



Overcoming Early Barriers to PCMH Practice Improvement in Family Medicine Residencies

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BACKGROUND AND OBJECTIVES: Residency programs face inevitable challenges as they redesign their practices for higher quality care and resident training. Identifying and addressing early barriers can help align priorities and thereby augment the capacity to change.

METHODS: Evaluation of the Colorado Family Medicine Residency PCMH Project included iterative qualitative analysis of field notes, interviews, and documents to identify early barriers to change and strategies to overcome them.

RESULTS: Nine common but not universal barriers were identified: (1) a practice's history reflected some negative past experiences with quality improvement or routines incompatible with transformative change, (2) leadership gaps were evident in unprepared practice leaders or hierarchical leadership, (3) resistance and skepticism about change were expressed through cynicism aimed at change or ability to change, (4) unproductive team processes were reflected in patterns of canceled meetings, absentee leaders, or lack of accountability, (5) knowledge gaps about the Patient-centered Medical Home (PCMH) were apparent from incomplete dissemination about the project or planned changes, (6) EHR implementation distracted focus or stalled improvement activity, (7) sponsoring organizations' constraints emerged from staffing rules and differing priorities, (8) insufficient staff participation resulted from traditional role expectations and structures, and (9) communication was hampered by ineffective methods and part-time faculty and residents. Early barriers responded to varying degrees to specific interventions by practice coaches.

CONCLUSIONS: Some barriers that interfere with practices getting started with cultural and structural transformation can be addressed with persistent attention and reflection from on-site coaches and by realigning the talents, leaders, and priorities already in these residency programs.

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As we endeavor to redesign primary care to better address chronic illnesses, prevention, and safety, we believe the training programs that prepare physicians for practice in these redesigned settings must also change.^{1,2} The Patient-centered Medical Home (PCMH) has recently become the leading organizing framework for comprehensive redesign to deliver higher quality primary health care.³⁻⁵ Fundamentally, the activities that transform practices rely on organizational changes amidst established organizational cultures and structures. Several theoretical frameworks for organizational change agree that cultural and structural conditions influence how change is made.⁶⁻⁹

Barriers to changes have been noted elsewhere. Residency practices that have tried to implement the chronic care model found that challenges with information systems, continuity, part-time staffing, personnel changes, physician buy-in, communication, and administrative constraints were impediments to change.^{10,11} The National Demonstration Project found that barriers to becoming PCMHs also included

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difficulties in changing roles, lack of facilitative leadership, resistance, and lack of time or energy for some changes.^{12,13} While these barriers are likely to be found in many residencies, it may not be possible to prepare for all potential barriers that occur across the entire timeline of redesign efforts. Additionally, primary care residency practices share some basic fixed variables that other practices might not, including the annual influx of new residents and outflow of trained residents, resident rotations and schedules, regulatory requirements, and obligations to sponsoring organizations.

While individual residency practices can be viewed as complex adaptive systems, Solberg has proposed a simplified model: practice priority, change process capability, and care process content are precursors to improved quality.⁹ He further noted that barriers and facilitators impede or enable change. With limited resources and practical observations that the entire redesign effort cannot be done at once,^{9,14-17} focusing attention on barriers that are early in the redesign process may help identify and overcome key challenges to priority realignment and build momentum for change process capability.

The Colorado Family Medicine Residency Patient-centered Medical Home Project is a collaborative effort of the nine family medicine residency programs and 10 residency practices in Colorado. The overall project goals are twofold: to transform the Colorado Family Medicine Residency programs into PCMH practices and to train the residents in the PCMH model of patient care. This project uses practice improvement coaches and curricular redesign specialists to facilitate the integration of the key components of the PCMH into these programs. Practices also participate in regular collaborative learning meetings. A focus of evaluation of the Colorado Residency Project was to examine qualitative data to identify significant early barriers

and the strategies to overcome these barriers.

Methods

Setting

All nine family medicine residency training programs in Colorado participated in a foundation-sponsored effort to use a facilitation-mediated change model^{12,18,19} to transform these programs and practices, via practice improvement and curriculum redesign, into PCMHs. Primary aims were for each program to (1) incorporate the elements of the PCMH model into the residency practice, (2) achieve NCQA Level II Recognition, (3) identify and address at least two clinically important conditions, (4) incorporate PCMH concepts into the residency curriculum, and (5) establish a practice improvement activity that would be sustained beyond the project.

