How Type of Practice Ownership Affects Participation with Quality Improvement External Facilitation: Findings from EvidenceNOW

Cynthia K. Perry, PhD, FNP-BC, FAHA[1], Stephan Lindner, PhD[2], Jennifer Hall, MPH[3], Leif I. Solberg, MD[4], Andrea Baron, MPH[3], and Deborah J. Cohen, PhD[3]

[1]School of Nursing, Oregon Health & Science University, Portland, OR, USA; [2]Center for Health System Effectiveness, Oregon Health & Science University, Portland, OR, USA; [3]Department of Family Medicine, Oregon Health & Science University, Portland, OR, USA; [4]HealthPartners Institute, Bloomington, MN, USA.

BACKGROUND: Facilitation is an implementation strategy that can help primary care practices improve healthcare quality and build quality improvement (QI) capacity when delivered in a flexible manner by trained professionals. Practice ownership is associated with use of QI. However, little is known about how practices of different ownership participate in external facilitation, and this could inform future initiatives.
OBJECTIVE: Using data from EvidenceNOW, we examined how practice ownership influences participation in external facilitation.
STUDY DESIGN: We used an iterative mixed-methods design.
PARTICIPANTS, APPROACH, AND MEASURES: We collected data from practices on practice characteristics (e.g., location, size, payer mix) and ownership type via surveys and from facilitators on the number of hours, encounters, and months each practice had with a facilitator via facilitation logs. Using multivariable linear regression, we examined the association between facilitation and ownership ($n=1117$ practices). We conducted semi-structured interviews with EvidenceNOW leadership ($n=12$) and facilitators ($n=51$) and observed facilitators in a subset of practices ($n=64$); we analyzed this qualitative data for patterns of facilitation.
KEY RESULTS: In the fully adjusted model, differences by ownership were non-significant; FQHCs, however, had significantly less participation in facilitation than clinician-owned practices across two measures (unadjusted difference: −2.83, $p<0.01$ for number of encounters, and −2.04, $p<0.01$ for number of months with encounters). Qualitative data showed that Health System and FQHC ownership influenced types of practices enrolled in EvidenceNOW, and suggested that in these practices lower autonomy and greater complexity compared to clinician-owned ownership influenced facilitation participation patterns.
CONCLUSIONS: Practice ownership shaped how but not how much practices participated in external facilitation. This finding highlights the importance of tailoring facilitation approaches based on ownership-related characteristics in future QI initiatives.

KEY WORDS primary care; external facilitation; quality improvement.

J Gen Intern Med 37(4):793–801
DOI: 10.1007/s11606-021-07204-7

Prior Presentations: *49th Annual Meeting of North American Primary Care Research Group, Virtual, November 2020.*

Received February 1, 2021
Accepted October 8, 2021
Published online January 3, 2022

BACKGROUND

In the USA, practice ownership is changing, particularly in primary care.[1] In 2018, over 45% of physicians reported owning their practices,[2] with an increasing trend to hospital ownership.[3] Federally qualified health centers (FQHCs) have expanded since the Affordable Care Act.[4] Variations in how primary care practices approach quality improvement (QI) have been linked with practice ownership. Hospital-owned practices use more evidence-based care management strategies[5,6] compared with clinician-owned practices. FQHCs are required to have certain QI processes[7–9] in compliance with their federal designation. Small clinician-owned primary care practices might be challenged to build capacity for QI, which is needed to improve use of evidence-based guidelines and care quality. The impact of the type of practice ownership on participation in facilitation, however, has seldom been assessed.

Facilitation is an evidence-based implementation strategy that helps primary care practices build capacity for QI and improve clinical quality.[10] External support organizations (e.g., regional extension centers, area health education centers, quality improvement organizations) can provide the facilitator workforce.[11–18] Facilitators help primary care practices improve care quality using strategies, such as assisting with audit and feedback, providing educational materials, supporting the formation and function of QI teams, and facilitating plan-do-study-act cycles (PDSAs), to help practices improve care quality[19–24], and engaging practices in these activities in a tailored flexible manner.[25–27]

Little is known about how practice ownership influences participation in external facilitation. In part, this is because

Table 1 Quantitative and Qualitative Sample, Data Sources, Timepoint, and Data Collection Dates

Sample	Data source	Timepoint	Data collection dates
Quantitative data			
Practice manager or lead clinician	Practice survey	Pre-intervention	Sept. 2015–June 2017
Practice members including clinicians, nurses, managers, and staff	Practice member survey	Pre-intervention	Sept. 2015–June 2017
Facilitators	Facilitator logs	During intervention	Nov. 2015–Dec. 2017
Qualitative data			
Cooperative leadership and facilitators	Interviews	Cooperative site visits	2016–2017
Facilitators	Field observations in primary care practices	Cooperative site visits	2016–2017

Note: Practices received the intervention at different timepoints based upon the cooperatives' study design (e.g., stepped wedge), intervention plan (e.g., duration of facilitation), and time needed to reach the recruitment goal

there are few studies large and diversified enough to examine the relationship between practice ownership and external facilitation. Understanding how practices of different ownership participate in external facilitation could inform the development of QI initiatives. Most QI evaluations lack sufficient numbers of enrolled practices to test ownership effects. EvidenceNOW is a large national initiative that has enrolled approximately 1500 small-to-medium-sized diverse primary care practices. This study's aim was to assess whether ownership was associated with primary care practices' level of participation in the QI facilitation offered by EvidenceNOW and to explore what factors influence practice leader and member attitudes toward and experiences of facilitation.

