Healthcare 7 (2019) 30–37

Contents lists available at ScienceDirect

Healthcare

journal homepage: www.elsevier.com/locate/healthcare

Practice strategies to improve primary care for chronic disease patients under a pay-for-value program

Dori A. Cross[a,*], Paige Nong[b], Christy Harris-Lemak[c], Genna R. Cohen[d], Ariel Linden[e], Julia Adler-Milstein[f]

[a] University of Minnesota School of Public Health, Division of Health Policy and Management, Minneapolis, MN, USA
[b] University of Michigan School of Medicine, Department of Learning Health Sciences, Ann Arbor, MI 48109, USA
[c] University of Alabama at Birmingham, School of Health Professions, Birmingham, AL, USA
[d] Mathematica Policy Research, Washington, DC, USA
[e] Linden Consulting Group, San Francisco, CA, USA
[f] University of California San Francisco, Department of Medicine, San Francisco, CA, USA

ARTICLE INFO

Keywords:
Primary care redesign
Qualitative research
Quality improvement
Complex care management

ABSTRACT

Background: Improving primary care for patients with chronic illness is critical to advancing healthcare quality and value. Yet, little is known about what strategies are successful in helping primary care practices deliver high-quality care for this population under value-based payment models.

Methods: Double-blind interviews in 14 primary care practices in the state of Michigan, stratified based on whether they did (n = 7) or did not (n = 7) demonstrate improvement in primary care outcomes for patients with at least one reported chronic disease between 2010 and 2013. All practices participate in a statewide pay-for-performance program run by a large commercial payer. Using an implementation science framework to identify leverage points for effecting organizational change, we sought to identify, describe and compare strategies among improving and non-improving practices across three domains: (1) organizational learning opportunities, (2) approaches to motivating staff, and (3) acquisition and use of resources.

Results: We identified 10 strategies; 6 were "differentiating" – that is, more prevalent among improving practices. These differentiating strategies included: (1) participation in learning collaboratives, (2) accessing payer tools to monitor quality performance, (3) framing pay-for-performance as a practice transformation opportunity, (4) reinvesting earned incentive money in equitable, practice-centric improvement, (5) employing a care manager, and (6) using available technical support from local hospitals and provider organizations to support performance improvement. Implementation of these strategies varied based on organizational context and relative strengths.

Conclusions: Practices that succeeded in improving care for chronic disease patients pursued a mix of strategies that helped meet immediate care delivery needs while also creating new adaptive structures and processes to better respond to changing pressures and demands. These findings help inform payers and primary care practices seeking evidence-based strategies to foster a stronger delivery system for patients with significant healthcare needs.

1. Introduction

Delivery and payment reform programs that promote improvements in quality and value among primary care practices (e.g. patient centered medical homes, pay for performance programs) are becoming widespread. However, benefits from these programs are inconsistently realized.[1–6] Such results may be due to the specific challenges involved in managing patients with chronic illness. Patients with at least one chronic disease, and often more, are a rapidly growing segment of the patient population, account for substantial healthcare spending, and

Abbreviations: BCBCM, Blue Cross Blue Shield of Michigan; ED, Emergency Department; HER, Electronic Health Record; IPA, Independent Practice Association; MiPCT, Michigan Primary Care Transformation; PCMH, Patient-Centered Medical Home; PCP, Primary Care Provider; PGIP, Physician Group Incentive Program; PHO, Physician-Hospital Organization; PO, Physician Organization

* Corresponding author.
E-mail address: dcross@umn.edu (D.A. Cross).

https://doi.org/10.1016/j.hjdsi.2018.08.004
Received 6 November 2017; Received in revised form 1 April 2018; Accepted 21 August 2018
Available online 07 September 2018

require targeted strategies to ensure that they receive high-quality care.[7–9] Yet, many pay-for-value programs tend to first tackle "low-hanging" process measures such as provision of screenings and appropriate use of medications or imaging for acute care problems. These care changes may have little impact on chronic care patients who are driving most of the utilization captured in practice outcome measures. Thus, inconsistent performance under these improvement programs could be attributable to inconsistency in other practice processes that are more strongly evidenced to address outcome determinants of chronic disease patient care, such as enhanced medication management, home visits, patient and caregiver engagement and coaching, and integrated social services support.[8,10–12]

These robust care management capabilities have been increasingly emphasized as payment reforms continue evolving to better address total cost of care, for example, through accountable care organizations or bundled payments.[13,14] However, vanguard organizations with respect to population health management tend to be large, integrated health systems with robust resources and infrastructure to support these efforts. At the level of individual primary care practices, there is little systematic evidence regarding what contextual factors enable the selection or implementation of strategies for practices to best manage chronic disease patients, nor how these factors may moderate associations between pay-for-value program participation and improved outcomes for these patients.[15] Conceptually, these "determinants" are embedded in numerous implementation frameworks that synthesize key facilitators and barriers to the successful execution of organizational improvement initiatives.[16] These synthesized domains typically considers characteristics of the intervention itself (i.e. complexity, adaptability, strength of evidence base) and the implementation process, embedded in a nested structure of influential factors at the individual level (i.e. attributes of patients and providers), organizational level (organizational culture, climate and capacity for change) and community level (i.e. patient population needs, market pressures, legal regulations and policy incentives) (See Fig. 1).[16,17] In thinking about useful guidance for practices seeking to accelerate efforts to improve care for chronic disease patients, we focus in on the organizational level and processes of implementing chosen interventions as areas with the greatest potential variability as well as short-term mutability. More specifically, we identified three key strategic "bridging" domains that help organizations convert external pressures and influences to internal readiness for change.[17]

