a quarterly basis to track performance relative to predefined targets. Nonclinical measures might include rates of hospital accreditation and infrastructure improvements. For more information, see IHS, "GPRA and Other National Reporting," webpage, undated(b).

[8] PDSA cycles test a change "by developing a plan to test the change (Plan), carrying out the test (Do), observing and learning from the consequences (Study), and determining what modifications should be made to the test (Act)." See Institute for Healthcare Improvement, "Tools: Plan-Do-Study-Act (PDSA) Worksheet," webpage, undated.

[9] Webcident is a web-based reporting tool used throughout the IHS that allows staff to report safety or quality concerns and whose remediation can be systematically tracked.

> I think the leadership here is very good at sharing data. And so we pull a lot of numbers and show a lot of graphs. And that really creates a visual for our staff for when we say, 'This is what we'd like to do,' and we test it and then we show the results of either it being successful or not. I think that helps people have a little more confidence in the fact that we're not just making changes just to be changing stuff; we're actually looking for specific results for our patients. The transparency, I think, is important.

Another clinic indicated that quality improvement efforts had become fairly well integrated into its workflows. For example, when the clinic's patient satisfaction scores fall below a certain benchmark, a dedicated quality improvement committee conducts a review to identify opportunities for improvement and, as appropriate, performs a PDSA.

Chapter Four

Lessons Learned and Recommendations for Clinics in Pursuit of PCMH Recognition

In this chapter, we discuss key lessons that PCMH-recognized IHS clinics learned from their experience implementing and expanding their medical homes. We supplement these lessons with themes from our literature review, which synthesized findings from key PCMH initiatives conducted over the past decade. The seven clinics also offered several recommendations to clinics that are still pursuing PCMH recognition, which we provide at the end of this chapter.

Lessons Learned

Strong Executive Leadership Can Speed PCMH Implementation

The CEOs who we engaged were truly visionary. Many described yearslong journeys that involved transformation of their clinic space, major changes to scheduling, use of expanded care teams, and a variety of strategies to provide more-comprehensive, continuous, and coordinated care. Several of these leaders applied for and received PCMH recognition over three years ago. These CEOs described how the needs of patients guided their efforts, and patients' care experiences were foremost in how they viewed the success of their efforts. They also worked to ensure both accountability and sustainability of the new model by, for example, incorporating PCMH concepts into job descriptions and employee performance management systems. In the only clinic where the CEO never fully bought in to the medical home model, the implementation team found it difficult to mobilize the rest of the staff, which stalled efforts.

A Diverse, Dedicated Implementation Team Is Essential

Because all staff will be affected by the infrastructure and workflow changes that are required to achieve PCMH recognition, a dedicated implementation team that spans multiple disciplines is critical for success. Recognized clinics commonly used a team that consisted of the CEO, clinical director, and director of nursing—all of whom had the appropriate authority and could provide legitimacy to the effort. Several respondents noted that successful implementation might require going beyond these staff to include a quality director and IT specialist because of the need for analytical support. A multidisciplinary team can not only help to ensure that the implementation process is planned in a thoughtful way, but may be particularly helpful in securing buy-in among clinical staff. Even among PCMH-recognized clinics, when responsibilities for sustaining the medical home fell to a single person, the effort often sputtered as competing demands arose.

Staff Turnover Can Slow Development of Critical PCMH Capabilities

Nearly all respondents reported shortages of clinical staff and high rates of turnover. Staff shortages limited a clinic's ability to provide higher levels of access, more-extensive use of empanelment, and more-interdisciplinary care. Staff turnover also required clinics to spend large amounts of time and resources educating and training new staff and was therefore especially

burdensome for small practices. Recruiting and retaining staff who are willing to work in rural locations was a challenge even for the most advanced clinics. However, some clinics were able to successfully use telemedicine and partnerships with academic medical centers to address critical staff shortages.

Consistent Communication with Staff and the Community Can Secure Buy-in and Provide Reinforcement over Time

Nearly every clinic made a concerted effort to engage staff early in the implementation process through staff meetings, newsletters, and trainings. As implementation proceeded, sharing data and success stories provided helpful reinforcement around the goals of the medical home and helped encourage staff to pursue continuous process improvements. At the same time, clinics invested heavily in engaging tribal leaders to maintain coordination and to secure buy-in on the changes that most directly impacted the community—such as implementing new scheduling systems. Tight linkages with the community and finding roles for community members in these efforts were considered particularly important because, according to one respondent, "there [are] so many amazing people in the community [who] are willing to step up and contribute." Clinics noted that community engagement also included the providers becoming involved in local activities of particular importance to the tribes, a strategy that worked well because staff are commonly members of tribal communities. These communication efforts improved the community's perception of their clinics and helped to establish their clinics as the place to go for trusted care.

IPC Tools Are Valuable in Charting a Course of Change

Feedback on IPC resources was largely positive. One respondent noted that the self-assessment was a critical starting point because it helped clinics reflect on their existing services, processes, and patients' needs and helped to identify weaknesses. Another respondent indicated that the IPC Change Package provided valuable guidance and confirmed that the sequence of steps recommended in the Change Package rang true (e.g., building foundational leadership support before implementing complex interventions, such as empanelment). Some respondents noted that they received a lot of support from IHS Area Offices, including multi-day, in-person, mock PCMH-recognition audits and substantial assistance from improvement advisers, which they found to be quite helpful. However, the level of support from IHS Area Offices appeared to vary across areas, with some respondents indicating that they received all the help they needed, and others reporting that they could have used additional assistance.

Assessing Patients' Needs and Community Resources Can Help Focus PCMH Efforts

Knowing a clinic's patient population, including the population's health and social service needs, was reported as critical to improving a patient's health care experience. For example, knowing how many patients were coming in each day and for what reasons, and how many patients required referrals could help guide a clinic's strategy for expanding access to the services in greatest demand. Communities may also have resources that the clinic can leverage— such as substance abuse treatment providers, which can allow the clinic to focus on building capacity in other areas. At the same time, an analysis of PRC services might suggest new service lines that the clinics could consider implementing on site.

Smaller Clinics May Need More Assistance

Smaller clinics faced several disadvantages, particularly CEO turnover and staff vacancies. Respondents from smaller clinics also reported a limited ability to apply for grants that could finance training sessions for their current staff (such as training to become health coaches). Smaller clinics often lacked staff with a deep understanding of quality improvement, data analytics capability, or mastery of iCare, all factors that could substantially slow progress toward PCMH recognition. At the same time, our respondents suggested that small clinics or clinics experiencing staffing shortages should view these as unique opportunities to begin implementing changes, either because securing staff buy-in might be easier during these periods or because clinic leadership could set expectations about the new model of care in advance of expanding the clinic's staff.

Third-Party Revenue Is Critical to Sustainability

Most clinics described a virtuous cycle in which their staff physicians helped to bring in third-party revenue, which helped to expand staff and patient access, which allowed further growth in revenue. Medicaid expansion under the Affordable Care Act catalyzed this virtuous cycle, and some clinics used benefits coordinators and patient navigators to help patients complete applications for Medicaid and Medicare Part B and Part D premium assistance. Additional third-party revenue allowed clinics to plan for infrastructure improvements and sustain expanded staffing models.

The Impact of PCMH Implementation Has Been Overwhelmingly Positive

Clinics that became PCMH-recognized and sustained their efforts over time reported overwhelmingly positive experiences. Respondents indicated positive staff experiences, high performance on GPRA quality measures, and improvements in patient access and satisfaction.

Recommendations for Clinics

Start Small, Do Not be Afraid to Fail, and Recognize That Change Takes Time

PCMH-recognized clinics offered several strategies and words of advice based on their own experience. Among the most important of these was to "start small" and pursue a few "easy wins"—such as improving documentation of processes already largely in place, which could help to avoid being overwhelmed by "the 100 things that you're not even close to [being able to do]." Several respondents described PCMH implementation as a process of trial and error. Respondents often described failing at many things before finding the right solution that fit the needs of their clinic. These incremental changes take time and require persistence, and a clear vision of what the clinic is striving for is critical to maintain momentum through the successes and failures.

Expect At Least Some Resistance from Patients or Staff

Given the breadth of changes, all clinic leadership should expect some resistance to change by patients or staff. A commitment to continuous quality improvement requires practices to identify gaps in performance and investigate their root causes, which can cause clinicians to become defensive. In one clinic, sharing offices with care team members initially frustrated

physicians who were used to having private offices. Smaller clinics may have an easier time promoting these cultural changes, simply because the process of securing buy-in is easier with a smaller staff. The shift to a medical home model can also cause major changes in the ways patients seek care, including shifting from walk-ins to scheduled appointments, and potentially receiving care from lower-level staff when they had routinely seen physicians in the past—both of which could negatively affect patient experiences in the short term.

Work to Build Your Staff's Adaptive Reserve

The most successful clinics exhibited high levels of adaptive reserve. They embraced the concept of continuous process improvement and learning and were guided by committed leaders who had strong visions for patient care but who also allowed their staff to experiment with small practice changes and refrained from using a top-down approach. In at least one clinic, individual practice teams transformed their care processes in different ways in parallel. Most clinics we interviewed did not exhibit symptoms of "change fatigue," but rather identified interventions and programs they were planning to roll out in the coming months to refine and expand their existing models.