METHODS

Design

This study used an iterative mixed-methods observational design; early data analysis informed subsequent quantitative and qualitative data collection and analysis. Quantitative data determined whether the amount of facilitation differed by ownership, and qualitative data described facilitation participation differences by ownership. The evaluation of EvidenceNOW was guided by the Practice Change Model, which identifies how practices' internal and external motivations, resources, and choices for change, which are interdependent, influence change in clinical outcomes.[28] The Consolidated Framework for Implementation Research informed identification of factors that may have fostered or inhibited participation in facilitation.[29]

Setting

In 2015, the Agency Health Care Research and Quality (AHRQ) funded seven QI cooperatives in 12 US states to lead primary care practice participation in EvidenceNOW, a practice improvement initiative. AHRQ chose the term cooperatives to highlight the need for cross-organization collaboration to support practices and sustainability.[30] Cooperatives each recruited approximately 200 small-to-medium-sized (< 10 clinician) practices in their regions. AHRQ focused on small-to-medium-sized practices because they were likely to have fewer internal QI resources than larger practices or practices owned by a health system/hospital or part of a FQHC.[30] While the initial focus was on clinician-owned practices, cooperatives also chose to enroll similarly sized practices that were part of health systems or FQHCs to meet recruitment goals.[31] Cooperatives provided external support interventions (e.g., assistance with accessing and using audit and feedback and performance benchmarking data; education; facilitation) to practices.[32] Practice facilitation (details on facilitation activities described elsewhere)[32] was the main intervention strategy implemented by all cooperatives. Cooperatives implemented these interventions from 2015 to 2017. A national evaluation of EvidenceNOW, Evaluating System Change to Advance Learning and Take Evidence to Scale (ESCALATES), was funded[33] in 2015 to study the initiative. The study protocol was approved and monitored by the Oregon Health & Science University Institutional Review Board.

Sample

This study sample included clinicians and staff from the participating practices in EvidenceNOW and cooperatives' team members, including leadership and facilitators (see Table 1).

Quantitative Data Collection, Management, and Analysis

Quantitative data were collected from practices via surveys pre-intervention and from facilitators via logs during intervention implementation.

There were 1720 practices initially recruited to participate in EvidenceNOW. The following practices were excluded from analyses: 111 (6%) practices that withdrew from EvidenceNOW; 304 (17%) practices that did not submit

a practice survey or practice member survey (1720 practices received both surveys with response rates of 86.9% and 87.2% respectively); 134 (8%) practices that did not endorse being clinician owned, system owned, or an FQHC, as defined previously[6]; 10 (<1%) practices with greater than 90 facilitation hours (excluded because qualitative data suggested these data were unreliable and to avoid excessive skewing of analyses); and 44 (2.5%) practices with insufficient facilitation data. Our final sample included 1117 (65%) of recruited practices (more details on samples in Appendix).

Facilitation In all cooperatives except one, facilitators recorded the practice identification number, date of facilitation visit, type of visit (virtual, in person), and number of hours spent at each visit. One cooperative recorded only the number of hours every month. We measured participation in facilitation for each practice by the number of hours of facilitation, number of encounters with a facilitator, and number of months with an encounter with a facilitator.

Practice Characteristics Cooperatives collected a practice survey and practice member survey pre-intervention. The practice survey, completed by a practice manager or lead clinician, asked about practice characteristics, including size (e.g., solo, 2–5, 6–10 clinicians); ownership (e.g., clinician-owned solo or group practice, hospital/health system owned, FQHC); location (e.g., rural/urban/suburban); whether a practice was in a medically underserved area; the practice's payer mix (commercially insured; Medicare; Medicaid; dually eligible; uninsured; other insurance); the practice's patient panel mix, including proportion of patients by race (black; white; unknown) and ethnicity (Hispanic; unknown); and whether a practice participated in QI demonstration programs. The practice member questionnaire was distributed to all members of a practice and assessed adaptive reserve, which is a composite measure of available resources that could help practices adapt and change.[34] Details about survey development and collection are described elsewhere.[6]

Number of Practices from the Same Organization We determined the number of practices recruited from the same organization, which we defined as an entity that shared the same administrative and functional structure, because qualitative findings suggested that the number of practices from the same organization participating in EvidenceNOW influenced facilitation in those practices. To do this, we used cooperative-provided organization-level identification numbers.