First, *organizational learning* behaviors are central to capacity for change. Primary care practices that seek out and foster a culture of receptiveness to external information (i.e., objective performance evaluations) and experimentation with new ideas (i.e., novel care strategies used in other care sites) expose providers and staff to information and ideas they may not have thought of on their own, and promote reflectiveness essential to improvement.[18–21]

Second, given the difficulties and uncertainty surrounding whether and how emphasizing complex patient care will pay off, successful organizational change may hinge on incentives that *motivate* staff to act proactively and with a specified goal orientation.[22,23] Extrinsic motivators, both financial[24–26] and non-financial,[27] have been shown to shape provider and staff behavior. Fostering intrinsic motivation among providers and staff to be committed to the challenging work of improving in the absence of specific guidance or incentives has been shown to result in organizational change that leads to performance improvement.[28]

Finally, without adequate *resources*, it is difficult to put ideas into action. Strategic acquisition and use of resources is critical to help practices turn organizational philosophy in to action - for example, use of IT systems to identify care gaps and coordinate patient care.[29] Practices, particularly small ones, also benefit from membership in provider organizations (POs) such as Independent Practice Associations (IPAs) or Provider-Hospital Organizations (PHOs), through which they can acquire more sophisticated administrative support services and access pooled resources for training and enhanced practice services (i.e., care management).[30,31]

In this study, we used claims-derived outcome measures to identify primary care practices that did and did not improve care for patients with at least one chronic illness. We then conducted double-blind interviews to (1) identify specific strategies within our three focal domains – learning, motivation, and resources – practices used to improve care for these and other patients they considered to have enhanced healthcare needs, and (2) determine which of these strategies differentiated improving and non-improving practices. As providers increasingly seek to improve outcomes for patients with high utilization and persistent gaps in care, and policymakers strive to support these efforts, our study provides important, actionable insights to speed progress towards improved care for this population.

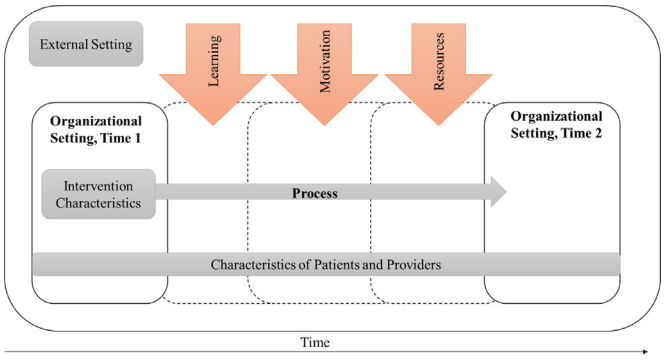

Fig. 1. Conceptual model, adapted from the Consolidated Framework for Implementation Research.

2. Material and methods

2.1. Setting

We interviewed 14 primary care practices in the state of Michigan, all of which participate in the Physician Group Incentive Program (PGIP), a statewide pay-for-value program run by Blue Cross Blue Shield of Michigan (BCBSM).[32] These practices were identified using a multistep process that resulted in stratifying PGIP practices into those that did and did not improve performance for chronic disease patients over a four-year time period (2010–2013).

Specifically, BCBSM provided practice demographic data (including whether or not the practice participated in PGIP) as well as annual, claims-derived outcome measures for all patients with an assigned primary care provider (PCP) in the practice. We limited patients to those with at least one high-utilization chronic conditions from a list of 18 Charlson Index conditions and 6 additional mental and behavioral health conditions identified by BCBSM as conditions that drove significant healthcare utilization (See Appendix A for list of included conditions).[32] We required practices to have at least 30 patients that met our criteria to be included in analysis. Because we needed sufficient patients per practice to assess performance, we were unable to define our population using more stringent "high-needs criteria often found in the literature, such as two or more chronic conditions, functional limitations, social and behavioral needs, and additional financial challenges suggested by insurance coverage type.[33] However, patients with just one chronic condition are still high-utilizers of healthcare, and better managing their care offers significant opportunity for improved care quality and potentially cost savings.[9]

We used propensity score matching to match each PGIP-participating practice to a non-participating control practice. The propensity score was calculated using an array of practice demographic and baseline year outcome measures (See Appendix B). Then, at the practice level, we used data from chronic disease patients only to calculate the

performance trajectory for ten different outcome measures and compared each PGIP practice's performance to their matched control. These measures, adapted from Blue Cross's approach to practice assessment under their pay-for-performance initiatives, included cost measures (total medical-surgical costs, ED costs, ambulatory care sensitive ED costs), utilization measures (admissions, ambulatory care sensitive admissions and 30- and 90-day readmissions) and quality composite measures (total quality, preventive care, and medication management).

We then divided the practices in to three roughly equal groups based on performance. Practices that had a more favorable trajectory of improvement compared to their matched control on 7 or more measures were considered improving practices (N = 16); those with better performance on 4 or fewer measures compared to their matched control were considered non-improving practices (N = 21). The remaining 24 matched practices outperformed their matched control at roughly the same rate that the matched control outperformed the target practice. Thus, we did not recruit from this group.