Take Advantage of Opportunities to Learn from Others

Many PCMH-recognized clinics described the learning opportunities that they enjoyed during IPC 1.0 and 2.0, which featured cross-clinic collaboration sponsored by the IHS and the IHI. Respondents who were able to meet face-to-face with staff from other clinics and their improvement teams, share best practices, and, in some cases, shadow one another, found those experiences to be particularly helpful and motivating. One respondent noted that IPC 3.0 and 4.0 did not involve the same level of in-person cross-clinic collaboration and may not have been as impactful as the earlier rounds of the program. Web- and phone-based learning opportunities are the most common methods that clinics currently use to engage with one another in IPC.

Each of the seven clinics used a variety of approaches to implement components of the medical home model based on size, staffing, and patient care priorities. While a few respondents reported making substantial expansions to their staff, most focused on retraining existing staff so they could take on new roles. Most clinics struggled with high rates of staff turnover and shortages that were exacerbated by bureaucratic delays in IHS HR processes, which limited clinics' ability to create more multidisciplinary care teams or expand access to care. Clinics often relied on contracted staff to fill these shortages, which undermined the empanelment process and the formation of lasting patient-physician relationships. Forming care teams and defining (or redefining) team members' roles was another top priority for many clinics. This required clinics to establish new workflows and protocols. The clinics faced some initial resistance from both physicians and lower-level staff, but these new processes appeared to work well over time. Another major change in most clinics was implementing empanelment, which was not a difficult process, but did require careful attention and some convincing on behalf of providers.

Each clinic pursued a range of strategies to enhance access to care based on existing utilization patterns that leadership in each clinic hoped to change. A common strategy was altering approaches to scheduling to either reduce patients' reliance on walk-in visits or to allow for a better balance between same-day and previously scheduled appointments. This strategy reduced pressure on urgent care clinics and improved predictability for both patients and clinicians. Many clinics slightly expanded their operating hours and worked to reduce no-show rates.

Most clinics implemented changes to the physical layout of their space to promote better interaction among staff and improve flow within the clinic. Other respondents reported significant space constraints and a lack of funds for facility expansion and modernization that prevented them from implementing these changes; still others reported that their facilities generally did not meet their needs. Implementation of EHRs tended to precede medical home implementation, but some clinics reported that they were not using the iCare system to its fullest potential to proactively manage their patients. Some respondents described their efforts to better engage patients in goal-setting through the use of formal care planning and health coaching, although many clinics mentioned that this area needed more attention.

To improve care coordination, many clinics implemented or refined their use of huddling, tracked referrals, and expanded their use of care managers. Some respondents mentioned that they had been using these and other strategies—such as following up with patients after hospitalizations to monitor patients' status and needs—for many years, but IPC helped them begin to document these activities in a more consistent way. In addition, clinics reported a wide range of measurement activities—particularly focusing on measures of access and patient experiences—to track changes in their performance over time. These metrics often were developed to support PDSA cycles that many clinics used as part of a new commitment to continuous quality improvement—a key feature of the medical home.

Several key lessons emerged from discussions with clinics. Strong leadership at the CEO level can accelerate progress by establishing a consistent vision of the medical home's end state and by creatively addressing implementation challenges as they arise. At the same time, a

diverse, dedicated implementation team is critical to manage the overall effort, gain staff buy-in, and ensure forward progress, even in the face of CEO or staff turnover. Communication with staff and the community in both the planning stages and over time helps to ensure that the medical home is shaped by the priorities and ideas of staff and is responsive to the unique needs of each clinic's patient community.

Although implementation of the medical home model was a complex endeavor and was occasionally bumpy, respondents reported that the IPC tools, including readiness assessments and the Change Package, were valuable in charting a course of change. Successful clinics encouraged others to start small with "easy wins" to build momentum and to develop a mindset of a long-term shift toward continuous quality improvement. The process may require repeated failures before staff can determine an optimal solution for their clinic. Clinic leadership also noted that staff and/or patients are likely to resist at least some changes, but education, problem-solving, and creative use of data analytics can help to smooth the transition to new models of delivering care. Indeed, the respondents who reported the most-positive experiences were those that took a highly participatory approach, embraced a culture of trial and error, and otherwise demonstrated high levels of adaptive reserve.

Successful clinics encouraged peers who are relatively new to the medical home journey to take advantage of opportunities to learn from others by forming or joining learning communities and observing successful clinics firsthand. Smaller clinics may need greater levels of assistance as staffing shortages may limit their ability to form multidisciplinary care teams, implement empanelment, and enhance care coordination efforts. Having a stable source of third-party revenue, including Medicaid, was viewed as critical to the ability of all clinics to finance the many changes required to fully implement the medical home model and remains critical for its sustainability.

Taken together, these findings suggest that many of the implementation barriers identified by IHS clinics (e.g., staff turnover, expanding clinic hours) and facilitators (e.g., dedicated implementation teams, community engagement, collaborative learning) are also some of the factors most-widely cited by stakeholders outside of the IHS. Nevertheless, as it reflects on the ongoing efforts to support clinics on the path toward PCMH recognition, the IHS could consider several concrete suggestions offered by these seven clinics that might benefit other clinics pursuing recognition and that address IHS-specific implementation issues. Among these suggestions are the need for (1) expediting clearance and approval processes for hiring new staff, and (2) additional resources for clinic expansion and modernization to support the implementation and sustainability of medical homes over time. Finally, respondents are eager for additional opportunities for collaborative learning (in the spirit of IPC 1.0 and 2.0).

Implementation and Impact of Patient-Centered Medical Homes: Literature Review

Key Findings

- Evidence on the impact of PCMH implementation on quality of care, patient experiences, and spending is generally mixed. A 2017 meta-analysis examining the impact of eleven PCMH initiatives found little or no improvement in key outcomes over time for demonstration practices relative to comparison practices. Three large CMS-funded demonstrations that included thousands of practices and were not included in the meta-analysis produced similar results.

- A much-smaller evidence base exists on the impact of PCMH implementation on small practices. Overall, estimates from these studies resemble those of the broader PCMH literature, with mixed effects on quality of care and no consistent improvements in patient experiences. We found scant evidence on the impact of PCMH models for practices located in rural areas.

- The limited effects of PCMH implementation in both small and large practices could be due to the limitations of the PCMH models that were tested in each study, insufficient financial or technical assistance to practices, a short duration of the evaluation period, or other factors.

- The most-common barriers to implementing medical home models include redesigning practice workflows to make consistent use of infrastructure or care protocols; difficulty hiring care managers or coordinators or adapting staff to new roles; harnessing EHRs to serve as tools that enable continuous quality improvement; implementing new strategies for meaningfully engaging patients; coordinating care across the medical neighborhood; and financing medical home activities over the long term.

- PCMH implementation facilitators include strong and visible leadership; engagement of staff during planning and implementation; a culture characterized by trust, experimentation, and continuous learning (i.e., adaptive reserve); care manager and care coordination support; and access to technical assistance in the form of coaches, feedback reports, and collaborative learning opportunities.

- Small practices tend to have fewer resources and staff with which to implement multiple PCMH model components simultaneously, link them into integrated systems of care, and fulfill the administrative burdens necessary to apply for PCMH recognition. Small practices may have the most difficulty expanding or retaining staff, adopting advanced health IT capabilities, and achieving coordination with local specialty practices and hospitals, which may limit the benefits of PCMH implementation.

Introduction

Research exploring the impact of PCMH models on advanced primary care has been accumulating for over a decade. Numerous state, regional, and national initiatives have tested PCMH models in a variety of practice settings. These initiatives often include practices that

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differ in size and baseline capabilities and provide a range of financial and technical assistance to practices to facilitate adoption of a PCMH model. To our knowledge, no reviews of the impact of PCMH models in small, low-volume, or rural practices have been conducted. As a result, it remains unclear whether these types of practices achieve comparable outcomes to the average practice participating in PCMH initiatives.

In addition to quantitative data on the impact of PCMH models, recent studies have produced key insights about the PCMH implementation process—including the specific strategies practices pursue to achieve the model's overall goals, as well as specific barriers and facilitators of practice change. Synthesizing the lessons learned from past initiatives could provide useful guidance to practices that are currently engaged in PCMH implementation efforts.

We conducted a review of the research literature to summarize evidence of the impact of PCMH models and key lessons from implementation studies over the past ten years. We summarized evidence both from studies focusing on small and rural primary care practices and from studies that included a broader set of practices. For the former, we conducted a search using the PubMed database. For the latter, we used our own knowledge of the PCMH literature to select key articles and reports that described rigorous tests of those models. Given the size of the body of PCMH literature, we do not intend for our literature review to be comprehensive, but rather we intend it to provide an overview of findings from some of the most important studies from the past decade.