The PCMH project provided stipends (up to \$68,000 over 3 years), coaches, biannual learning collaborative meetings, evaluation support, and access to consultation tools and resources. The 10 participating practices were enrolled in three waves to allow coaching resources to be matched to practice needs and readiness.

Early efforts in each practice focused on educating and aligning the practice's "steering committee," educating the rest of the practice about the goals and methods of the project, preparing the committee to identify and train leaders, creating functioning quality improvement (QI) teams with representation from all levels, testing change processes through Plan-Do-Study-Act (PDSA) cycles, selecting clinically important conditions for focused improvement activities, and identifying an NCQA project manager to do an initial gap analysis and work with the QI teams on gaps.

Evaluation

This report drew from a subset of the comprehensive evaluation of the Colorado PCMH Residency Project and

made use of field notes kept by the practice coaches, key informant interviews, practice summary reports, and meeting notes. Because coaches were in practices to assist them in overcoming barriers to change, their observations and experiences were keenly suited to identifying barriers and strategies to overcome them.

Data Sources

Coaches maintained field notes about each practice visit, which included an objective assessment (meeting content) and subjective assessment (reflective observation and interpretation). Early key informant interviews, field notes from collaborative sessions, practice summary reports, and meeting notes were also included in the analysis. More than 250 field notes and documents from the first 18 months of the project were used. Because of the staggered entry into the active phase of the project, the data do not include equal representation from all 10 practices.

Data Analysis

All documents were aggregated into an ATLAS.ti (version 6; ATLAS.ti Scientific Software Development GmbH, Berlin, 2010) qualitative data analysis file for initial and ongoing coding and analysis. Because field notes and documents were not specifically designed to address barriers, the lead evaluator (DF) used an editing style of analysis to first read all data sources, coding for potential challenges, obstacles, setbacks, and conflicts that could be barriers to becoming a PCMH.²⁰ The analyst then sorted and reviewed the coded barriers in context and began noting details about the nature of each barrier, including strategies or techniques to overcome the barrier. A provisional list of early barriers was defined and described with supporting examples from the documents. Coaches and the PI convened for two sessions to review and then verify, elaborate, or challenge the barriers. The second session also included a review of potential strategies to overcome the

barriers and a group discussion of the categorization of the barriers. A refined list of major and minor barriers and strategies to overcome them was compiled for further review and comment.

The barriers reported below appeared among the 10 practices; however, not all barriers and facilitators were present in all practices, nor were they experienced to the same degree or regularity. Thus, these results should not be interpreted to mean that all practices starting redesign will experience all these same barriers, nor should they be taken to mean that these barriers will not be encountered later in the redesign process. The barriers below were the targets of early facilitation work by the coaches. This project was reviewed by the Colorado Multiple Institutional Review Board and approved as exempt from further human subjects review.

Results

All nine Colorado Family Medicine Residencies and their 10 associated practices are included in the project (one program has a community health center track with its own practice). Three of the residencies have eight residents per class, four have six residents per class, one has nine residents per class, and one has six residents per year in the core program and two per year in the community health center track. At the beginning of the project, just three of the 10 practices had a fully implemented electronic health record (EHR), and one practice had an integrated information system with functions similar to an EHR. All of the program sites are in metropolitan areas (population of 50,000 or more), with seven sites in primary care health professional shortage areas. The programs vary in patient population and payer mixes, but most serve the underserved and have large Medicaid or uninsured populations.

Two broad domains of early barriers were identified during the analytic process: cultural and

structural. Cultural barriers comprise the shared history, norms, attitudes, knowledge, and routines that have developed within a practice over the years preceding initiation of the redesign effort. Structural barriers comprise the external agents, systems, requirements, and infrastructures that define operational boundaries and constraints. These structural barriers are often determined by the sponsoring organizations or accreditation organizations, on which the practice often has limited influence, such as selection of information systems, rules governing pay, and time and resource allocation in the practice. The results are presented as cultural barriers, structural barriers, and barriers that arise from both domains.

Early Cultural Barriers (Table 1)

Practice History. Most of these practices shared historical events or patterns of behaviors and attitudes that have become routine but were impediments to changing how the practice operates as a whole and thinks about change. For example, there were numerous notes about meetings starting late, key people not showing up, or control of a team meeting being taken over by faculty or administrators. Several notes pointed to categorical skepticism toward ideas from entities outside their system. Changing a practice culture takes time; however, assessing specific events or perceptions about practice improvement helped practice leaders identify specific issues that would need attention and assisted coaches in developing plans that would avoid reinforcing these historical barriers.