We conducted two robustness checks (See Appendix C) to assess our approach to practice performance categorization. In the first, we test the degree of correlation in performance outcomes for the 10 measures utilized. This addresses the concern that practice improvement categorization may be biased based on performance on a subset of measures that are highly correlated with each other. Correlations range from 37% to 68%. However, when we looked at specific measure achievement across the high and low performing groups, there were no clear patterns of practices being systematically sorted based on these correlations. In our second exercise, we check whether the magnitude of performance improvement for PGIP practices was meaningful, relative to non-PGIP practices, and whether it varied by measure. This addresses the concern that an absolute, binary definition of "better" on these ten outcomes is limited (i.e. a practice with an improvement trajectory just 1% better than it's matched control, is still rewarded for that outcome). Thus, for each measure, we calculated how many PGIP practices that did "better" on that aspect of performance fell within vs. outside the 95% confidence interval of the control group's performance. If there was a measure for which a large percentage of PGIP practices fell within the confidence interval of the performance trajectory for the control practices, we would be concerned that distinguishing those PGIP practices as "better" based on the measure would lack significance. However, 75–95% of PGIP practices, depending on the measure, had an improvement trajectory rate *significantly* greater than that of the control group of practices. These rates don't vary substantially across the improving and non-improving groups. Thus, we feel more confident using a binary measure of "better/worse than" for each of the 10 outcomes measures used to assess relative performance.

2.1.1. Recruitment and data collection

All practices received a mailed invitation letter to participate, followed up by phone calls. Recruitment continued until seven improving and seven non-improving practices had completed interviews. Two person research teams conducted on-site group interviews at each practice, sixty to ninety minutes in length.

Interviews were conducted with a semi-structured interview protocol, developed by the research team to guide respondent reflections in a way that informed an integrated understanding of performance improvement strategy.[34] Interviews were conducted double-blind to mitigate potential bias among the investigators conducting the data collection; neither interviewers nor interviewees knew the practices' performance categorization until initial analyses were completed. One administrative team member unassociated with data collection or analysis knew practice designations throughout the process, to ensure a balanced set of interviews. The interview protocol first asked practice respondents to define the population(s) they consider to be patients with high healthcare needs, and assess their strengths and challenges in caring for this population. We then used guided, open-ended questions to probe on each of our three focal domains, asking about whether and how practices were engaging in strategic activities within each domain. (See Appendix D for full protocol). We sent the protocol ahead of time and asked the practices to decide which practice staff should participate. The protocol was piloted with one practice identified in our performance categorization as neither improving nor non-improving, (i.e. performed better than its matched control on five out of ten measures), resulting in small refinements prior to data collection.

2.1.2. Analysis

All interviews were recorded and transcribed. Transcripts underwent directed thematic coding using a codebook derived from content covered in the interview guide, which was refined based on concepts that emerged during initial coding.[35] Codes helped parse interview content across one or more predefined content areas (complex patient definition, learning, motivation, resources) and assign subjective valence to statements (i.e. was described activity occurring in a way perceived as contributing to improved complex care?). Two members of the research team coded and jointly reviewed the first two transcripts to identify needed changes to the codebook and then applied the updated codebook to all transcripts, reconciling and finalizing the application of all codes by consensus. Analysis of coded transcripts was conducted using Atlas.ti, a qualitative software tool.

We used this structured coding analysis to enable qualitative comparison on two important levels.[36,37] First, we used consistencies in applied coding to identify and define explicit organizational strategies aimed at improving care for chronic disease patients for which there was a shared understanding across practice sites. Structured comparative data tables helped to describe the range of practice performance improvement activities, then identify distinct strategies being pursued within each of our focal domains. With an established list of strategies, we could then go back and determine whether or not each practice engaged in the identified strategy and if they did, summarize *how* each practice had engaged with and operationalized the strategy. This enabled a second level of comparison across practices with similar experiences in terms of the selection and implementation of strategies.

After interviews were unblinded, we assessed variation in adoption of strategies across performance categories to determine which strategies *differentiated improvers from non-improvers* (i.e., were more often pursued in improving practices). We considered differentiating strategies to be those in which the majority of improvers (four or more) engaged in the strategy and there was at least two fewer non-improvers engaged in the strategy.

3. Results

We interviewed 31 individuals across fourteen practices, with a mean number of two interviewees per practice (range 1–5). Respondents included 13 practice managers, 6 physicians, 2 nurses, 6 medical assistants/technicians, and 4 care managers. Improving and non-improving practices were similar in size and staffing ratios (See Table 1). Improving practices had slightly more BCBSM patients on their panel than non-improving practices, though the same percent of these patients met our definition of high needs across both groups (10.2%). Due to data limitations, we do not know total panel size per PCP. Practices most often defined their high-need patient populations based on having one or multiple chronic conditions; a few included frailty or social complications in their definition. Because respondents were asked during interviews to reflect upon care delivery for the patients they considered high need, rather than our analytic definition based only on chronic condition, we use the term "high-need" throughout the results to describe the target population of these organizational strategies.