In the review that follows, we describe several PCMH initiatives that provide particularly rich information on the impact of PCMH or practices' implementation experiences. These include:

- **PCMH National Demonstration Project (NDP).** The NDP was a two-year initiative that began in June 2006 and included a national sample of 36 mostly small and independent practices. Practices were randomized to either a facilitated arm or a self-directed arm.
- **Comprehensive Primary Care (CPC) Initiative.** The CPC was a four-year initiative that began in 2012 and enrolled approximately 500 practices in seven regions. Medicare joined 39 other payers in sponsoring the initiative.
- **Multi-Payer Advanced Primary Care (MAPCP) Demonstration.** The MAPCP was a PCMH initiative in which Medicare joined ongoing multipayer PCMH initiatives in eight states (New York, Rhode Island, Vermont, North Carolina, Minnesota, Maine, Michigan, and Pennsylvania). A total of 800 practices participated in the three-year demonstration.
- **Federally Qualified Health Center (FQHC) Advanced Primary Care Practice (APCP) Demonstration.** As part of the FQHC APCP Demonstration, CMS provided support for approximately 500 FQHCs across the United States to achieve PCMH recognition, and the impact of recognition on Medicare beneficiary outcomes and expenditures was assessed over a three-year period.
- **Safety Net Medical Home Initiative (SNMHI).** This five-year initiative was launched in 2008 with support from The Commonwealth Fund, and included 65 safety net clinics (primarily FQHCs) in five states.
- **Veterans Affairs (VA) Patient-Aligned Care Teams (PACTs).** The VA-PACT medical home model was launched in 2010 in all VA primary care clinics, including over 150 medical centers and over 800 community-based outpatient clinics throughout the United States.

This review is organized into five sections. First, we describe the ways in which PCMH models have been conceptualized to date—dating back to seminal works from 2007. Next, we discuss common strategies that practices use to achieve the goals of PCMH models. In the third section, we summarize evidence on the impact of PCMH models on quality of care, utilization, cost, and patient experiences. We report these results from studies that include practices of diverse sizes and then, separately, from studies that report results for small practices. In the final two sections, we synthesize our findings on common barriers and facilitators of PCMH implementation. The section that describes barriers to implementation includes a synthesis of barriers reported by small practices, defined as practices with fewer than ten providers or clinicians.

Defining the Patient-Centered Medical Home Model

The term *medical home* was first introduced by the American Academy of Pediatrics in 1967 to describe an accessible repository for the medical records of children with complex medical needs.[1] While the term has persisted, its definition has changed. Over the past decade, the medical home concept has expanded to encompass wide-ranging efforts to improve patient care through increased investment in primary care practices.[2] Beginning in 2004, primary care professional societies produced a series of reports (most notably "The Future of Family Medicine" and Barr and Ginsburg's *The Advanced Medical Home*), which were synthesized into the *Joint Principles of the Patient-Centered Medical Home* in 2007.[3]

The Joint Principles consist of two inputs and five desired outputs of the PCMH model. The first input is a "care team led by a personal physician." The second input is payment reform, consisting of the following additions to fee-for-service payment: (1) payment for work that falls outside face-to-face visits, including payment for care coordination and remote data monitoring (e.g., monitoring of test results); (2) payment to support investment in capabilities that will improve quality and enhance communication (e.g., via telephone or secure email); and (3) incentive payments to improve the quality and reduce the costs of care (e.g., allowing primary care practices to share in savings resulting from reduced hospitalizations). Inherent in these payment reforms is an effort to reduce the incentive to perform face-to-face visits with patients, relative to the other critical services that constitute comprehensive primary care—an approach some have called "comprehensive payment for comprehensive care."[4] Nearly all PCMH

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[1] Calvin Sia, Thomas F. Tonniges, Elizabeth Osterhus, and Sharon Taba, "History of the Medical Home Concept," *Pediatrics*, Vol. 113, Supp. 4, 2004, pp. 1473–1478.

[2] Mark W. Friedberg, Deborah J. Lai, Peter S. Hussey, and Eric C. Schneider, "A Guide to the Medical Home as a Practice-Level Intervention," *American Journal of Managed Care*, Vol. 15, Supp. 10, December 15, 2009, pp. S291–S299.

[3] Future of Family Medicine Project Leadership Committee, "The Future of Family Medicine: A Collaborative Project of the Family Medicine Community," *Annals of Family Medicine*, Vol. 2, Supp. 1, 2004, pp. S3–S32; Michael Barr and Jack Ginsburg, *The Advanced Medical Home: A Patient-Centered, Physician-Guided Model of Health Care*, Philadelphia, Pa.: American College of Physicians, 2006; American Academy of Family Physicians, American Academy of Pediatrics, American College of Physicians, and American Osteopathic Association, *Joint Principles of the Patient-Centered Medical Home*, March 7, 2007.

[4] Allan H. Goroll, Robert A. Berenson, Stephen C. Schoenbaum, and Laurence B. Gardner, "Fundamental Reform of Payment for Adult Primary Care: Comprehensive Payment for Comprehensive Care," *Journal of General Internal Medicine*, Vol. 22, No. 3, 2007, pp. 410–415.

initiatives feature at least one element of payment reform that is intended to reduce the percentage of practice revenue associated with fee-for-service patient visits.[5]

The five desired outputs articulated in the Joint Principles are: (1) first contact, continuous, and comprehensive care; (2) care that is coordinated across the health care system and community; (3) culturally and linguistically appropriate care; (4) safe, high-quality, evidence-based care; and (5) enhanced access to care (including between-visit care). As with the payment reform component of the Joint Principles, these outputs are consistent with Barbara Starfield and colleagues' recognition that comprehensive primary care extends beyond office visits. Starfield posited that primary care consists of serving four cardinal functions for patients: (1) providing first-contact care for new health problems, (2) comprehensive care for the majority of health conditions, (3) long-term person-focused care, and (4) care coordination across providers when multiple providers are necessary.[6]

While the Joint Principles and other reports describe an idealized vision of primary care, they do not explain how to operationalize this vision through concrete steps that would create or define medical homes.[7] To fill this vacuum, sponsors of PCMH initiatives created their own methods for transforming primary care practices, often initially drawing on NCQA's Physician Practice Connection (PPC)-PCMH recognition tool (first operationalized in 2008). The PPC-PCMH, both in its original and revised versions, specifies a number of tools (e.g., EHRs) and activities (e.g., providing patient education materials, tracking referrals) that practices must adopt to attain recognition as a medical home.[8] While NCQA did not intend for the PPC-PCMH to serve as an operational definition of the medical home, its widespread use by medical home initiatives has resulted in its current status as the predominant de facto operational definition.[9] Over time, other recognition organizations, including the AAAHC and The Joint Commission (TJC) have developed alternative medical home recognition programs, and, as of 2017, 12,000 practice sites have received NCQA PCMH recognition, 1,400 sites have been certified through TJC, and 6,000 sites have been certified by AAAHC.[10]

The majority of initiatives included in our review used the PCMH model as defined by NCQA to guide practices and to assess the extent of implementation. However, there were several notable exceptions. The VA-PACT model (used in the VA Health System) emphasizes three attributes of advanced primary care: (1) accessible, continuous, and coordinated care; (2)

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[5] Asaf Bitton, Carina Martin, and Bruce E. Landon, "A Nationwide Survey of Patient Centered Medical Home Demonstration Projects," *Journal of General Internal Medicine,* Vol. 25, No. 6, 2010, pp. 584–592.

[6] Barbara Starfield, Leiyu Shi, and James Macinko, "Contribution of Primary Care to Health Systems and Health," *Milbank Quarterly*, Vol. 83, No. 3, 2005, pp. 457–502.

[7] Future of Family Medicine Project Leadership Committee, 2004; Barr and Ginsburg, 2006; American Academy of Family Physicians, American Academy of Pediatrics, American College of Physicians, and American Osteopathic Association, 2007.

[8] NCQA, *Standards and Guidelines for Physician Practice Connections—Patient-Centered Medical Home (PPC-PCMH)*, Washington, D.C., 2008; NCQA, *Draft Standards for Patient-Centered Medical Home (PCMH)*, Washington, D.C., 2011.

[9] NCQA updated its standards for achieving PCMH recognition in 2011, 2014, and 2017. See Robert A. Berenson, Kelly J. Devers, and Rachel A. Burton, "Will the Patient-Centered Medical Home Transform the Delivery of Health Care?: Timely Analysis of Immediate Health Issues," Urban Institute and Robert Wood Johnson Foundation, August 2011.

[10] Some practices may apply for and receive PCMH recognition through more than one program.

patient-centered care; and (3) team-based care. The VA-PACT program uses a "home-grown" index of implementation (rather than relying on NCQA's standards). The index consists of 53 items clustered within eight domains—none of which focus on practice infrastructure since VA facilities already have an advanced health information and performance measurement infrastructure.[11]

Similarly, as part of the CPC initiative, CMS developed a medical home model based on five key care delivery functions: (1) access and continuity, (2) planned care for chronic conditions and preventive care, (3) risk-stratified care management, (4) patient and caregiver engagement, and (5) coordination of care across the medical neighborhood.[12] CPC practices were required to meet milestones in each year of the demonstration to help practices advance in each of the five areas. The milestones were specified by CMS and required practices to implement or sustain increasingly advanced capabilities during each year of the initiative.