Leadership Gaps. While examples of effective leadership skills were seen in some practices, more commonly, practice leaders were unprepared to lead the changes being asked of their practices. In some cases, leaders of the change process had not been identified; more often leaders were simply not prepared, were late or absent from key meetings,

or lacked the necessary skills to facilitate a team-based process. Top-down, hierarchical leadership styles were ineffective at encouraging participation from staff in several practices. Although not common among these practices, several faculty leaders were disruptive, ignoring team processes or contesting group decisions. Such ineffective leadership obstructs progress and discourages open participation. Fortunately, effective leaders were found among the faculty, residents, and staff. Leadership training by the coaches helped bridge the gaps by teaching facilitative leadership skills to faculty, residents, and staff. Coaches also worked with practice leaders to identify leadership gaps and challenges and reflect on how to fill those gaps.

Skepticism and Resistance.

Contributing to the overall practice climate were some early and persistent criticisms about the suggested changes needed to become a medical home. In all of the practices there was some skepticism about change, particularly in early stages of the project. However, in some practices a more pervasive climate of pessimism or negativity emerged, sometimes as body language and eye rolling during meetings, comments about having “been there, done that,” or hostility to the medical home concept. In a few cases, practice leaders expressed defeatist or pessimistic attitudes about the changes they were leading. The negativity was a distraction that directed energy away from attempting change by focusing on what could not be done. Working with the sharpest critics early on helped prevent the skepticism and resistance from significantly undermining progress. In meetings, redirecting negativity and criticism kept the team process moving forward. Also, actively including and supporting individuals—especially residents and staff—who bring energy or enthusiasm to the work helped. In some practices, informal leaders emerged from among practice staff or clinicians.

Table 1: Early Cultural Barriers, Examples, and Strategies to Overcome Barriers

Cultural Barrier	Examples	Strategies to Overcome
Practice history	Past failed QI efforts or changes, patterns of poorly attended or canceled meetings and lack of accountability or follow through, traditional lack of staff participation or input, decision-making taken over by a few people (often faculty).	Assess leadership issues and past QI issues early and plan for addressing them, find the right language to talk about change to avoid linking to past efforts that failed or were resisted, find some early wins, allow the new team processes to run their course.
Leadership gaps	No identified leader for change effort, hierarchical leadership style, unprepared leaders, leaders who are volunteered versus volunteer themselves, disruptive or negative faculty or administrative leaders who derail group processes.	Offer formal leadership training, identify informal leaders with effective skills, provide identified leaders with basic tools for facilitative leadership, remove disruptive leaders from leadership roles, provide direct guidance on better leadership techniques, redirect negative or disruptive comments, reinforce good leadership examples.
Skepticism and resistance	Critical and defeatist comments from faculty, leaders, staff, or administrators; overt resistance or cynicism about changing processes or methods or ability to change; subtle commentary or behaviors (eye rolling, sighs, side conversations, late to or absent from meetings).	Attend to critics early on, use facilitators to redirect negativity, include people who have positive energy for change, include residents who bring enthusiasm and ideas, allow teams to work through issues and keep others on track.
Unproductive team processes	Canceled meetings, key people are late to meetings, lack of preparation for meetings, lack of accountability or follow through, no routine way for staff to contribute, low expectations for participation.	Use facilitators to help keep meetings on track, provide tools and techniques for better processes, set up mechanisms and expectations for accountability and follow through on assignments, start with small steps and changes, allow time for team process to work and to build confidence, redirect attempts by traditional leaders to take over processes, be persistent.
Knowledge gaps about PCMH	Not everyone knows change is coming, limited information about the scope of change and expectations, misinformation about PCMH or change processes.	Communicate fully to all faculty, residents, and staff; repeat messages about PCMH in different ways; provide specific examples of types of changes; set expectations for how people can be involved.

QI—quality improvement

PCMH—Patient-centered Medical Home

Ineffective Processes for Change.

Primary care practices have many clinical and non-clinical processes at work. However, patterns of inadequate team processes and meetings observed at the outset of this project included inconsistent and canceled meetings, chronic tardiness or absenteeism, lack of preparation for meetings, and lack of accountability or follow-through. Early PCMH-specific meetings often inherited these problems, resulting in stalled progress or decisions being made by traditional leaders instead of the change team. Skilled facilitation and simple tools like prepared, written agendas helped the team-based change process gain more solid

footing in practices where this was not the norm. Establishing clear assignments and expectations for the next meeting helped create better accountability for follow-through.

Knowledge Gaps About PCMH.