Practice Strategies to Improve Care for High-Needs Patients. We identified 10 practice strategies to improve care for high-needs patients across our selected domains: 3 in the learning domain, 4 in the motivation domain, and 4 in the resources domain (Table 2). Most practices

Table 1
Respondent practices: Descriptive characteristics.

	Improving	Non-Improving
Medical providers (MD, DO, NP, PA)		
1	1	2
2–4	4	3
5+	2	2
Staff: Provider ratio		
1–1.9 staff to provider	1	2
2–2.9 staff to provider	3	3
3–3.9 staff to provider	1	0
4 or more staff to provider	2	2
BCBSM patients per PCP		
< 200	3	2
200–400	1	4
400+	3	1
Average number (and %) high-need patients	61.7 (10.2%)	53.3 (10.2%)

did not conceptualize their approach care for these patients as different from care for other patients because they sought to pursue a "single standard of care". However, respondents were able to identify numerous practice changes made as a result of participation in PGIP – for example, care transition calls post-hospitalization – and which of these changes disproportionately benefited high-needs patients.

3.1. Strategies that differentiated improving and non-improving practices

Six strategies across our domains of learning, motivation and resources differentiated improving and non-improving practices (Table 2). We describe the strategies, as well as provide more detail on how they were used in improving practices. We also report illustrative quotes to demonstrate how the strategies were described by improving practices and how they were described as absent in non-improving practices (Table 3).

3.1.1. Learning

Two learning strategies differentiated improving and non-improving practices. First, more improving practices were engaged in pursuing external learning opportunities, seeking and applying new knowledge within their practices. The learning opportunities described by respondents included those made available by the practice's provider organization (PO) as well as the hospitals with which the practice had a relationship. POs that had been established longer and had more substantial membership tended to be more proactive and were more "keyed in" to strategies for success under evolving pay-for-value program structures. For example, these entities engaged practices through regular community meetings, webinars, resource fairs and on-site assistance. They typically focused on how to troubleshoot ongoing care delivery challenges for high-needs patients and implement new technologies or approaches to quality improvement. For improving practices that lacked a robust PO, individuals within the practice engaged with various community groups, or even directly with payers, and more proactively leveraged informal peer networks for learning.

Second, improving practices were more likely to engage with online payer tools that track patients' claims-based health information and associated measures of utilization and quality as additional sources of information to guide practice improvements. Practices implementing this strategy actively sought to supplement their own knowledge of the patient and care decisions with additional insights gained through this data. For example, improving practices would use these sites as a registry to identify gaps in care as well as monitor and benchmark performance on HEDIS measures, and interacted with those collecting practice data to track how their documentation practices were translating into payer performance measure calculations. Taking advantage of both learning collaboratives and online payer data sources was described as creating an organizational culture of learning and providing an ever-growing knowledge base from which practices pulled new ideas and strategies for improvement.

3.1.2. Motivation

The first motivation strategy that differentiated the two performance groups was the extent to which practices made a concerted effort to frame pay-for-performance participation as an opportunity for transformation. Improving practices were more likely to leverage extrinsic financial incentive structures of PGIP participation to drive more

Table 2
Practice approaches to improvement: differentiating and non-differentiating* strategies.

		Improving Practices (n=7)	Non-Improving Practices (n=7)
Practice Learning	Participation in external learning collaboratives	5	3
	Accessing online payer tools that provide claims-based measures of patient utilization and care quality	6	4
	Standard processes for internal communication and knowledge sharing	4	5
Practice Motivation	Framing pay-for-performance participation as a transformation opportunity	6	4
	Investment of earned incentive money in an equitable, practice-centric way	4	2
	Changed staff responsibilities to align with PGIP program guidelines	7	6
Utilization of Resources	Employment of a care manager	6	3
	Use of technical and administrative support from local hospitals and provider organizations to support performance improvement	6	3
	Use of EHR and registry	5	6
	Leveraging available community-based social services	4	5

* non-differentiating strategies appear in grey rows.

Table 3
Examples of practice engagement with differentiating strategies.