Finally, in the seven-state MAPCP Demonstration, states defined the PCMH model in several different ways. Five states required practices to follow the NCQA PCMH model; one state (Minnesota) used its own standards (Health Care Homes); North Carolina used NCQA recognition in conjunction with the state's Blue Cross Blue Shield Blue Quality Physician Program (BQPP) standards;[13] and in Michigan, practices were given a choice between following the NCQA model or the state's own standards.[14]

Practice Changes Commonly Associated with PCMH Implementation

Practices implementing PCMH models often undertake a wide range of changes to staffing, infrastructure, and the delivery of care. Many PCMH initiatives use a "change package"—a suite of strategies and tactics for achieving successful implementation of PCMH model components— recognizing that different approaches may be more or less appropriate depending on a practice's baseline capabilities and context. In this section, we provide an overview of common changes undertaken by practices in pursuit of PCMH recognition. Of note, while we discuss many discrete strategies, a widely held view among PCMH experts is that PCMH models require an integrated approach in which new tools, protocols, and staffing must be linked simultaneously

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[11] Karin M. Nelson, Christian Helfrich, Haili Sun, Paul L. Hebert, Chuan-Fen Liu, Emily Dolan, Leslie Taylor, Edwin Wong, Charles Maynard, Susan E. Hernandez, William Sanders, Ian Randall, Idamay Curtis, Gordon Schectman, Richard Stark, and Stephan D. Fihn, "Implementation of the Patient-Centered Medical Home in the Veterans Health Administration: Associations with Patient Satisfaction, Quality of Care, Staff Burnout, and Hospital and Emergency Department Use," *JAMA Internal Medicine*, Vol. 174, No. 8, August 2014, pp. 1350–1358.

[12] Deborah Peikes, Grace Anglin, Erin Fries Taylor, Stacy Dale, Ann O'Malley, Arkadipta Ghosh, Kaylyn Swankoski, Lara Converse, Rosalind Keith, Mariel Finucane, Jesse Crosson, Anne Mutti, Thomas Grannemann, Aparajita Zutshi, and Randall Brown, *Evaluation of the Comprehensive Primary Care Initiative: Third Annual Report*, Princeton, N.J.: Mathematica Policy Research, 2016.

[13] The BQPP requires practices to use electronic prescribing, file claims electronically, complete cultural competency training, and provide expanded access to care.

[14] Donald Nichols, Susan Haber, and Melissa Romaire, et al., *Evaluation of the Multi-Payer Advanced Primary Care Practice (MAPCP) Demonstration*, Research Triangle Park, N.C.: RTI International, June 2017.

into new workflows to be effective and sustainable. In the words of the NDP evaluators, "[t]ransformation is more than a series of incremental changes."[15]

Expanded Staffing

In many PCMH initiatives, practices focus initially on hiring staff to fill new roles or increasing the number of full-time staff in existing roles. Practices vary substantially in strategies for expanding staff. For example, in the MAPCP Demonstration, many practices reported using the demonstration's supplemental payments to cover the salaries of new care managers, and among practices participating in the CPC initiative, care managers were far more common among PCMH practices (41.7 percent) than non–PCMH practices (11.6 percent).[16] Care managers play vital roles, which can include identifying and engaging high-need patients, providing education to patients, coordinating self-care group visits, assisting patients with transitions from inpatient settings, and helping to engage patients both before and after appointments. Medical assistants are often used to complement care managers in helping to provide greater levels of patient education, monitoring use of preventive services, reconciling medications, arranging specialty care, and conducting pre- and post-visit planning and documentation. Substantial amounts of training may be required when existing staff are asked to take on new roles required by PCMH models.

Some practices expand their staffs to include a more multidisciplinary set of clinical professionals with specialized training that can better address a wide range of patient needs. For example, some practices hire clinical pharmacists, registered dietitians, social workers, behavioral health professionals, diabetes educators, or public health nurses to provide health coaching and help coordinate patient care. While a key principle of PCMH is that team-based care can promote greater levels of patient engagement, one large study showed that only about one-quarter of practices with PCMH recognition included pharmacists, social workers, community service coordinators, and nutritionists on their care teams.[17]

Improving Access and Continuity

Practices may need to hire additional staff to expand their hours of operation beyond normal business hours, including weekends. Other strategies for expanding access include implementing open-access scheduling (i.e., allowing patients to schedule same-day appointments), expanding telephone access for triage service, and using web-based patient portals. MAPCP demonstration practices used a range of strategies to improve access, including allocating a fixed proportion of their appointments for same-day appointments and implementing a system to track the third-next-available appointment—a commonly used metric of timely access to care.[18] To provide after-hours access, some practices may rotate responsibility for after-hours shifts.

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[15] Paul A. Nutting, Benjamin F. Crabtree, William L. Miller, Kurt C. Stange, Elizabeth Stewart, and Carlos Jaén, "Transforming Physician Practices to Patient-Centered Medical Homes: Lessons from the National Demonstration Project," *Health Affairs*, Vol. 30, No. 3, 2011, pp. 439–445.

[16] Nichols et al., 2017; Deborah N. Peikes, Robert J. Reid, Timothy J. Day, Derekh D. F. Cornwell, Stacy B. Dale, Richard J. Baron, Randall S. Brown, and Rachel J. Shapiro, "Staffing Patterns of Primary Care Practices in the Comprehensive Primary Care Initiative," *Annals of Family Medicine*, Vol. 12, No. 2, 2014, pp. 142–149

[17] Peikes et al., 2014.

[18] Nichols et al., 2017.

Some practices use patient portals to improve engagement and facilitate communication with staff. In the MAPCP Demonstration, for example, practices used patient portals to allow patients to request medication refills, view medication lists, review laboratory test results, request appointments, view visit summaries, and communicate with providers using secure messaging.[19] Some practices make a concerted effort to register patients on the practice's portal.[20] MAPCP providers often view their portals as time-saving and useful for interacting with patients, and patients also tend to value them.

Enhanced Care Management

To improve patient management, practices often improve their pre-visit planning, create care plans with clearly defined treatment goals, identify barriers to achieving these goals, and give patients clinical summaries of their visits.[21] Many practices establish disease registries to identify gaps in care for patients with particular conditions.[22] Some practices use team huddles or "teamlets" comprising a primary care physician, nurse care manager, nursing assistant or licensed nurse practitioner, and administrative associate to improve communication and coordination.[23] To optimize care management, practices often use care managers in a variety of ways: to identify patients due for preventive services and proactively schedule appointments, to provide educational resources to patients to help them improve their ability to manage chronic conditions, and to serve as a resource for patients between visits. Care managers may also have the role of identifying frequent ED users and periodically checking in with them by phone to better understand their needs. Other practice staff might educate patients on the importance of avoiding the ED for nonurgent care.[24] Risk-stratified care management—in which the level of management is tailored to a patient's level of need or risk of adverse outcomes—is one of the most widely embraced strategies for improving patient care.[25] However, in the CPC initiative, it was a strategy that was pursued only in the later stages of implementation.[26] Some advanced practices collect data on patients' family support and social service needs to help assign patients to risk categories.[27]

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[19] Nichols et al., 2017.

[20] Peikes et al., 2014.

[21] Nichols et al., 2017.

[22] Randall C. Gale, Steven M. Asch, Thomas Taylor, Karin M. Nelson, Jeff Luck, Lisa S. Meredith, and Christian D. Hefrich, "The Most Used and Most Helpful Facilitators for Patient-Centered Medical Home Implementation," *Implementation Science*, Vol. 10, No. 52, 2015; Paul A. Nutting, William L. Miller, Benjamin F. Crabtree, Carlos R. Jaén, Elizabeth E. Stewart, and Kurt C. Stange, "Initial Lessons from the First National Demonstration Project on Practice Transformation to a Patient-Centered Medical Home," *Annals of Family Medicine*, Vol. 7, No. 3, 2009, pp. 254–260.

[23] Gale et al., 2015.

[24] Peikes et al., 2014

[25] Peikes et al., 2014.

[26] Nichols et al., 2017.

[27] Peikes et al., 2014.

Improving Care Coordination

Expanding the number of care coordinators in a practice is often viewed as critical to the success of PCMH implementation efforts. Care coordinators in the MAPCP Demonstration had wide variation in their clinical backgrounds (e.g., RNs, medical assistants, social workers) and performed several key functions, including obtaining patient records from other providers and contacting patients with recent hospitalizations or ED visits to reconcile medications by phone and schedule follow-up appointments.[28] Practices participating in the CPC initiative cited consistently arranging follow-up visits after hospital discharges or ED visits as one of the most critical strategies to improving patient care.[29] Other care coordination strategies include identifying medical or social service needs and securing referrals to specialists or social service providers in the community for services that cannot be provided by the care team. Some practices might also enter into agreements with neighboring hospitals, which help to ensure the timely sharing of information so that practices can better manage their patients when they transition across care settings.[30]

Implementation Differences in Small Practices

There were few notable differences in how small practices implemented PCMH strategies. However, in at least one study, small practices tended to report limited implementation of formal care teams, hired fewer care managers, were less likely to use formal measurement systems, and were less likely to use formal PDSA techniques.[31]

Effects of PCMH Implementation on Quality of Care, Utilization, Costs, and Patient Experiences

In this section, we provide an overview of evidence on the effect of PCMH model implementation on patient outcomes. We begin by summarizing evidence from recent evaluations of large PCMH initiatives that tend to include a wide range of practice types and use rigorous evaluation methods. These studies include a meta-analysis of 11 controlled studies that included some of the most important demonstrations from the past decade and three large-scale demonstrations sponsored by CMS that were not included in the meta-analysis. We also present evidence on the effect of PCMH implementation for small practices. We found no studies examining effects on rural practices specifically.