We developed four multivariable linear regression models, sequentially adding groups of independent variables to understand the effect of each on the association between practice ownership and participation in facilitation (more details in Appendix). The first was an unadjusted model, only including ownership type. The second added indicator variables for each cooperative. The third added practice characteristics. The fourth added the interactive effect of practice ownership and number of practices recruited from the same organization. An alternative specification with organization fixed effects led to specification instability and highly imprecisely estimates. We clustered standard errors at the cooperative level using bootstrapping because of the small number of cooperatives, which allowed for correlated error terms at the organization level (nested within cooperatives) and at the cooperative level. Quantitative analysis was conducted using R version 3.5.1.

Qualitative Data Collection, Management, and Analysis

Qualitative data were collected during intervention implementation via site visits to the seven cooperatives (2016–2017).

Interviews and Observations ESCALATES team members experienced in qualitative methods, primary care, practice change, and QI conducted site visits to explore the cooperatives' experiences recruiting, engaging, and working with practices. We interviewed leaders of each cooperative ($n=14$) and worked with them to identify facilitators for field observation (25 clinician-owned, 24 system-owned, 15 FQHC practices) and interviews ($n=51$). We often spent a day with the facilitator, conducting an interview and observing their work. Interviews were approximately an hour in length, audio recorded, and professionally transcribed; transcripts were reviewed for accuracy. Field researchers took detailed field notes. Interview transcripts and field notes were entered into Atlas.ti (Atlas.ti Scientific Software Development GmbH, Berlin, Germany) for management, coding, and analysis.

We used an iterative, immersion-crystallization process for analysis,[35] analyzing qualitative data as they were collected. This process includes reading the data (immersion) to identify patterns for organizing (crystallization); coding data and organizing by themes,[36] comparing across cases; and corroborating findings with other data sources. In an initial immersion-crystallization cycle, a qualitative team developed a coding structure. This team worked closely with a quantitative team, regularly sharing emerging findings. We learned early that system-owned practices participated differently in EvidenceNOW, and we modified our interview guides to better understand cooperative leaders' and facilitators' experiences working with practices of differing ownership.

In a second immersion-crystallization cycle, we analyzed site visit field notes and transcripts. First, one qualitative researcher (CKP) analyzed the coded data related to practice ownership and identified preliminary findings that suggested a relationship between ownership and participation

Table 2 Practice Ownership Distribution by Cooperative

Cooperative	Clinician owned	FQHC	System owned	All
1	75 (52.4%)	37 (25.9%)	31 (21.7%)	143 (100%)
2	59 (38.6%)	42 (27.5%)	52 (34%)	153 (100%)
3	138 (93.2%)	9 (6.1%)	1 (0.7%)	148 (100%)
4	78 (45.9%)	23 (13.5%)	69 (40.6%)	170 (100%)
5	48 (31.8%)	25 (16.6%)	78 (51.7%)	151 (100%)
6	66 (40.2%)	70 (42.7%)	28 (17.1%)	164 (100%)
7	83 (44.1%)	40 (21.3%)	65 (34.6%)	188 (100%)
All	547 (49%)	246 (22%)	324 (29%)	1117 (100%)

Source: ESCALATES practice survey. Notes: Percentage values in round brackets denote row percentages

in facilitation. Second, two qualitative researchers (CKP, JDH) examined field notes and interview transcripts in their entirety to further identify how practices with different ownership participated in facilitation, conducted cross case comparison, and organized the data by themes. Throughout this process, they met with each other to corroborate, discuss, and refine the findings. Third, the final thematic structure was discussed by the team until all members agreed.

QUANTITATIVE RESULTS

In our final sample, the three ownership types were represented in each of the cooperatives (Table 2). Half the practices were clinician owned, 22% were FQHCs, and 28% were system owned. Clinician-owned practices were more likely to be smaller and located in urban areas; FQHCs were more likely to be larger (> 11 clinicians), located in rural and medically underserved areas, and with a greater number of patients on Medicaid or without insurance. On average, FQHC and system-owned practices had more practices belonging to the same organization that participated in EvidenceNOW compared with clinician-owned practices (11.9 and 14.9, respectively, versus 1.7 practices). Mean levels of the adaptive reserve scores were lower for FQHCs and system-owned practices compared with clinician-owned practices. The distribution of our full set of practice characteristics across ownership types is listed in Appendix A, Table 1. On average, clinician-owned practices received 20.9 h, system-owned practices received 14.9 h, and FQHCs received 14.7 h of facilitation (Table 3).

Regression results are presented in Table 4 (additional details available in Appendix B). In unadjusted regression models, FQHCs had significantly lower participation in facilitation than clinician-owned practices across two measures. There were no significant differences between system-owned and clinician-owned practices. Adjusting for cooperative fixed effects and practice characteristics did not substantially change the difference across the three measures by ownership. Adjusting for number of practices belonging to the same health system/FQHC resulted in non-significant differences across the three measures by ownership.

QUALITATIVE FINDINGS

Qualitative analysis identified three contextual factors that describe different patterns of participation in facilitation by ownership: recipient of the intervention, practice decision-making authority, and centralized health information technology. We did not identify any differences in participation patterns between system-owned and FQHC practices.