Improving Practice	Non-Improving Practice
Practice Learning: External Learning Collaboratives	
"The health system has a practice manager meeting every month that I go to. A couple hours, anything new, or that needs to be done or that's going on, they tell us about. The doctors always go to meetings too, with the hospital network." –Practice manager, 2-physician practice	"We just don't do them anymore [community meetings]. We started going probably 9 years ago, but were the only practice there…" -Physician, 2-physician practice
Practice Learning: Accessing online payer tools	
"Any day of the week I can pull up our quality summary report and see - for every measure – exactly where we're at." -Practice manager, solo physician practice	"I don't pay attention to [outside performance reports]… I don't trust the metrics and [it] doesn't change the way I practice." - Physician, solo practice
Practice Motivation: Framing P4P Participation as a Transformation Opportunity	
"We consider ourselves a servant practice, servant leadership. The board leads, supporting the providers and managers. The patient is obviously at the top –it's about whatever the patients need. That's our mission and our vision. The patient-centered medical home model is something we strive to do very, very well at." -Practice manager, 11-physician practice	"We've found no program was useful in actual treatment of patients. They're not able to measure our actual quality of care. [It's just about] measuring the deliverables of an exact procedure…that's it." - Physician, solo practice
Practice Motivation: Equitable Distribution of Earned Incentive Money	
"Yes, everyone gets a piece of the pie [practice incentive money]. Because, we feel everyone - from the [staff member who] makes that first outreach phone call to the person who signs out the patient when they leave - has worked on that patient." -Practice manager, 4-physician multispecialty practice	"The doctors receive the financial awards, The staff are helping the doctor to meet [performance goals], but that's our purpose. We're working for them…we don't get anything extra." - Practice manager, 7-physician multi-specialty practice
Practice Utilization of Resources: Employment of a Care Manager	
"I don't know how the office would run without her [the care manager] at this point. There is so much work to do, and not enough time. The MAs don't have time to do everything... With a care manager, you have somebody who can be face to face and say "Okay, tell me what you need," that's a huge benefit…We could keep 3 busy at this office, literally, if they let us." -Practice manager, 4-physician multispecialty practice	"We really don't have anything in place right now, but in the future we are looking into having something like that. We could have a care [manager] whose primary thing is to call [complex, high-needs] patients all day long." –Practice manager, 2-physician practice
Practice Utilization of Resources: Use of Technical/Administrative Support from Hospitals and POs to Support Performance Improvement	
"My PO contact…she is very familiar with what [the payer] is looking for during site visits. She'll read through my documentation and make recommendations like 'be more specific here, you need to do this here.' They [the PO] are a huge help." - Practice manager, solo physician practice	"We have less of a relationship with our PHO every year. We've worked with them for 25 years, but this is the least amount of contact we've had with them. We used to meet with them for lunch or they would come into the office every 6 months. Now, I haven't met with them for 3 or 4 years." - Practice manager, solo physician practice

fundamental changes in practice structure and priorities. For example, improving practices were more likely to have used the PGIP measures related to care coordination as a launching pad for investing in expanded staff roles and revised team-based workflows that incorporated non-clinical aspects of health in to care delivery. Empowering staff in this way, with appropriate training and reinforcement through staff support structures and regular meetings, facilitated buy-in to the value of these programs. These changes were credited with producing a deeper level of intrinsic practice commitment to delivering the best care for patients and also achieving success under these programs – overall and for the care of high-needs patients.

The second differentiating motivation strategy related to how financial gains were distributed among physicians and staff within the practices. Improving practices that engaged in this strategy had physician leadership that chose to invest the money more broadly in order to highlight the importance of practice staff and resources that support their work in achieving success under the program. For example, one improving practice in an underserved community chose to direct payments to the staff to emphasize their appreciation for the team's hard work in a resource-poor setting. A larger, well-resourced practice invested the money back into the practice's general account to purchase new practice assets to improve staff functioning and patient care. These approaches reflected an organizational culture among improving practices that prioritized the care team and long-term practice success over short-term provider compensation.

3.1.3. Resources

We found two resource-related differentiating strategies that allowed improving practices to translate new ideas and incentivized priorities into concrete actions. The first strategy was employing a care manager. Care managers were responsible for identification and outreach to high-needs patients, providing self-care education, helping to secure necessary social services, and following up with appointment and medication adherence reminders. Depending on space constraints and scheduling practices, care managers across improving practice sites provided critical wraparound services to patients through a combination of phone calls, office visits specifically for care management, and combined visits with the doctor.

Second, improving practices more often sought out administrative support from their PO or affiliated hospital to help procure expanded resources for performance improvement initiatives. This included, for example, enhanced communication with the hospital to improve transitional care, such as more regular use of Admission, Discharge, Transfer (ADT) notifications, and investment in use of provider portal or other more robust shared IT infrastructure with hospitals to support post-discharge care. For the subset of practices participating in the Michigan Primary Care Transformation (MiPCT) demonstration, a statewide program that provided financial resources and support to practices undergoing PCMH transformation, implementing this strategy involved using MiPCT resources to help staff identify high-needs patients and prioritize their care needs. This strategy also took the form of seeking more active on-site PO support. Practices had PO staff regularly come on-site to their office for coaching on the reporting process for pay-for-value programs, and at least three relied on PO registry resources to supplement their own efforts to proactively target patients for needed services.

3.2. Strategies that did not differentiate improving and non-improving practices

We identified four additional strategies that practices identified as important organizational responses to meeting the needs of high-need patients, but their use did not meaningfully differ across performance groups. With respect to *learning*, most practices had implemented standard processes for internal communication and knowledge sharing as part of their strategic approach to care improvement. Various approaches to implementation included designated staff meeting time to plan, discuss and troubleshoot ongoing organizational changes, as well as established processes for routine communication, including daily care team huddles and direct messaging functionality in the practice EHR. The *motivational* strategy equally prevalent across performance groups was the modification of staff responsibilities to adhere to PGIP program requirements (i.e structured response to direct financial incentives). Staff at both improving and non-improving practices demonstrated awareness of the programs in which they were participating and knew the specific ways in which their responsibilities or workflows had changed in response to these programs' incentive structures. For example, staff took a more proactive approach to identifying gaps in care in advance of patient visits, and were responsible for calling patients after hospitalization to follow up on post-discharge care needs. Two *resource* strategies that presented as non-differentiating included, first, the adoption and use of EHRs and registries. Registries were typically used to identify patient care needs (e.g., gaps in care) for which addressing them would improve associated quality measures. Some practices also used EHR templates to structure staff workflows in line with care priorities. The second non-differentiating strategy was use of community-based social services for patients to address non-medical care needs. Practices implemented this strategy by developing referral processes, drawing on various programs provided by their PO and community networks to connect patients to health navigators, provide transportation for socially isolated patients, enroll diabetic patients in free education classes and connect patients to home healthcare.