Effects of PCMH Implementation from Large Demonstrations

A 2017 meta-analysis examining the impact of 11 PCMH initiatives on utilization, spending, and quality outcomes found little or no improvement in any outcome over time for demonstration

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[28] Nichols et al., 2017.

[29] Peikes et al., 2014.

[30] Peikes et al., 2014.

[31] Carolyn A. Berry, Tod Mijanovich, Stephanie Albert, Chloe H. Winther, Margaret M. Paul, Mandy Smith Ryan, Colleen McCullough, and Sarah C. Shih, "Patient-Centered Medical Home Among Small Urban Practices Serving Low-Income and Disadvantaged Patients," *Annals of Family Medicine*, Vol. 11, Supp. 1, 2013, pp. S82–S89.

practices relative to comparison practices.[32] Demonstration practices achieved greater reductions in specialty visits and larger increases in cervical cancer screenings, but both effects were driven by a single study that received high weight in the analysis and the effect was eliminated when the study was dropped from the analysis. In a subgroup analysis limited to high-morbidity patients, the authors found a reduction in spending associated with PCMH implementation, as well as an increase in rates of breast cancer screening. For several measures, including rates of primary care visits, avoidable ED visits, total ED visits, inpatient admissions, colorectal cancer screenings, and diabetic eye exams, the meta-analysis revealed statistically significant heterogeneity across the 11 studies, suggesting that the unique design of the demonstrations or practice context may be associated with positive or negative effects of PCMH implementation, but the overall effect on most outcomes over a two-year period appears to be minimal.

Two recent multipayer initiatives sponsored by CMS—MAPCP and CPC—represent some of the largest and most-rigorous tests of PCMH models to date, involving nearly 1,500 practices in 15 states across the two initiatives.[33] Overall, there were no consistent changes in utilization across both initiatives. The CPC evaluators found a slower rate of increase for ED visits by 2 percent over three years and a 5-percent reduction in the likelihood of return visits to EDs within 30 days in the most recent year of the evaluation (Year 3), but found no other changes in utilization over time. Among states participating in the MAPCP Demonstration, there were limited or inconsistent changes in utilization among demonstration practices. The authors found no significant reductions in outpatient-only ED visits and the majority of states either experienced no change or experienced an increase in preventable inpatient admissions. However, the authors did find significant improvements in individual states: Practices in Rhode Island had increases in primary care visits, practices in Vermont and North Carolina had reductions in specialty care visits, and practices in Michigan had lower rates of 30-day unplanned readmissions.

Neither of these two initiatives was able to demonstrate a consistent reduction in Medicare expenditures over time associated with PCMH implementation. Medicare expenditures in MAPCP demonstration practices were $171 million higher than in non–PCMH comparison practices, although there was substantial variation across the seven demonstration states. In the CPC initiative, Medicare expenditures increased more slowly for demonstration practices ($9 less per beneficiary per month) relative to comparison practices, but after accounting for the additional fees paid to providers to facilitate transformation, expenditures increased for demonstration practices ($7 more per beneficiary per month), although this result was not statistically significant. Similar to the MAPCP, a subset of CPC regions was associated with cost savings, although these effects were observed in a single demonstration year and no regions had statistically significant net savings over the entire evaluation period.

Changes in quality outcomes and patient experience were also limited across the two demonstrations. Medicare beneficiaries in the CPC initiative experienced improvements in process quality measures related to diabetes care, but only among high-risk beneficiaries. In the

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[32] Anna D. Sinaiko, Mary Beth Landrum, David J. Meyers, Shehnaz Alidina, Daniel D. Maeng, Mark W. Friedberg, Lisa M. Kern, Alison M. Edwards, Signe Peterson Flieger, Patricia R. Houck, Pamela Peele, Robert J. Reid, Katharine McGraves-Lloyd, Karl Finison, and Meredith B. Rosenthal, "Synthesis of Research on Patient-Centered Medical Homes Brings Systematic Differences Into Relief," *Health Affairs*, Vol. 36, No. 3, 2017, pp. 500–508.

[33] Nichols et al., 2017; Peikes et al., 2016.

MAPCP Demonstration, changes in screening tests for diabetes and ischemic vascular disease were either mixed or consistently worse over time. Lastly, CPC examined patient experience through the Consumer Assessment of Healthcare Providers & Systems (CAHPS) surveys. While the authors observed slight improvements in individual items, there were no statistically significant changes in any of the six CAHPS composite measures. Qualitative interviews and focus groups, coupled with CAHPS PCMH data from MAPCP demonstration practices, suggest that there were some improvements in patient experience but that the effects were inconsistent across states.

The evaluation of the FQHC APCP Demonstration assessed implementation of medical homes in approximately 500 safety net practices across the United States.[34] The findings from this study may be most applicable to IHS facilities, given that 69 percent of FQHCs included in the demonstration were located in rural areas and many FQHCs have relatively small staffs. Medicare beneficiaries who received care from demonstration FQHCs had higher rates of FQHC visits, inpatient admissions, and ED visits across the three-year demonstration relative to comparison FQHCs. The authors concluded that Medicare beneficiaries were experiencing improvements in access to primary care as a result of PCMH implementation, and that demand for specialty care may be increasing as a result. Although there were no significant changes in total Medicare expenditures or inpatient expenditures, demonstration FQHCs were associated with an increase in physician expenditures of $37 per 1,000 beneficiaries in Year 3 relative to comparison FQHCs. The authors examined changes in process measures for patients with diabetes or ischemic vascular disease and found greater improvements for demonstration FQHCs in administering eye exams and nephropathy tests for patients with diabetes, as well as a composite measure of receiving four recommended diabetes tests. Lastly, the authors' examination of changes in patient experience and health status found little to no significant findings overall.

An important caveat in interpreting the existing evidence on the impact of PCMH models is that the time frame during which the model is assessed is almost always limited to a period of three years or less. A common theme from PCMH implementation studies is that implementation invariably takes longer than the time frame allowed for in these initiatives. At the end of the MAPCP Demonstration, for example, many practices noted that they were "just getting started with the real work" and that the benefits of the model would become manifest in the coming years.[35]

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[34] Katherine L. Kahn, Justin W. Timbie, Mark W. Friedberg, Peter Mendel, Liisa Hiatt, Emily K. Chen, Amii M. Kress, Christine Buttorff, Tara Lavelle, Beverly A. Weidmer, Hank Green, Mallika Kommareddi, Rosalie Malsberger, Aaron Kofner, Afshin Rastegar, and Claude Messan Setodji, *Evaluation of CMS's Federally Qualified Health Center (FQHC) Advanced Primary Care Practice (APCP) Demonstration: Final Report*, Santa Monica, Calif.: RAND Corporation, RR-886/2-CMS, 2017; Justin W. Timbie, Claude M. Setodji, Amii Kress, Tara A. Lavelle, Mark W. Friedberg, Peter J. Mendel, Emily K. Chen, Beverly A. Weidmer, Christine Buttorff, Rosalie Malsberger, Mallika Kommareddi, Afshin Rastegar, Aaron Kofner, Lisa Hiatt, Ammarah Mahmud, Katherine Giuriceo, and Katherine L. Kahn, "Implementation of Medical Homes in Federally Qualified Health Centers," *The New England Journal of Medicine*, Vol. 377, No. 3, 2017, pp. 246–256.

[35] Nichols et al., 2017.

Effects of PCMH Implementation on Small Practices

We identified only a handful of studies that assessed the impact of PCMH models on quality and clinical outcomes in small practice settings. However, one of the challenges with interpreting the results of these studies is that they do not always focus exclusively on small practices. Several studies included a small number of medium and large practices, which may have a disproportionate effect on estimates of PCMH impacts if these practices account for a large share of patients included in the analysis.

The PCMH NDP, which involved 36 mostly small and independent practices, represents the most rigorous assessment of a PCMH model in small practice settings. The NDP evaluation found that the adoption of a PCMH model was associated with improved access, improved quality (using a 16-indicator composite measure), and better performance on prevention measures (a subset of the 16 indicators).[36] Over the two-year time frame of the NDP, implementation of the PCMH model improved patients' reports of access to care, but the model was not associated with changes in health status, satisfaction with care, patient empowerment, comprehensive care, coordination of care, personal relationship over time, or global practice experience.

A smaller initiative that also used a randomized design but focused exclusively on community-based, solo, and small practices was sponsored by Emblem Health, an insurer in New York City.[37] As part of the two-year pilot, 18 practices (representing 43 physicians) were randomized to an intervention arm that received financial and care management support, while 14 practices (representing 24 physicians) were randomized to a control arm that received no support.

Demonstration practices achieved greater improvements in only two of the 11 quality indicators used in the evaluation: breast cancer screening and blood pressure control for patients with hypertension. Similarly, among the ten measures of efficiency examined, which included measures of cost and relative resource use, intervention practices were associated with improvements in only one area—a reduced rate of ED visits.

CareFirst Blue Cross Blue Shield of Maryland launched a PCMH model in 2011 that included a large percentage of small practices.[38] By the third year of the initiative, participating practices had achieved reductions in spending of $109 per member per year. The program was also associated with a 2.4-percent reduction in inpatient admissions and a 3.2-percent reduction in ED visits. The evaluation relied on claims analyses and did not systematically evaluate patient or provider experiences.