Recipient of the Intervention In clinician-owned practices, office managers, clinicians, practice staff, and/or a QI team participated in facilitation. In system-owned and FQHC practices, who the facilitators worked with varied. In some, facilitators met with leaders representing several practices at the same time; those leaders worked with practices to implement changes. In others, facilitators worked with practice members and system-level QI administrators or just with system-level QI administrators to understand system goals, the usefulness of facilitators, and how to integrate system goals within the practices. Facilitators presented ideas based on identified practice needs to the system-level QI team for approval before working with practices to implement changes. Some facilitators, working with practices in the same system/FQHC, coordinated with each other. Facilitators occasionally collaborated with central QI to implement changes that then spread across that systems' practices. "We implemented a CVD risk calculator. They weren't using one. And that went system wide." (cooperative 7, facilitator interview). Facilitators often saw themselves as "as a messenger […] where [their] job is to hear what they [the practice members] say and take it up a level, and hope that the system

Table 3 Participation in External Facilitation by Ownership

Participation in external facilitation [mean (sd)]	All practices	Clinician owned	FQHC	HMO/hospital/ health system owned
Number of hours	17.8 (17.3)	20.9 (15.8)	14.9 (20.7)	14.7 (15.9)
Number of encounters	10.0 (6.5)	11.3 (5.8)	8.4 (6.6)	9.1 (7.2)
Number of months with at least one encounter	7.3 (3.4)	8.3 (3.1)	6.3 (3.4)	6.5 (3.3)

Table 4 Regression Results of External Facilitation by Ownership

	Unadjusted	Adjusted for cooperative	Adjusted for cooperative and practice characteristics	Adjusted for cooperative, practice characteristics, and number of practices from the same organization
	Estimate (SE)	Estimate (SE)	Estimate (SE)	Estimate (SE)
Number of facilitation hours				
Clinician owned (mean)	20.94 (4.40)			
FQHCs (mean difference)	−6.05 (3.31)	−1.91 (4.29)	−6.03* (2.47)	−3.38 (3.65)
System owned (mean difference)	−6.21 (3.23)	−1.80 (1.49)	−3.33* (1.45)	−2.59 (2.15)
Number of facilitation visits (encounters)				
Clinician owned (mean)	11.27 (1.78)			
FQHCs (mean difference)	−2.83** (0.98)	−2.10** (0.65)	−2.80** (1.08)	−1.51 (1.00)
System owned (mean difference)	−2.17 (1.60)	−0.59 (0.40)	−0.61 (0.51)	0.21 (0.57)
Number of months with at least one facilitation visit				
Clinician owned (mean)	8.30 (0.93)			
FQHCs (mean difference)	−2.04**(0.72)	−1.04* (0.43)	−1.41* (0.70)	−0.54 (0.61)
System owned (mean difference)	−1.82 (0.93)	−0.44** (0.16)	−0.55** (0.21)	−0.05 (0.36)

The table shows mean values (for clinician-owned practices, the reference group) and mean differences for (FQHCs and HS practices) and standard errors (SE) for the following outcomes: number of practice facilitation hours, number of practice facilitation encounters, and months with practice facilitation encounters. The first column shows averages (clinician-owned practices) and unadjusted mean differences (FQHCs and HS practices). The second column shows regression-adjusted mean differences for FQHCs and HS practices, adjusting for cooperative fixed effects and practice characteristics. The third column shows regression-adjusted mean differences for FQHCs and HS practices, adjusting for cooperative fixed effects and practice characteristics. The fourth column shows regression-adjusted mean differences for FQHCs and HS practices, adjusting for cooperative fixed effects, practice characteristics, and size of a practice's organization. Standard errors were clustered at the cooperative level using bootstrapping with 1000 repetitions. Source: ESCALATES practice survey and practice facilitation information

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$

now hears that enough [to make a change]." (cooperative 2, facilitator interview). Another described working with both system QI administrators and the practice,

> I do a lot with the CQI [central QI] director. She and I will sit down. I will have an idea, and I'll see what she thinks. Then I present it to [the practice] and say, "Do you want to do it?" I can take things to leadership, which I have done, but [system leaders] have the right to refuse it. (Cooperative 7, facilitator interview)

Facilitators needed to balance differing practice and system goals to keep practices participating in facilitation while also being responsive to system-level goals.

Practice Decision-Making Authority and Autonomy Clinician-owned practices had greater decision-making authority and autonomy than system-owned and FQHC practices. The practice lead, often the lead clinician and office manager, made the decision to enroll in the initiative because they saw a benefit to participation, including working with a facilitator. Clinician-owned practices had autonomy to prioritize and implement QI work that was relevant and meaningful to them.