4. Discussion

Primary care practices across the country are actively engaged in performance improvement under pay-for-value programs. While a key component of success is the ability to better manage chronic disease and other patients with high healthcare needs, little implementation evidence exists to guide the prioritization and implementation of strategies that best position practices to achieve this goal. We conducted double-blind interviews with practices that did and did not demonstrate improvement in outcomes for chronic disease patients between 2010 and 2013. Across these practices, we identified key similarities and differences in strategies used to improve care for patients they identified as having enhanced healthcare needs across three evidence-based domains. These strategic domains – learning, motivation, and resources – were selected as bridging constructs that may help practices translate policy and market-level pressures to internal change capacity. Because practices' definition of high-need sometimes extended beyond our minimal definition used to assess performance categorization, we cautiously interpret these strategies as applicable to not only chronic disease patients but also those with additional comorbidities, functional limitations or social determinant risks.

With respect to learning, practices that improved were more likely to employ strategies to bring new knowledge into their practice – from payers, hospitals, and/or POs – to identify areas of needed improvement, to identify strategies for improving care delivery, and to assist with implementation of these strategies. PGIP fostered several learning collaboratives in Michigan[38] and other national programs have focused on the long-term value of deliberate learning activities (e.g., TransforMed, Institute for Healthcare Improvement).[18] However, the availability of such opportunities is not sufficient for practice transformation. Transformation requires practice engagement with these learning opportunities; practice leadership needs to cultivate a culture of "openness" that fosters practice experimentation and organizational flexibility in pursuing care improvements for high-need patients.

The key differentiator among practices with respect to motivational approaches was an enhanced ability to foster intrinsic motivation. Improving practices were more likely to have achieved buy-in to changes in practice structures and priorities by framing pay-for-

performance participation as an opportunity for broader transformation, and were also more likely to reinvest earned incentive money in the whole care team or back in to the practice. This suggests that meaningful improvements in care for chronic disease and other high-need patients require leveraging extrinsic financial motivators to promote fundamental changes in how care teams work together and toward a common purpose. If practices instead direct monetary incentives towards short-term, reactionary process changes, they miss the opportunity to invest in more fundamental changes that hold the potential for greater long-term impact, such as implementing robust multidisciplinary team-based care practices (i.e. team-oriented performance assessment and feedback structures[39]).

Finally, in terms of resources, employment of care managers and the pursuit of external support for performance improvement initiatives (i.e. working with hospitals on transitional care, PO assistance with quality reporting) were more prevalent among improving practices. While every primary care practice could benefit from more resources, we have shown that improving practices benefitted from prioritizing resources that served as capacity-expanding strategies - to more fully leverage available technology and social support resources that disproportionately benefit care for patients with greater needs and utilization. In an era in which there has been rapid expansion of health IT tools and technical assistance for practices,[40] such capacity-expansion is likely necessary to take advantage of these new capabilities and integrate them into day-to-day care.

Improving practices' ability to meet the needs of patients with complex healthcare conditions is not a new goal, with many innovative programs over the past 20 years aimed at improving care for this population.[15] And yet, many of these programs fail to achieve improvements to cost and/or quality, and lack sustainability. Modifying widespread commercial or Medicare pay-for-value initiatives with elements adapted from these more specialized programs could give known successful attributes of high-need care programs more infrastructure and stability while adding a needed focus on high-needs populations to large-scale payment reform efforts.[14] Even then, the variation we observe in this study regarding practices' baseline resources and approach to implementation suggests that incorporating new "high-need care" program elements as pay-for-value requirements may still not result in the desired association between participation and outcomes. Finding ways to support practices in capacity building and implementation of these program elements, and allowing flexibility in design of care management strategies that fit the specific needs of a practice's patient population, will likely be essential. Our findings indicate that practices need strategies that meet immediate care delivery needs for high-need patients while also creating new adaptive structures and processes to better respond to constantly evolving pressures and demands. For intermediary organizations tasked with helping practices participate successfully in new payment models and performance improvement, a focus on learning to build flexible capacity – for example, through data-driven strategic management or investment in team-based care delivery models – will be critical. Additionally, guidance on "stacking" strategies in a way that is synergistic and builds on practices' contextual strengths will help practices achieve successful organizational change that drives higher-value care for patients most in need.

4.1. Limitations

The first limitation of our study is reliance on respondents' self-reported engagement in various strategies rather than objective measures of behavior(s). We tried to address this concern by conducting multiple interviews for triangulation within each practice, and probing for specific examples. When we were uncertain about whether a given practice engaged in a given strategy, we followed-up with the respondent(s) for clarification. Relatedly, our small sample did not enable a robust quantitative assessment to identify differentiating strategies; instead, our results should be viewed as hypothesis generating and the value of our approach is in the identification, and rich descriptions, of the strategies.