Wang et al. examined PCMH implementation among practices participating in the New York City Department of Health and Mental Hygiene's Primary Care Information Project (PCIP). The analysis included only practices with five or fewer clinicians and that had an EHR at the baseline

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[36] Benjamin F. Crabtree, Paul A. Nutting, William L. Miller, Kurt C. Stange, Elizabeth E. Stewart, and Carlos Roberto Jaén, "Summary of the National Demonstration Project and Recommendations for the Patient-Centered Medical Home," *Annals of Family Medicine*, Vol. 8, Supp. 1, 2010, pp. S80–S90, S92.

[37] Judith Fifield, Deborah Dauser Forrest, Joseph A. Burleson, Melanie Martin-Peele, and William Gillespie, W. "Quality and Efficiency in Small Practices Transitioning to Patient Centered Medical Homes: A Randomized Trial," *Journal of General Internal Medicine*, Vol. 28, No. 6, 2013a, pp. 778–786.

[38] Alison Cuellar, Lorens A. Helmchen, Gilbert Gimm, Jay Want, Sriteja Burla, Bradley J. Kells, Iwona Kicinger, and Len M. Nichols, "The CareFirst Patient-Centered Medical Home Program: Cost and Utilization Effects in Its First Three Years," *Journal of General Internal Medicine*, Vol. 31, No. 11, 2016, pp. 1382–1388.

assessment.[39] The analysis compared practices that achieved PCMH recognition over the study period with those that did not achieve recognition on seven measures of clinical quality or documentation (i.e., recording body mass index or smoking status in the EHR). The authors found significant improvements in blood pressure control, but lower rates of HbA1c testing for patients with diabetes, lower rates of documenting body mass index, and no changes for the other three measures.

A cross-sectional study by Shi et al. examined the association between a practice's total PCMH score (reflective of the number of PCMH components that have been implemented at the practice) with quality measures in health centers participating in the SNMHI.[40] This study focused on health centers located throughout the United States with an average of eight full-time primary care physicians per 10,000 patients. Overall, the authors found a mixed association between a practice's total PCMH score and performance on quality and outcome measures. While the total PCMH score was not associated with performance on any quality measure, the authors found limited effects on select PCMH domains. For example, greater access and communication was significantly associated with better diabetes control; effective communication and coordination with external partners and resources were associated with higher rates of childhood immunizations; and care management strategies were also associated with higher cervical cancer screening rates, but in general, no PCMH effects were observed across quality measures related to diabetes and hypertension control and preventive screenings.

Overall, estimates of the impact of PCMH models on small practices resemble those of the broader PCMH literature. Few changes in clinical quality were observed, and the direction of the effects was often mixed for measures that did change differentially between intervention and comparison practices. Among the few studies that included assessments of changes in patient experience, none documented substantial changes as a result of the PCMH model. Only one of two studies we examined that assessed spending outcomes documented reductions in spending. The limited effects of PCMH implementation among small practices could be due to limitations of the PCMH models, insufficient practice supports, the short duration of the evaluation period, or other factors.

Barriers to PCMH Implementation

Given the breadth of changes typically required by practices to implement PCMH models, it is perhaps unsurprising that the implementation of individual components varies across practices. For example, in the PCMH NDP, relatively few practices were able to implement strategies for improving the patient-centeredness of care or coordinating care across the medical neighborhood—including care provided by specialists, hospitals, and social service providers.[41] Notably, these were two of the same areas (among others) in which practices exhibited lower

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[39] Jason J. Wang, Chloe H. Winther, Jisung Cha, Colleen M. McCullough, Amanda S. Parsons, Jesse Singer, and Sarah C. Shih, "Patient-Centered Medical Home and Quality Measurement in Small Practices," *The American Journal of Managed Care*, Vol. 20, No. 6, 2014, pp. 481–489.

[40] Leiyu Shi, Diana C. Lock, De-Chih Lee, Lydie A. Lebrun-Harris, Marshall H. Chin, Preeta Chidambaran, Robert S. Nocon, Jinsheng Zhu, and Alek Sripipatana, "Patient-Centered Medical Home Capability and Clinical Performance in HRSA–Supported Health Centers," *Medical Care*, Vol. 53, No. 5, 2015, pp. 389–395.

[41] Nutting et al., 2011.

levels of achievement in demonstrations over the ensuing five-year period.[42] In this section, we explore a wide range of barriers that may result in uneven implementation of PCMH models.

Difficulty Redesigning Practice Workflows

Despite implementing many individual components of the PCMH model, changing care processes to make consistent use of new infrastructure or protocols was a much larger problem. As noted in the PCMH NDP, the components that tended to be implemented most successfully were those "that could be adopted with minimal impact on individual roles and work identities and that had little ripple effect on other practice processes."[43] Model components in that initiative that were easier to implement included same-day appointments, electronic prescribing, and improved patient access to laboratory results. By contrast, reconfiguring work processes— such as using diabetes registries for population management—was a much harder task. Reports from other studies indicate that integrating services with community providers, wellness promotion, and team-based care also present challenges for similar reasons. Using newly developed practice infrastructure on a regular basis entails a large cultural change, which, according to some, requires a much longer timeline for workflows to become routinized.[44] Other PCMH evaluators note that a "plug and play" approach to implementing components of the PCMH model ignores the fact that practices' "internal relationship systems (e.g., interpersonal communication, trust, and respectful interaction) must be built simultaneously or else the effort is likely to fail."[45] In fact, a major initial barrier is internalizing the full scope of changes that must be made in most practices.

Staffing Challenges

While adding care managers/coordinators was commonly viewed as the most transformative component of the PCMH model in the CPC initiative, not all practices may be able to add these staff. In North Carolina's MAPCP Demonstration, relatively few new care managers were hired, and evaluators observed a concomitant worsening in staff experiences as existing care managers were often asked to take on increased workloads.[46] In addition, some practices struggled to differentiate the roles of care managers vis-à-vis other members of the care team.[47] This finding highlights the fact that implementing PCMH models also requires stable, high-functioning care teams in which team members have shared goals to meet process and outcome goals, clear

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[42] Peikes et al., 2016; Shehnaz Alidina, Eric C. Schneider, Sara J. Singer, and Meredith B. Rosenthal, "Structural Capabilities in Small and Medium-Sized Patient-Centered Medical Homes," *The American Journal of Managed Care*, Vol. 20, No. 7, 2014, pp. e265–e277; Judith Fifield, Deborah Dauser Forrest, Melanie Martin-Peele, Joseph A. Burleson, Jeanette Goyzueta, Marco Fujimoto, and William Gillespie, "A Randomized, Controlled Trial of Implementing the Patient-Centered Medical Home Model in Solo and Small Practices," *Journal of General Internal Medicine*, Vol. 28, No. 6, 2013b, pp. 770–777.

[43] Nutting et al., 2011.

[44] Alidina et al, 2014.

[45] Nutting et al., 2011.

[46] Nichols et al., 2017.

[47] Piekes et al., 2016.

responsibilities, mutual trust, and effective communication.[48] High staff turnover, which may be a greater problem in practices that serve high-need patient populations, can also undermine the PCMH effort.[49]

Optimizing Use of Electronic Health Records

EHRs play a critical role in documenting patient information, supporting the use of care plans, and enabling continuous quality improvement. As a result, practices without EHRs are far less likely to achieve high levels of PCMH capabilities.[50] Even practices with EHRs may struggle to use them to exchange information and improve patient care. Practices that begin PCMH transformation with new EHRs often spend the first year or more learning how to use their new EHRs rather than undertaking other workflow-oriented changes.[51] A more fundamental challenge for practices implementing registries, electronic prescribing systems, and other advanced EHR functionalities is that health IT systems often resemble "a jumble of jigsaw pieces rather than components of an integrated and interoperable system."[52] Other EHR–related challenges cited in the literature include the inability to create dynamic care plans that can evolve as a patient's unique needs change over time and concerns about EHR data accuracy.[53]

Patient Engagement

Despite the centrality of the patient experience in PCMH models, many practices face barriers engaging patients in managing their health and medical care. In fact, MAPCP practices had the lowest level of performance in the area of patient engagement and self-management. These practices cited the amount of staff time required to engage patients and provide self-management education, and lack of training in motivational interviewing and wellness as barriers to progress.[54] Other practices have noted that building relationships between a patient and his or her care team—particularly relationships with care managers—as opposed to solely a patient's personal physician can be a struggle that can limit practices' ability to help patients achieve behavior modification.[55] Progress in implementing shared decisionmaking processes also often slows other areas for many practices, and developing more-efficient clinical workflows into which these processes could be integrated may improve performance in this area.[56] Finally, while

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[48] Pamela Mitchell, Matthew Wynia, Robyn Golden, Bob McNellis, Sally Okun, C. Edwin Webb, Valerie Rohrbach, and Isabelle Von Kohorn, *Core Principles and Values of Effective Team-Based Health Care*, Washington, D.C.: Institute of Medicine, October 2012.

[49] Nichols et al., 2017.

[50] Yue Gao, Robert S. Nocon, Kathryn E. Gunter, Ravi Sharma, Quyen Ngo-Metzger, Lawrence P. Casalino, and Marshall H. Chin, "Characteristics Associated with Patient-Centered Medical Home Capability in Health Centers: A Cross-Sectional Analysis," *Journal of General Internal Medicine*, Vol. 31, No. 9, 2016, pp. 1041–1051; Shi et al., 2015.