Residents and staff in particular appeared to know less about the PCMH and the project than the faculty leadership. Even among faculty, misinformation or lack of information contributed to misunderstandings about what was being asked of them. Because the PCMH is conceptually new, lack of information about what is involved appeared to contribute to staff and clinicians feeling overwhelmed. Filling the information

gap about PCMH changes required communication efforts that reached all faculty and staff, often with repeated concrete messages about changes and expectations for how people would be involved.

Early Structural Barriers (Table 2)

EHR Implementation. Only three practices had fully functional EHRs at the outset of the PCMH project, and eight of the 10 practices are either implementing or transforming to a new EHR during this project. This was a major distraction to PCMH change efforts, as clinicians and staff anticipated the impending impact on operations. Progress was

Table 2: Early Structural Barriers, Examples, and Strategies to Overcome Barriers

Structural Barrier	Examples	Strategies to Overcome
EHR implementation	Planning for and anticipation of EHR is a major distraction, “go live” phase suspends PCMH work, unrealistic expectations that EHR will solve PCMH data needs and other needs.	If at “go live” point of EMR implementation, let it happen for a few months, then re-engage practice; use chart auditing or local registries to test change processes and watch data so that better processes can be built in the EHR.
Sponsoring organization and administration	Stronger focus on revenue and patient visit numbers, staff and administrators have additional line of authority, sponsors have own improvement activities and priorities, electronic systems (EHR, phones, scheduling, billing) are purchased and managed by hospital, practice administrators may have more hierarchical leadership and decision-making style.	Meet with hospital key leaders early, find alignments between PCMH and hospital improvement activities and use their language (eg, patient safety instead of medical home), team up with other residencies with same sponsor to present a united effort and message, encourage administrators to promote staff participation and decision making.

EHR—electronic health record

PCMH—Patient-centered Medical Home

further hampered by unrealistic expectations that EHRs would solve the data issues related to PCMH work. During the actual “go live” implementation of EHRs in several practices, PCMH work was suspended or scaled back until the disruptions created by implementation decreased.

Sponsoring Organizations and Administration. Hospitals sponsor family medicine residencies, and the competing goals, cultures, and bureaucracies of these sponsoring organizations can greatly affect the ability of residency programs to effectively change. The significance of this varied across the practices, but staff and system constraints were elements that impeded the transformation process. Splits between the educational and clinical missions of the program sometimes interfered with the ability to make desired changes, which was exacerbated in situations where the hospital tightly controlled practice staffing, giving the practice little ability to change staffing patterns, duties, or roles. One barrier in several practices was the perceived overriding sponsor concern with maximizing patient visit numbers; this placed additional staffing constraints on practices. To overcome some of these potential

barriers, project leadership met with hospital leaders prior to initiating change efforts to help them understand the PCMH and the work needed in the practice and how it aligned with the hospital’s goals for quality improvement.

Early Structural-Cultural Barriers (Table 3)

Barriers in this grouping share aspects of both cultural and structural domains. For example, there appeared to be accepted cultural norms in some practices that inhibited initial expectations for full staff and resident participation. This cultural barrier was further reinforced by structural rules from the sponsoring hospital regarding appropriate use of staff time. Similarly, structural barriers regarding participation by residents resulted from the residency training requirements that are also outside of the clinic’s control.

Staff Participation. Among most practices, early engagement from practice staff was incomplete, because staff had not previously participated fully in decision-making processes and were not accorded time or opportunity to do so. In fact, most practices experienced early conflicts over how staff could be paid to do non-clinical QI team work

and find time in their tight clinical schedules to participate regularly. This lack of budget, time, and support for full staff participation seriously limited staff’s ability to make meaningful contributions to practice improvements and particularly to improve workflow and quality in the areas where they worked. Most practice managers were able to work out arrangements to find time for staff to participate in regular QI team meetings. Nevertheless, drawing staff into quality improvement conversations required that coaches gently but actively and persistently push for staff to be involved and for leaders to facilitate their engagement. Focusing team discussions on concrete examples or issues relevant to their work helped engage staff further. Once involved, staff often emerged as leaders of teams or projects.