Another key limitation is that the definition of high-needs used in our analytic process to define improving and non-improving practices (having one or more chronic conditions) was a relatively low bar. While we picked this definition to ensure sufficient patients to evaluate practice performance, this definition is not in line with commonly accepted definitions of high-need – often two or more chronic conditions in addition to functional limitations, social determinant risk factors, and other barriers to care suggested by insurance type.[33] Practices were still asked to reflect broadly on patients they considered to have enhanced care needs in describing organizational strategies, and thus we cautiously extend our findings to be applicable beyond just patients with single chronic conditions. However, we fully acknowledge that practices with many patients who are significantly more high-needs – with functional limitations and high social determinant risks – likely require even more tailored strategies and resources to successfully treat patients of that complexity.[10]

Finally, our sample was comprised of primary care practices in Michigan that had some affiliation with an umbrella PO entity as a requirement of PGIP participation. Our findings may therefore not generalize outside of Michigan where PO structures are not as prevalent. However, the critical role of POs that was evident in multiple strategies that we identified provides useful insights to guide efforts to expand PO-like entities (e.g., IPAs, PHOs) in other states.

5. Conclusions

In a qualitative study of seven Michigan primary care practices that demonstrated improvement in high-needs patient care under a commercial insurer's pay-for-value program, and seven that did not, we found six differentiating organizational strategies related to learning, motivation and resources used more frequently by improving practices. These strategies generated long-term value to practices by strengthening (1) access and receptivity to new ideas for care delivery through external learning opportunities, (2) ways to foster intrinsic motivation to pursue transformational improvements in chronic disease patient care among providers and staff, and (3) pursuing resources that expanded practice bandwidth to provide care services targeting patients with chronic conditions. Current findings serve to guide practices and policymakers on how to prioritize changes to primary care practices that promote adoption of these key strategies, which could ultimately drive higher-value care for patients most in need.

Acknowledgements

We thank A Jay Holmgren, Eric Pfeifer, Jordan Everson and Sunny Lin for their assistance with data collection.

Declarations

Ethics approval

This study was evaluated and determined to be IRB-exempt by the University of Michigan, Health Sciences and Behavioral Sciences Institutional Review Board (IRB # HUM00103946)

Consent for publication

Not applicable.

Availability of data and material

The interview protocol is included in the appendices. The compiled datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Competing interests

JAM sits on the advisory board of *Healthcare*. All other authors declare that they have no competing interests.

Funding

We gratefully acknowledge The Commonwealth Fund (New York, NY USA) for their active support of this work. Grant Number: 20140121.

Authors' contributions

JAM, CHL and GRC conceptualized the project; JAM, AL, GRC and DAC made substantive contribution to study design (i.e. performance criteria and assessment, site selection, interview guide); DAC, PN and JAM performed data collection, analysis and interpretation as well as manuscript drafting; All authors critically revised the manuscript and provided final approval for manuscript publication.

Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at doi:10.1016/j.hjdsi.2018.08.004.