System-owned and FQHC practices often were enrolled by organizational administrators not located at the practice and did not get practices' agreement regarding participation. Health system and FQHC administrators wanted EvidenceNOW facilitators to help practices follow system-developed procedures and QI priorities and reach practices that were further from the administration hub or had recently been acquired. A cooperative 1 leader described, "We'll kind of work with [the health system] to spread the [health system] way." And a cooperative 5 leader stated:

> Most of the systems that we are partnering with, they have purposefully selected or encouraged their newer practices to be the one to participate. One of them refers to it as those that are a little further away from the mothership, that need to be brought into the family and they're using us to do that.

This lack of autonomy in the decision to enroll influenced practices' participation in facilitation: "They [practices] did not want to participate and were frustrated that [the health system] had 'signed them up,' because they were feeling understaffed and overwhelmed and felt like they didn't have time for this." (Cooperative 6, site visit field notes).

System-level QI administrators often decided what practices were worked on, provided workflows to implement, directed practices to focus on a specific measure (e.g., blood pressure), and/or wanted standardized strategies adopted. "They want to implement everything in all of those practices, the same standardized process, which is a task in itself" (cooperative 1, facilitator interview). This system desire

for standardization influenced participation in facilitation; facilitators reported practice frustration with their inability to work on what was important to them,

> [The health system] want[s] [the practices] to be on the same page and working on the same things and putting effort into the same areas, but that can be really challenging. The central administration is trying to get us [the facilitators] to coordinate, but the individual sites sometimes don't want to. They want to focus on what's important to them at the time. (Cooperative 4, Facilitator Interview).

Centralized Health Information Technology (HIT) Clinician-owned practices tended to have less sophisticated electronic health records (EHRs) and varied in the extent to which they could use their EHR to generate data for QI. Some cooperatives had HIT experts who supported practices (not counted as facilitation hours), but facilitators still dedicated time in many clinician-owned practices, to teach staff how to validate their data and use chart audits to inform QI. There was less of a need to focus on these activities in system-owned and FQHC practices because they tended to belong to larger organizations with standardized, robust EHRs, HIT, and reporting infrastructure. Reporting was generally managed centrally, which could delay the receipt of audit and feedback data. As one facilitator described,

> The health system [has] one person who does the reporting for all four clinics. I've been working with them for a little over six months and every meeting I say, "It would be great if you could have that report that has your measures with you every time, we meet so we [can] see how that blood pressure's doing." And every time they say, "Yes! I've got to get with [central administrator] and get that report." […] But we haven't gotten there yet. (Cooperative 1, facilitator interview)

In system-owned and FQHC practices, oftentimes, the individuals who generated reports were not part of the local team, which decreased their comprehension of how the data reports should be generated to be meaningful.

DISCUSSION

There were no differences in the amount of facilitation across all three measures in the fully adjusted model. However, our quantitative and qualitative analyses highlight differences in the patterns of participation by ownership. The quantitative data suggests that the number of practices participating from the same health system/FQHC on average lowered participation in facilitation because adding this variable erased the significant differences in facilitation by ownership types. Our qualitative data found that QI participants in system and FQHC practices experience a lower level of local autonomy for carrying out QI, and a higher level of organizational complexity, than participants in clinician-owned practices. These more complex contexts required involvement of people at multiple organizational levels; more steps and time were needed to obtain data, make decisions, and implement changes. In the clinician-owned practices, the lead clinician and manager did not need to consult higher management levels. However, clinician-owned practices required more facilitator help with QI skills including use of information technology for producing QI data. In some system-owned and FQHC practices, external facilitators worked with individual practices. In others, they worked with system-level QI leadership. Centralized data management and infrastructure had advantages; yet, they also resulted in data that were less useful for QI due to time lags and lack of tailoring to QI project need.

Intervening within a complex system to encourage and support practice participation in facilitation requires buy-in and commitment across layers and divisions of leadership within the system including within local practices.[37–39] While a single clinician-owned practice can be considered a complex system, embedding a single practice within a larger system with multiple practices increases complexity. Some of the differences may have been due to differences in study recruitment. Health systems and FQHCs purposively emphasized enrolling practices that were newly acquired or further from the administrative hub to enhance standardization across their practices, and system and FQHC practices had limited decision-making authority. Using QI to enhance standardization resulted in pushback from some practices. Clinician-owned practices, in contrast, volunteered to participate in the initiative. According to the Practice Change Model, it is critical that key stakeholders, such as practice leaders, are energized and motivated to bring about change.[28] A study with one EvidenceNOW cooperative found there were greater odds of practices engaging with facilitators and QI with greater practice leadership support for QI.[40]

Our data are consistent with the Model for Change and CFIR in pointing to organizational context as a key determinant of healthcare provider behavior and behavior change. Approaches to QI facilitation may need to be tailored differently across types of organizational ownership. For example, one way to stimulate stakeholder motivation is for system-level QI leadership to collaborate with practice-level stakeholders and align practice and system-level QI priorities so there is commitment at the practice. This collaborative "bottom-up" process was successful in obtaining local buy-in for a "top-down" QI initiative in a large health system.[41] External facilitators could support this collaborative approach[25,42] and act as a link for communication between different organizational stakeholders,[43] supporting trusting relationships between practice members and system-level leaders.[22,44–46] In EvidenceNOW, facilitators often served as the trusted conduit between practice and system-level QI

leadership. For clinician-owned practices, in contrast, our data suggest that a greater proportion of external facilitator efforts may need to be directed toward producing and interpreting QI data. Future studies are needed to understand whether substantially different facilitator skill sets are needed to achieve optimal results in practices with different ownerships.