Communication. Practices often had a history of not fully and regularly communicating information to all practice members—clinicians, staff, and residents. This inadequate communication was further aggravated by patterns of ignoring e-mails or by leaders “gatekeeping” information rather than openly sharing information. Some programs had no formal communication tools or had insufficient tools. Most faculty and

Table 3: Early Structural-Cultural Barriers, Examples, and Strategies to Overcome Barriers

Structural-Cultural Barrier	Examples	Strategies to Overcome
Staff participation	<p>Cultural: no history of regular, full participation in decision processes; someone else speaks for the staff; no formal training in PCMH care processes.</p> <p>Structural: rules about paying staff for non-practice work, difficulty finding time within structured work day to allow staff to participate regularly.</p>	Facilitators and leaders emphasize that staff need to be involved in QI processes, facilitate staff engagement during meetings, give staff concrete and relevant tasks and discussions (eg, process mapping), generate positive energy for participation by inviting their ideas, serve meals, build PCMH activities into job descriptions, train leaders in better facilitation.
Communication	<p>Cultural: history of gap in communication between clinicians and staff, between leaders and others, or between residents and others; lack of complete practice-wide communication about priorities, changes, or projects; leaders act as gatekeepers and controllers of information rather than open conduits; pattern of ignoring of e-mails.</p> <p>Structural: part-time nature of faculty and residents, insufficient communication tools or infrastructure (eg, distribution lists, Web pages, newsletters).</p>	Regular, persistent, practice-wide communication, such as newsletters, Web pages, weekly e-mails that go to everyone; use multiple communication methods; hold regular all-staff meetings; use existing e-mails that people already know to read and pay attention to; leaders communicate big-picture priorities to everyone and reinforce key principles repeatedly; democratize information (not just one gatekeeper of information).

PCMH—Patient-centered Medical Home

QI—quality improvement

residents are not in the practice full-time, further compounding the problem. Consequently, faculty, residents, and staff did not know about changes, upcoming meetings, activities that might affect them, and in some cases, that they were even participating in a PCMH project. To their credit, practices formulated creative and practical solutions to improve communication, including newsletters, weekly e-mails, and reminders at all-staff meetings. The most effective approaches used multiple methods to reach everyone. This was part of an effort to repeat messages about the changes they were working toward and to be more effective in reaching all members of a practice, especially staff. Additionally, having leaders in a practice talk about project goals and other aspects of the bigger picture and to reinforce key principles helped deliver consistent messages that the changes were important to improving patient care and to build a common vocabulary for practice improvement.

Discussion

Family medicine residencies face formidable cultural and structural barriers as they transform into medical homes. Residency programs are complex systems and can change effectively only after practice priorities are aligned and capacity to change is fortified. Practice coaches' early tasks included fostering wider practice involvement, encouraging facilitative leadership, teaching improved team processes, and facilitating effective communication. The agents who could lead and facilitate change were already in these practices but needed to be informed, engaged, and equipped with tools and techniques to lead, participate, and align priorities.

Cultural changes take time, in practices as elsewhere; however, perceptions that little or no progress is being made can contribute to loss of energy for change efforts. Concentrating attention on the cultural and structural barriers that are likely to impede early progress may yield

more satisfying and timely progress and establish the foundations for future changes. Fortunately, our experience is that many of the barriers that slow the alignment of priorities in a practice or hamper the ability to make changes can be remedied by active interventions by coaches in the form of leadership training, facilitation, identifying gaps, and providing techniques and tools to mark and encourage progress, engage staff, and build leadership.

Limitations

This paper reports on a set of structured observations within a small set of residency practices as they began the process of transformation. These practices were not selected to represent residency practices generally. This is not a report on the effectiveness of this particular intervention, and the validity of the observations reported is not assessed. This evaluation did not specifically ask questions about early barriers, and coaches were not explicitly

instructed to document all barriers in their field notes. Other significant early barriers no doubt exist; further exploration and classification of these early barriers could improve the literature. Without comparison data from non-residency practices, we were unable to determine whether these early barriers are unique to residency practices. However, being a residency practice brings additional regulatory, accreditation, and educational constraints that likely contribute to early barriers that other practices would not experience.

Practices are highly variable, as unique as the clinicians and staff who constitute them. Even within this small sample of 10 residency practices, some barriers were formidable in some, absent in others. These observations can guide but not prescribe. Implementation studies suggest that the process of change is non-linear and that each practice has its own culture, structure, and processes.^{7,21}

Nevertheless, the findings reported here were easily observed and were present across a range of settings. They are likely to appear in other training practices and are offered as preliminary findings. We expect this list to become more refined and accurate as others corroborate or fail to corroborate these findings. Further research and experience will yield additional strategies to effectively plan for and respond to early obstacles to building change capacity. We are confident that an approach that adapts to conditions on the ground, led by trained and prepared practice coaches, can be effective at identifying practice-specific

interventions and facilitating their implementation.

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