References

1. Jackson GL, Powers BJ, Chatterjee R, et al. The patient-centered medical home: a systematic review. *Ann Intern Med.* 2013;158(3):169–178.
2. Friedberg MW, Schneider EC, Rosenthal MB, Volpp KG, Werner RM. Association between participation in a multipayer medical home intervention and changes in quality, utilization, and costs of care. *JAMA.* 2014;311(8):815–825.
3. Mullen KJ, Frank RG, Rosenthal MB. Can you get what you pay for? Pay-for-performance and the quality of healthcare providers. *RAND J Econ.* 2010;41(1):64–91.
4. Colla CH, Wennberg DE, Meara E, et al. Spending differences associated with the Medicare Physician Group practice demonstration. *JAMA.* 2012;308(10):1015–1023.
5. Christianson JB, Leatherman S, Sutherland K. Lessons from evaluations of purchaser pay-for-performance programs: a review of the evidence. *Med Care Res Rev.* 2008;65(6 suppl):5S–35S.
6. Song Z, Safran DG, Landon BE, et al. Health care spending and quality in year 1 of the alternative quality contract. *N Engl J Med.* 2011;365(10):909–918.
7. Blumenthal D, Chernof B, Fulmer T, Lumpkin J, Selberg J. Caring for high-need, high-cost patients—an urgent priority. *N Engl J Med.* 2016.
8. Bodenheimer T, Berry-Millett R. Care management of patients with complex health care needs. *Policy.* 2009;1:6.
9. Emanuel EJ. Where are the health care cost savings? *JAMA.* 2012 4;307(1):39–40.
10. Vogeli C, Shields AE, Lee TA, et al. Multiple chronic conditions: prevalence, health consequences, and implications for quality, care management, and costs. *J Gen Intern Med.* 2007;22(3):391–395.
11. Boyd CM, Darer J, Boult C, Fried LP, Boult L, Wu AW. Clinical practice guidelines and quality of care for older patients with multiple comorbid diseases: implications for pay for performance. *JAMA.* 2005;294(6):716–724.
12. McCarthy D, Ryan J, Klein S. Models of care for high-need, high-cost patients: an evidence synthesis. *Issue Brief (Commonw Fund).* 2015;31:1–9.
13. Larson BK, Van Citters AD, Kreindler SA, et al. Insights from transformations under way at four Brookings-Dartmouth accountable care organization pilot sites. *Health Aff.* 2012 1;31(11):2395–2406.
14. Anderson GF, Ballreich J, Bleich S, et al. Attributes common to programs that successfully treat high-need, high-cost individuals. *Am J Manag Care.* 2015 1;21(11):e597–e600.
15. Bleich SN, Sherrod C, Chiang A, et al. Peer reviewed: systematic review of programs treating high-need and high-cost people with multiple chronic diseases or disabilities in the United States, 2008–2014. *Prev Chronic Dis.* 2015:12.
16. Flottorp SA, Oxman AD, Krause J, et al. A checklist for identifying determinants of practice: a systematic review and synthesis of frameworks and taxonomies of factors that prevent or enable improvements in healthcare professional practice. *Implement Sci.* 2013;8(1):35.
17. Damschroder LJ, Aron DC, Keith RE, Kirsh SR, Alexander JA, Lowery JC. Fostering implementation of health services research findings into practice: a consolidated framework for advancing implementation science. *Implement Sci.* 2009;4(1):50.
18. Nembhard IM, Tucker AL. Deliberate learning to improve performance in dynamic service settings: evidence from hospital intensive care units. *Organ Sci.* 2011;22(4):907–922.
19. Soubhi H, Bayliss EA, Fortin M, et al. Learning and caring in communities of practice: using relationships and collective learning to improve primary care for patients with multimorbidity. *Ann Fam Med.* 2010;8(2):170–177.
20. Nembhard IM. All teach, all learn, all improve? The role of interorganizational learning in quality improvement collaboratives. *Health Care Manag Rev.* 2012;37(2):154–164. https://doi.org/10.1097/HMR.0b013e31822af831.
21. O'Malley AS, Gourevitch R, Draper K, Bond A, Tirodkar MA. Overcoming challenges to teamwork in patient-centered medical homes: a qualitative study. *J Gen Intern Med.* 2014;30(2):183–192.
22. Wise CG, Alexander JA, Green LA, Cohen GR, Koster CR. Journey toward a patient-centered medical home: readiness for change in primary care practices. *Milbank Q.* 2011;89(3):399–424.
23. Cohen GR, Erb N, Lemak CH. Physician practice responses to financial incentive programs: exploring the concept of implementation mechanisms. *Annu Rev Health Care Manag: Strategy Policy Perspect Reform Health Syst (Adv Health Care Manag).* 2012;13:29–58.
24. Dale SB, Ghosh A, Peikes DN, et al. Two-year costs and quality in the comprehensive primary care initiative. *N Engl J Med.* 2016.
25. Conrad DA, Perry L. Quality-based financial incentives in health care: can we improve quality by paying for it? *Annu Rev Public Health.* 2009;30:357–371.
26. Flodgren G, Eccles MP, Shepperd S, Scott A, Parmelli E, Beyer FR. An overview of reviews evaluating the effectiveness of financial incentives in changing healthcare professional behaviours and patient outcomes. *Cochrane Database Syst Rev.* 2011;7(7).
27. Lerchenmueller MJ, Nembhard IM. Incentives in the Age of Knowledge Work. Academy of Management Proceedings. 11727; 2015.
28. Pink DH. *Drive: The Surprising Truth About What Motivates Us.* New York, NY: Riverhead Books; 2011.
29. O'Malley AS, Grossman JM, Cohen GR, Kemper NM, Pham HH. Are electronic medical records helpful for care coordination? Experiences of physician practices. *J Gen Intern Med.* 2009;25(3):177–185.
30. Casalino LP, Wu FM, Ryan AM, et al. Independent practice associations and physician-hospital organizations can improve care management for smaller practices. *Health Aff.* 2013;32(8):1376–1382.
31. Wise CG, Alexander JA, Green LA, Cohen GR. Physician organization-practice team integration for the advancement of patient-centered care. *J Ambul Care Manag.* 2012;35(4):312–323.
32. Lemak CH, Nahra TA, Cohen GR, et al. Michigan's fee-for-value physician incentive program reduces spending and improves quality in primary care. *Health Aff.* 2015;34(4):645–652.
33. Blumenthal D, Anderson G, Burke S, Fulmer T, Jha AK, Long P. *Tailoring Complex-care Management, Coordination, and Integration for High Need, High Cost Patients.* [Discussion paper]. Washington, DC: National Academy of Medicine; 2016.
34. Creswell John W. *Qualitative Inquiry and Research Design: Choosing Among Five Approaches.* Sage publications; 2012.
35. Hsieh H-F, Shannon SE. Three approaches to qualitative content analysis. *Qual Health Res.* 2005;15(9):1277–1288.
36. Miles MB, Huberman AM. *Qualitative Data Analysis: An Expanded Sourcebook.* Sage Publications; 1994.
37. Boeije H. A purposeful approach to the constant comparative method in the analysis of qualitative interviews. *Qual Quant.* 2002 1;36(4):391–409.
38. Lemak CH, Cohen GR, Erb N. Engaging primary care physicians in quality mprovement: lessons from a payer-provider partnership. *J Healthc Manag.* 2013;58(6):429–445.
39. Hysong SJ, Knox MK, Haidet P. Examining clinical performance feedback in patient-aligned care teams. *J Gen Intern Med.* 2014;29(Suppl. 2):S667–S674.
40. Office of the National Coordinator for Health Information Technology. 'Office-based Physician Electronic Health Record Adoption,' Health IT Quick-Stat #50. dashboard. healthit.gov/quickstats/pages/physician-ehr-adoption-trends.php. December.