A key role of the facilitator is to stimulate reflective, critical thinking that challenges organizational and individual values and assumptions, allowing for insights into current ways of doing things and identification of areas needing change.[21,44] The Practice Change Model suggests that multiple internal and external factors can block or foster stakeholders' ability to see opportunities for change, influencing this learning process and motivation for change.[28] How these factors influence practice and system-level stakeholders' learning process is likely to vary. In health system and FQHC practices, this learning process would likely need to occur within the various layers of leadership, which could result in divergent decisions on how to effect change. In clinician-owned practices, this learning process might also occur with various leadership roles, such as the clinician owner and the practice manager. Researchers could explore how this learning process is coordinated within local practice leadership and between individual practices and the larger system.

Health systems can provide the needed expertise and resources (e.g., QI resources, HIT expertise, and infrastructure) to promote change and use of QI, but these larger systems can also have processes that hinder change and use of QI, like requiring centralized approval for changes.[39,47] Timely, reliable, and credible data that measure performance are needed to inform data-driven QI.[48,49] In EvidenceNOW, facilitators provided technology support, including teaching staff how to extract data, generate reports, and use their data in clinician-owned practices. System-owned and FQHC practices centrally extracted data to generate reports; however, reports were not always timely or perceived as useful to inform the QI process, influencing participation. In health systems, facilitators should consider building relationships between QI teams and central HIT leaders and staff.

Limitations

Our study had a number of limitations. Our measures of facilitation might not fully measure all dimensions of participation. Also, since health systems and FQHCs worked differently with the external facilitators, our measure of facilitation may not have captured the participation in facilitation at the practice level where the facilitator worked with the system-level QI team or met with leaders from several practices at the same time. In these situations, it is not clear how facilitation was recorded. We determined the number of practices from the same organization participating in EvidenceNOW; however, this measure understates the size of a practice's organization if not all practices from its organization participated. We were not able to measure the influence of organizational culture in our regressions. In our sample, most FQHCs were affiliated with a large group/system and governed by a central administration; this structure is not necessarily the norm for FQHCs. We observed facilitators in a small number of practices, which might not have been representative of all the practices in the quantitative analysis. While we have a large sample, it is not fully representative of US primary care practices because EvidenceNOW operated in selected states and we excluded some practices from our analysis. We did not ask when a practice became affiliated with a system/FQHC; therefore, we do not know the extent to which a practice was integrated within a system/FQHC. Finally, our analysis did not examine the influence of practice disruptions on facilitation.

Conclusions

This study shows that in a large national QI initiative, clinician-owned practices, healthcare system practices, and FQHCs accessed similar amounts of the available external QI facilitator time. This similarity in quantity of use, however, masked different patterns of use, with facilitators for clinician-owned practices reporting more encounters with facilitators over more months of contact. These patterns may have been due to the different types of challenges endorsed by facilitators and practice or QI leaders across the different types of ownership. Clinician-owned practices reported more need for direct work with the practice, while healthcare system practices and FQHCs reported more time spent communicating across system layers and units. Facilitation is not a one-size-fits-all activity; continued scientific work on this key element of healthcare improvement initiatives is needed. Future work will assess the success of the EvidenceNOW initiative's QI approach. Based on our study, we expect results may differ by ownership as well as other contextual factors. Our study also demonstrates the value of mixed-methods research designs. Our quantitative methods enabled us to assess the overall impacts of ownership on facilitation, while our qualitative work enabled us to develop solid hypotheses about the reasons for our quantitative findings that can support future research.

Corresponding Author: *Cynthia K Perry, PhD, FNP-BC, FAHA; School of Nursing, Oregon Health & Science University, Portland, OR, USA (e-mail: perryci@ohsu.edu).*

Supplementary Information *The online version contains supplementary material available at https://doi.org/10.1007/s11606-021-07204-7.*

Acknowledgements *We would like to acknowledge the work of the seven cooperatives of the EvidenceNOW initiative.*

Funding *This research was supported by a grant from Agency for Healthcare Research and Quality 1R01HS023940-01 (PI: Cohen).*

Declarations:

Conflict of Interest: *Cynthia Perry: Co-I on AHRQ grant.*
Stephan Lindner, PhD: Co-I on AHRQ grant.
Jennifer Hall, MPH: none.
Leif I. Solberg, MD: alternate board member for nonprofit regional quality improvement, employee of nonprofit health plan and care system, Co-I on AHRQ grant.
Andrea Baron, MPH: none.
Deborah J. Cohen, PhD: PI on AHRQ grant.