[51] Nichols et al., 2017.

[52] Nutting et al., 2011.

[53] Peikes et al., 2016.

[54] Nichols et al., 2017.

[55] Peikes et al., 2016.

[56] Peikes et al., 2016; Berry et al., 2013.

patient portals and secure messaging were viewed as tools to improve communication between patients and clinicians, older patients are far less likely to use these modes of communication.[57]

Coordinating Care Across the Medical Neighborhood

Across many studies, one of the most difficult components of the PCMH model to master was care coordination across the medical neighborhood. Limitations in health information exchange between providers participating in the CPC initiative were thought to impede the ability of practices to provide adequate levels of follow-up care after visits to specialists or after hospitalizations and ED visits.[58]

Changing Practice Culture

Many practices appear to have had difficulty changing deeply engrained roles and practices and shifting toward team-based care.[59] In the PCMH NDP, role changes were found to be most difficult for physicians, who felt that primary care was "based on a strong, trusting relationship between a patient and a physician" and moving to a team-based model posed a major challenge to physicians' identities.[60] Another lesson from the NDP was that practices had difficulty "seeing themselves as organizations that apply the four pillars of primary care to the needs and preferences of patients in their communities, rather than as organizations that process patients for the convenience of physicians."[61] Thus, the meaning of "patient-centered" care may require a radical change in culture for many practices. Some practices may also have difficulty changing their culture to one that embraces continuous learning through data-driven quality improvement or shifting from private, in-person, individual encounters to other modes of delivery (including telemedicine and group visits).

Financing

Given the investments required to transform practices in accordance with PCMH models, a practice's resources can be quickly depleted. Practices often used demonstration payments to finance enhancements to their EHRs and to expand staff. However, a lack of stable funding to finance transformation was cited by some practices—particularly by those that provide services to large Medicaid and uninsured populations. Many FQHCs rely on grant funding, which is often cyclical and leads to fluctuations in their ability to consistently provide enhanced services or enhanced access, and also limits their ability to plan.[62]

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[57] Peikes et al., 2016.

[58] Peikes et al., 2016.

[59] Michael T. Quinn, Kathryn E. Gunter, Robert S. Nocon, Sarah E. Lewis, Anusha M. Vable, Hui Tang, Seo-Young Park, Lawrence P. Casalino, Elbert S. Huang, Jonathan Birnberg, Deborah L. Burnet, W. Thomas Summerfelt, and Marshall H. Chin, "Undergoing Transformation to the Patient Centered Medical Home in Safety Net Health Centers: Perspectives from the Front Lines," *Ethnicity & Disease*, Vol. 23, No. 3, 2013, pp. 356–362.

[60] Nutting et al., 2011.

[61] Nutting et al., 2011.

[62] Quinn, et al., 2013.

Barriers to PCMH Implementation for Small Practices

Time constraints and limited resources to implement PCMH components appear to be a particular concern for small practices.[63] Many small practices struggled with implementing multiple PCMH model components simultaneously into integrated systems of care because of the substantial resources required. Some small practices cited the lack of a "guidebook" as a contributor to the burden of practice transformation.[64] Other practices noted that the quality measurement and reporting burden or the administrative burden of applying for formal PCMH recognition (particularly the documentation requirements associated with the process) were common stressors during PCMH implementation.[65] Among FQHCs, a health center's total revenue has been shown to be a key factor predicting successful PCMH implementation.[66] In another study of clinics in New Orleans, practices with a larger number of full-time primary care physicians were found to have higher PCMH capabilities.[67] Among practices that successfully implemented PCMH models, financial resource constraints and the lack of broader payment reform are often noted as barriers to the sustainability of their PCMH efforts.[68]

Despite the critical role of care managers in successful PCMH implementation, hiring full-time care managers can be a particular challenge for some small practices.[69] Small practices reported valuing care managers' ability to assist with complex patients, for whom physicians are not able to devote enough time during a patient encounter.[70] At the same time, turnover among care managers was particularly disruptive to small practices—a finding that is commonly reported by safety net practices.[71]

Small practices appear to have greater difficulty implementing the health IT–focused components of PCMH models. In a study comparing PCMH capabilities in practices of varying sizes (1–2, 3–7, 8–12, and 13–19 physicians), Rittenhouse found substantially lower scores on a medical home index for the smallest practices relative to the largest practices with a consistent trend across the groups.[72] The smallest practices were not only less likely to use EHRs but were also less likely to use other health IT–supported tools, such as electronic prescribing, registries, and clinical decision support. Among practices that used registries, small practices reported

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[63] Scholle et al., 2013.

[64] Alidina et al., 2014.

[65] Berry et al., 2013; Peikes et al., 2016.

[66] Shi et al., 2017.

[67] Diane R. Rittenhouse, Laura A. Schmidt, Kevin J. Wu, and James Wiley, "The Post-Katrina Conversion of Clinics in New Orleans to Medical Homes Shows Change is Possible, but Hard to Sustain," *Health Affairs*, Vol. 31, No. 8, 2012, pp. 1729–1738.

[68] Alidina et al., 2014.

[69] Peikes et al., 2016.

[70] Gilbert Gimm, Jay Want, Dan Hough, Treniese Polk, Margaret Rodan, and Len M. Nichols, "Medical Home Implementation in Small Primary Care Practices: Provider Perspectives," *Journal of the American Board of Family Medicine*, Vol. 29, No. 6, 2016, pp. 767–774.

[71] Quinn et al., 2013.

[72] Diane R. Rittenhouse, Lawrence P. Casalino, Stephen M. Shortell, Sean R. McClellan, Robin R. Gillies, Jeffrey A. Alexander, and Melinda L. Drum, "Small and Medium-Size Physician Practices Use Few Patient-Centered Medical Home Processes," *Health Affairs*, Vol. 30, No. 8, 2011, pp. 1575–1584.

challenges maintaining multiple disease registries simultaneously.[73] Finally, limited resources constrain small practices' abilities to hire IT consultants or staff to support EHR modifications that are often needed to support documentation of PCMH milestones or for quality reporting.

Enhancing communication with patients and coordinating care may also be more difficult in smaller practices. While portals may be a strategy used by some small- and medium-sized practices, establishing and maintaining patient portals often requires vendor support, which may limit their use in small practices.[74] In addition, little evidence exists on the effectiveness of using patient portals for individuals with limited health literacy or limited English-language proficiency. Many care coordination challenges faced by small practices are often framed as health IT challenges—especially the lack of "systems that allow for real time, asynchronous communication across the medical neighborhood."[75]

Relationships and affiliations with local hospitals were an important factor helping FQHCs achieve high levels of PCMH capabilities.[76] Small, independent practices may have difficulties engaging hospitals to notify them about patients who are admitted or obtaining information about their patients during or after an admission.[77] These findings are also consistent with those from the CPC initiative, in which practices that were affiliated with health systems reported having greater access to resources that were critical to the transformation process, such as access to behavioral health providers, pharmacists, and health IT support as compared with small, independent practices.[78]

Facilitators of PCMH Implementation

Strong, Visible Leadership

Consistent with the broader quality improvement literature, the motivation of a practice's clinical leadership and the extent to which leadership actively participate in transformation efforts were widely viewed as key facilitators.[79] Evaluators of the CPC initiative note that practice change was slower when a single person led the change effort as opposed to practices that used a team-based approach.[80] In other contexts, the capacity of individual change leaders to engage team members may be a more important factor than the size of the team. In particular, FQHCs with change leaders who had credibility, experience, and dedicated time to lead the

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[73] Alidina et al., 2014.

[74] Alidina et al., 2014; Larry R. Hearld, Robert Weech-Maldonado, and O. Elijah Asagbra, "Variations in Patient-Centered Medical Home Capacity: A Linear Growth Curve Analysis," *Medical Care Research and Review*, Vol. 70, No. 6, 2013, pp. 597–620.

[75] Nutting et al., 2011.

[76] Gao et al., 2016.

[77] Kahn et al., 2017.

[78] Peikes et al., 2016.

[79] Edward H. Wagner, Reshma Gupta, and Katie Coleman, "Practice Transformation in the Safety Net Medical Home Initiative: A Qualitative Look," *Medical Care*, Vol. 52, No. 11, Supp. 4, 2014, pp. S18–S22.

[80] Peikes et al., 2016.

transformation effort were more likely to achieve PCMH recognition than FQHCs without these leaders.[81]

Staff Buy-In

While strong leadership is critically important, leaders who incorporated feedback from staff early in the transformation process also were more likely to be successful in implementing PCMH models.[82] A common lesson learned from early PCMH studies was that key stakeholders—particularly clinics—were not "at the table" when the transformation process began, which could have helped to avoid resistance from these stakeholders during the process.[83] One practice from the SNMHI described it succinctly: ''Inform everyone. Involve the staff from the bottom up. No directives from above . . . that's been the best thing we ever learned.''[84]

Adaptive Reserve

Another key lesson from the PCMH NDP was that practices that were "nimble; capable of continuous learning; and adept at self-assessment, reflection, and improvisation" tended to be successful.[85] These practices were able to avoid or overcome "change fatigue" because of their ability to adapt to emerging issues throughout the transformation process. Hallmarks of practices with high levels of "adaptive reserve" include those with shared and facilitative leadership (rather than centralized and authoritarian models); a consistent vision for the change effort with aligned clinical, business, and operations units; and high levels of team functioning, including excellent communication and shared trust.[86] Successful practices had leaders who were able to strengthen the practice's adaptive reserve.