REFERENCES

1. **Machta RM, J DR, Jones DJ, Kimmey L, Furukawa MF, Rich EC.** Health system integration with physician specialties varies across markets and system types. Health Serv Res. 2020;55 Suppl 3:1062–1072.
2. **Kane C.** Updated data of physician practice arrangments: for the first time, fewer physicians are owners than employees. American Medical Association;2019.
3. **Kocher R, Sahni NR.** Hospitals' race to employ physicians--the logic behind a money-losing proposition. N Engl J Med. 2011;364(19):1790-1793.
4. **Chang CH, J PWB, Lurie JD.** Geographic Expansion of Federally Qualified Health Centers 2007–2014. J Rural Health. 2019;35(3):385–394.
5. **Bishop TF, Shortell SM, Ramsay PP, Copeland KR, Casalino LP.** Trends in hospital ownership of physician practices and the effect on processes to improve quality. Am J Manag Care. 2016;22(3):172-176.
6. **Lindner S, Solberg LI, Miller WL, et al.** Does Ownership Make a Difference in Primary Care Practice? J Am Board Fam Med. 2019;32(3):398-407.
7. **Hu R, Shi L, Sripipatana A, et al.** The Association of Patient-centered Medical Home Designation With Quality of Care of HRSA-funded Health Centers: A Longitudinal Analysis of 2012-2015. Med Care. 2018;56(2):130-138.
8. **Nair S, Chen J.** Improving Quality of Care in Federally Qualified Health Centers Through Ambulatory Care Accreditation. J Healthc Qual. 2018;40(5):301-309.
9. **Shi L, Stevens GD.** The role of community health centers in delivering primary care to the underserved: experiences of the uninsured and Medicaid insured. J Ambul Care Manage. 2007;30(2):159-170.
10. **Baskerville NB, Liddy C, Hogg W.** Systematic review and meta-analysis of practice facilitation within primary care settings. Ann Fam Med. 2012;10(1):63-74.
11. **Bradley EH, Carlson MD, Gallo WT, Scinto J, Campbell MK, Krumholz HM.** From adversary to partner: have quality improvement organizations made the transition? Health Serv Res. 2005;40(2):459-476.
12. **Fowkes V, Blossom HJ, Mitchell B, Herrera-Mata L.** Forging successful academic-community partnerships with community health centers: the California statewide Area Health Education Center (AHEC) experience. Acad Med. 2014;89(1):33-36.
13. **Weiner BJ, Ricketts TC, 3rd, Fraher EP, Hanny D, Coccodrilli LD.** Area Health Education Centers: strengths, challenges, and implications for Academic Health Science Center leaders. Health Care Manage Rev. 2005;30(3):194-202.
14. **Casey MM, Moscovice I, McCullough J.** Rural primary care practices and meaningful use of electronic health records: the role of Regional Extension Centers. J Rural Health. 2014;30(3):244-251.
15. Institute of Medicine. Medicare's Quality Improvement Organization Program: Maximizing Potential. Washington, DC: The National Academies Press;20096.
16. **Lynch K, Kendall M, Shanks K, et al**. The Health IT regional extension center program: evolution and lessons for health care transformation. Health Serv Res. 2014;49(1 Pt 2):421-437.
17. **Maxson E, Jain S, Kendall M, Mostashari F, Blumenthal D.** The regional extension center program: helping physicians meaningfully use health information technology. Ann Intern Med. 2010;153(10):666-670.
18. **Newton WP, Lefebvre A, Donahue KE, Bacon T, Dobson A.** Infrastructure for large-scale quality-improvement projects: early lessons from North Carolina Improving Performance in Practice. J Contin Educ Health Prof. 2010;30(2):106-113.
19. **Dogherty EJ, Harrison MB, Graham ID.** Facilitation as a role and process in achieving evidence-based practice in nursing: a focused review of concept and meaning. Worldviews Evid Based Nurs. 2010;7(2):76-89.
20. **Grumbach K, Bainbridge E, Bodenheimer T.** Facilitating improvement in primary care: the promise of practice coaching. Commonwealth Fund;2012.
21. **Harvey G, Loftus-Hills A, Rycroft-Malone J, et al.** Getting evidence into practice: the role and function of facilitation. J Adv Nurs. 2002;37(6):577-588.
22. **Lessard S, Bareil C, Lalonde L, et al.** External facilitators and interprofessional facilitation teams: a qualitative study of their roles in supporting practice change. Implementation Science. 2016;11:97.
23. **Nagykaldi Z, Mold JW, Aspy CB.** Practice facilitators: a review of the literature. Family medicine. 2005;37(8):581-588.
24. **Taylor EF, Machta RM, Meyers DS, Genevro J, Peikes DN.** Enhancing the primary care team to provide redesigned care: the roles of practice facilitators and care managers. Ann Fam Med. 2013;11(1):80-83.
25. **Harvey G, Lynch E.** Enabling Continuous Quality Improvement in Practice: The Role and Contribution of Facilitation. Front Public Health. 2017;5:27.
26. **Cranley L, Cummings G, Profetto-McGrath J, Toth F, Estabrooks C.** Facilitation roles and characteristics associated with research use by healthcare professionals: a scoping review. BMJ open. 2017;7(8):e014384.
27. **Kotecha J, Han H, Green M, Russell G, Martin M, Birtwhistle R.** The role of the practice facilitators in Ontario primary healthcare quality improvement. BMC Fam Pract. 2015;16:93.
28. **Cohen D, McDaniel RR, Crabtree BF, et al.** A practice change model for quality improvement in primary care practice. J Healthc Manag. 2004;49(3):155–168; discussion 169–170.
29. **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;4:50.
30. **Meyers D, Miller T, Genevro J, et al.** EvidenceNOW: Balancing primary care implementation and implementation research. Ann Fam Med. 2018;16(Suppl 1):S5-S11.
31. **Sweeney SM, Hall JD, Ono SS, et al.** Recruiting Practices for Change Initiatives Is Hard: Findings From EvidenceNOW. Am J Med Qual. 2018;33(3):246-252.
32. **Perry CK, Damschroder LJ, Hemler JR, Woodson TT, Ono SS, Cohen DJ.** Specifying and comparing implementation strategies across seven large implementation interventions: a practical application of theory. Implement Sci. 2019;14(1):32.
33. **Cohen DJ, Balasubramanian BA, Gordon L, et al.** A national evaluation of a dissemination and implementation initiative to enhance primary care practice capacity and improve cardiovascular disease care: the ESCALATES study protocol. Implement Sci. 2016;11(1):86.
34. **Miller WL, Crabtree BF, Nutting PA, Stange KC, Jaen CR.** Primary care practice development: a relationship-centered approach. Ann Fam Med. 2010;8 Suppl 1:S68-79; S92
35. **Miller W, Crabtree B.** The dance of interpretation. In: WL CBaM, ed. Doing Qualitative Research. 2nd ed. Thousand Oaks, CA: Sage Publications; 1999:127–143.
36. **Braun V, Clarke V.** Using thematic analysis in psychology. Qual Res Psychol. 2006;3(2):77-101.
37. **Donahue KE, Halladay JR, Wise A, et al.** Facilitators of transforming primary care: a look under the hood at practice leadership. Ann Fam Med. 2013;11 Suppl 1:S27-33.
38. **Fernald DH, Deaner N, O'Neill C, Jortberg BT, degruy FV, 3rd, Dickinson WP**. Overcoming early barriers to PCMH practice improvement in family medicine residencies. Fam Med. 2011;43(7):503–509.
39. **Nutting PA, Crabtree BF, Miller WL, Stewart EE, Stange KC, Jaen CR.** Journey to the patient-centered medical home: a qualitative analysis of the experiences of practices in the National Demonstration Project. Ann Fam Med. 2010;8 Suppl 1:S45–56; s92.
40. **Halladay JR, Weiner BJ, In Kim J, et al.** Practice level factors associated with enhanced engagement with practice facilitators; findings from the heart health now study. BMC Health Serv Res. 2020;20(1):695.

41. **Ogunlayi F, Britton P.** Achieving a 'top-down' change agenda by driving and supporting a collaborative 'bottom-up' process: case study of a large-scale enahnced recovery programme. BMJ Open Quality. 2017;6.
42. **Petrova M, Dale J, Munday D, Koistinen J, Agarwal S, Lall R.** The role and impact of facilitators in primary care: findings from the implementation of the Gold Standards Framework for palliative care. Fam Pract. 2010;27(1):38-47.
43. **Stetler CB, Legro MW, Rycroft-Malone J, et al.** Role of "external facilitation" in implementation of research findings: a qualitative evaluation of facilitation experiences in the Veterans Health Administration. Implement Sci. 2006;1:23.
44. **Berta W, Cranley L, Dearing JW, Dogherty EJ, Squires JE, Estabrooks CA.** Why (we think) facilitation works: insights from organizational learning theory. Implement Sci. 2015;10:141.
45. **Nguyen AM, Cuthel A, Padgett DK, et al.** How Practice Facilitation Strategies Differ by Practice Context. J Gen Intern Med. 2020;35(3):824-831.
46. **Bidassie B, Williams LS, Woodward-Hagg H, Matthias MS, Damush TM.** Key components of external facilitation in an acute stroke quality improvement collaborative in the Veterans Health Administration. Implement Sci. 2015;10:69.
47. **Goldberg DG, Mick SS, Kuzel AJ, Feng LB, Love LE.** Why do some primary care practices engage in practice improvement efforts whereas others do not? Health Serv Res. 2013;48(2 Pt 1):398-416.
48. **Ivers NM, Jamtvedt G, Flottorp S, et al.** Audit and feedback: effects on professional practice and healthcare outcomes. Cochrane Database Syst Rev. 2012(6):CD000259.
49. **Ivers NM, Grimshaw JM, Jamtvedt G, et al.** Growing literature, stagnant science? Systematic review, meta-regression and cumulative analysis of audit and feedback interventions in health care. J Gen Intern Med. 2014;29(11):1534-1541.