Technical Assistance Through Demonstrations

Both individualized coaching and in-person learning sessions were commonly reported to be highly valuable supports for practices participating in PCMH initiatives.[87] Practices that received individualized coaching were able to develop strategies customized to the practice's specific needs, which might have helped to expedite the transformation process.[88] In-person learning sessions offered practices an opportunity to exchange lessons learned and best practices with their peers. Similarly, site visits to high-functioning PCMHs can provide tangible evidence of the benefits of PCMH for practices in the early stages of implementation and can help change staff attitudes and increase buy-in.[89] Feedback reports on practices' quality of care, cost, and other metrics were often viewed as useful tools to guide transformation efforts and can provide

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[81] Kahn et al., 2017.

[82] Rittenhouse et al., 2011.

[83] Quinn et al., 2013.

[84] Quinn et al., 2013.

[85] Nutting et al., 2011.

[86] Nutting et al., 2011.

[87] Gale et al., 2015, p. 52; Peikes et al., 2014; Alidina et al, 2014; Scholle et al., 2013.

[88] Wagner, Gupta, and Coleman, 2014.

[89] Quinn et al., 2013.

reinforcement by showing the positive changes the PCMH model is making over time.[90] Rapid feedback is particularly important and data lags associated with claims can limit the value of feedback reports.[91] Finally, training and support for the NCQA application process has been reported to be particularly important for small practices.[92]

Conclusion

Practices across the United States have been actively implementing the components of the PCMH model—in some cases for more than a decade. These changes are wide-ranging and have included upgrading infrastructure, expanding staff, and improving care management and coordination activities. Despite the structural and cultural changes practices have implemented in pursuit of PCMH goals, PCMH models overall have not been consistently shown to produce improvements in quality of care or patient experiences or reductions in spending, although the time frame over which many PCMH demonstrations are examined may not always be adequate. The limited evidence available on the impact of PCMH models on small practices is consistent with the overall body of evidence on the effects of PCMH models. We found scant evidence on the impact of PCMH models for rural practices. A number of factors may facilitate PCMH implementation, including effective leadership, adaptive reserve, and care manager/care coordination support. However, small practices that have difficulty expanding or maintaining staff, are less able to adopt advanced health IT capabilities, and are less integrated within their medical communities may have greater challenges implementing PCMH models and realizing the long-term benefits.

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[90] Quinn et al., 2013.

[91] Peikes et al., 2016.

[92] Scholle et al., 2013.

IHS Direct Service Facilities with PCMH Recognition

PCMH Planning

1. What were your motivations for pursuing PCMH recognition/certification?

    a. Probe: Improving access, quality, coordination, patient experiences, provider and staff experiences?
    b. Probe: Financial considerations?
    c. Other reasons (*Please describe*):

2. What other types of quality improvement projects, if any, has [your Service Unit] undertaken in the past?

    a. Probe: Did any of these activities help to prepare you for the PCMH effort?
    b. Probe: What areas did the QI Project impact?

        i. Comprehensiveness of the care
        ii. Patient- and family-centeredness
        iii. Coordination of care
        iv. Accessibility of services
        v. Quality and safety of the care

3. When did you obtain PCMH recognition?
4. From which organization did [your Service Unit] obtain PCMH recognition/certification? (*Select one answer*)

    a. The Joint Commission (TJC)
    b. Accreditation Association for Ambulatory Health Care (AAAHC)
    c. NCQA
    d. Other

5. What factors influenced the decision to pursue PCMH recognition/certification from [TJC/AAAHC/NCQA/Other]?

    a. Probe: Same organization used for accreditation?
    b. Probe: Cost to apply?
    c. Probe: Expected cost of implementing changes needed to receive PCMH recognition/certification?
    d. Probe: Principles already compatible with [Service Unit]'s current practices or culture?
    e. Probe: What role did the staff play in choosing the organization from which to obtain PCMH recognition/certification?
    f. Other reasons (*Please describe*):

Implementation Strategies

6. What role did the CEO play in implementing the PCMH model at [your Service Unit]?

    a. Probe: Approving additional resources?
    b. Probe: Hiring additional staff?
    c. Probe: Fostering broad support for the PCMH effort?

7. What roles did other staff play in implementing PCMH?

    a. Probe: Staff title and their role in PCMH implementation activities?

8. What communication strategies did [your Service Unit] use to get patients and staff engaged in implementing PCMH?

    a. Probe: Employee newsletters?
    b. Probe: Staff meetings?
    c. Probe: Consultation meetings (e.g., with tribal officials, patients, and other community members)?
    d. Did you brief the local tribal leadership about your plans and request their support i.e., make them "active" stakeholders?
    e. Other (*Please describe*):

9. What specific changes did [your Service Unit] make to achieve PCMH recognition/certification? (*Select all answers that apply*)

    a. Staffing levels (*Please describe*):
    b. Staffing mix (*Please describe*):
    c. Empanelment to a designated primary care provider (*Please describe*):
    d. Empanelment to a designated primary care "team" (*Please describe*):
    e. IT systems (*Please describe*):
    f. Infrastructure/office or clinic space (*Please describe*):
    g. Scheduling procedures (*Please describe*):
    h. Care team structure/roles
    i. Changes to improve access
    j. Changes to better engage patients
    k. Changes to improve care coordination
    l. Changes to quality measurement and quality improvement activities
    m. Other (*Please describe*):

10. What training or technical assistance resources, if any, did [your Service Unit] use to implement elements of the PCMH model of care?

    a. Improving Patient Care
    b. Other consultants specializing in practice change
    c. Other (*Please describe*):
    d. Probe: How helpful were these resources?

Implementation Challenges

11. What types of barriers had to be overcome to achieve PCMH recognition/certification at [your Service Unit]? (*Select all answers that apply*)

a. Financial resources
b. Training resources for leadership
c. Training resources for staff
d. Consultant support—technical support for leadership
e. Consultant support—technical support for Staff
f. Staff resistance to change. If so, please describe.
g. Resistance from patients
h. IT capabilities
i. Infrastructure/office or clinic space capacity
j. Other (*Please describe*):

12. What was the most significant barrier [your Service Unit] overcame to achieve PCMH recognition/certification? (*Select one answer*)

a. Financial resources
b. Staff resistance to change. If so, please describe.
c. Resistance from patients
d. IT capabilities
e. Infrastructure/office or clinic space capacity
f. Other (*Please describe*):

13. How long did it take to achieve PCMH recognition/certification status after [your Service Unit] made the decision to pursue PCMH recognition/certification?

a. _____ total number of months

14. Looking back, would you have done anything differently in terms of your approach for implementing the PCMH model?

a. Probe: Change the order in which certain PCMH components were implemented?
b. Probe: Communicate transformation process or expectations differently to staff?
c. Probe: Brief tribal leadership and the local community, family, and patients in the early stages of planning?

Impact of PCMH recognition

15. What data collection or measurement activities does [your Service Unit] conduct to monitor the impact of PCMH implementation?

a. (*Please describe*):

16. How has achieving PCMH recognition/certification impacted patient experience/patient satisfaction ratings at [your Service Unit]? (*Select one answer*)

a. Higher patient satisfaction ratings after PCMH implementation
b. Lower patient satisfaction ratings after PCMH implementation
c. No change
d. For what aspects of the medical home have your patients acknowledged or expressed support, if any?

17. How has achieving PCMH recognition/certification impacted staff satisfaction or staff turnover rates at [your Service Unit]? (*Select one answer*)

a. Higher staff satisfaction after PCMH implementation
b. Lower staff satisfaction after PCMH implementation
c. No change
d. What do staff like most about the new model? What do they like least?

18. What other quality indicators have improved at [your Service Unit] since achieving PCMH recognition/certification?

   a. (*Please describe*):
   b. Probe: Have you observed measurable improvements in patient compliance with care plans or chronic disease management outcomes?

19. What factors most significantly affect [your Service Unit]'s ability to sustain its PCMH recognition/certification status? (*Select all answers that apply*)

   a. Financial resources
   b. Training resources for leadership
   c. Training resources for staff
   d. Consultant support—technical support for leadership
   e. Consultant support—technical support for staff
   f. Resistance from staff
   g. Resistance from patients
   h. IT capabilities
   i. Infrastructure/office or clinic space capacity
   j. Other (*Please describe*):

20. Are there plans at [your Service Unit] to undertake additional changes in the near term to address quality improvement and care coordination? If so, please describe.

Wrap-up

21. What PCMH implementation challenges, if any, are unique to facilities that are:

   a. Not a freestanding ambulatory clinic? (*Please describe*):
   b. Located in remote, rural areas? (*Please describe*):
   c. Small? (*Please describe*):
   d. Low-volume? (*Please describe*):

22. Has your understanding of what the "medical home" means for [your Service Unit] changed over time?

   a. Probe: Are there aspects of the medical home model that are more important or applicable to [your Service Unit]?
   b. Probe: Are there aspects of the medical home model that are less important or applicable to [your Service Unit]?

23. What advice do you have for other Service Units that are in the early stages of implementing a PCMH model of care?

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