Engaging Nonphysician Staff in Practice Facilitation-Mediated Quality Improvement to Improve Health Outcomes in Under-Resourced Clinical Practices in New York City

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ABSTRACT

In New York City (NYC), hypertension and high cholesterol disproportionately affect residents with low household income and people of color. The NYC Health Department employed practice facilitation (PF) to help nonphysician staff assume added roles aligned with team-based care. The objective was to improve blood pressure (BP) and cholesterol management in 132 small primary care practices serving mostly patients of color. We categorized practices into higher or lower levels of integrated PF, defined as physicians and nonphysician staff collectively participating in PF. Higher integrated PF was associated with improvements in BP (rate ratio [RR] = 1.09, *P*-value < .05) and cholesterol management (RR = 1.12, *P*-value < .01). Nonphysician staff in higher integrated PF practices reported skills enhancement and improved teamwork. Involving nonphysician staff in PF-mediated quality improvement efforts can be an effective strategy to improve health outcomes in small clinical practices serving communities with a higher burden of chronic disease and disproportionately impacted by poverty and structural racism.

KEY WORDS: blood pressure management, cholesterol management, heart disease, hypertension, practice facilitation

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Cardiovascular disease (CVD), the leading cause of mortality in New York City (NYC) and nationally,[1,2] can be prevented and managed by lowering elevated blood pressure (BP) and cholesterol. In NYC, approximately 2.1 million adults have hypertension (HTN)[3] and 2 million report having elevated cholesterol.[4] However, only one-third of NYC residents with HTN have BP at goal,[5] and nationally, 28% of people who have or are at risk for CVD are taking statins, cholesterol-lowering drugs.[6] Furthermore, structural racism contributes to disparities.[7-9] In NYC, Black (44%) and Latino (31%) adults have higher HTN rates than White (23%) and Asian/Pacific Islander (22%) adults.[5] In addition, HTN prevalence is greater among adults with household incomes less than 200% of the Federal Poverty Line (32%) compared to those with incomes equal to or greater than 400% of the Federal Poverty Line (26%).[5] Local health departments, like the NYC Health Department, can address these inequities by improving the clinical quality of care in areas impacted by structural racism. One approach is practice facilitation (PF), a method that promotes improvements in primary care practices by focusing

on building organizational capacity for continuous enhancement.[10] Primary care providers receiving PF are almost three times more likely to adhere to guideline-concordant care.[11] Yet, the impact of involving nonphysician staff in PF is less understood.

Here, we describe the impact of engaging nonphysician staff in a PF-mediated quality improvement (QI) intervention. The project aimed to improve BP and cholesterol management in primary care practices located in structurally disadvantaged communities by fostering collaboration between physicians and nonphysician staff within a team-based care (TBC) framework.

Methods

The Health Department's Bureau of Equitable Health Systems operates NYC REACH. Since 2010, NYC REACH has provided supportive services to over 1800 health care practices, including independent practices, community health centers, and hospitals, many of which are located in structurally marginalized and racially diverse neighborhoods.

Study population

NYC REACH recruited primary care practices (generally 1-2 providers) primarily caring for adults, already using an electronic health record (EHR), and situated in one of 24 neighborhoods chosen due to their disproportionate and higher-than-citywide average burden of chronic disease, poverty, socioeconomic inequality, and longstanding exposure to structural racism (Table, Supplemental Digital Content 1 available at http://links.lww.com/JPHMP/B336). We recruited practices in each of the four years of the intervention. Of the 302 practices that met the eligibility criteria, 168 practices were approached to enroll, and 134 practices enrolled (Figure, Supplemental Digital Content 2 available at http://links.lww.com/JPHMP/B337).

Intervention

The intervention took place between February 2019 and September 2022. Each practice was assigned a facilitator trained in EHR utilization, CVD, HTN, and QI concepts like rapid learning cycles. Facilitators conducted a structured assessment to identify practice needs and capacities. Practice facilitation included monthly on-site visits, which mostly shifted to virtual visits during the COVID-19 pandemic, and remote support (eg, virtual visits, phone calls, and emails) as needed between visits. Facilitators trained nonphysician staff to assume additional roles in BP and cholesterol management aligned with the TBC framework, such as setting goals, accurate BP measuring, and patient outreach.

Measures and data sources

We examined which staff roles facilitators interacted with during visits and categorized practices into 2 groups. We compared practices with higher PF integration, defined as having the proportion of PF visits involving both physician and nonphysician staff being above the median, with a minimum meaningful threshold of at least 40%, to practices with lower PF integration. Facilitators used a customer relationship management system to document their interactions with staff during each visit. We collected physician demographics through a survey.

We measured BP management (the percentage of patients aged 18-85 years with HTN achieving BP < 140/90) and cholesterol management (the percentage of patients aged 21-100 years, or 40-75 years with diabetes, receiving guideline-concordant statin therapy[12]) from baseline to follow-up. Pregnant women and patients with end-stage renal disease were excluded. We collected measures through monthly and program year structured data queries of the practices' EHR.

We conducted three focus groups with seven facilitators who had, on average, worked at NYC REACH for five years and conducted site visits with 12 practices. The focus groups aimed to understand barriers and facilitators to engaging nonphysician staff in BP and cholesterol management. In addition, we conducted key informant interviews with six nonphysician staff from practices with higher PF integration, with average employment duration of 12 years. Interviews focused on collecting nonphysician staff's perspectives on participating in and implementing BP and cholesterol management workflows.

Statistical analyses

We conducted pre- and posttest analyses to assess changes in BP and cholesterol management from baseline to Year four, comparing practices with higher and lower levels of PF integration. We used generalized estimating equation models for count data with a negative binomial distribution and a log link function to account for the random cluster effect across practices. We developed models that included the number of patients with BP < 140/90 or on a statin as the outcome variable, higher or lower PF integration and intervention year as the main effects, and the natural logarithm of the number of patients with HTN or eligible for statin

therapy as a fixed effect offset variable. Covariates included physician demographics (sex, race, nativity, and language spoken) and pre-baseline practice characteristics (practice-level composition of patient age, sex, race, and practice size). Inferences were based on the significance of the parameter estimates β ± standard error, rate ratio (RR), and RR 95% confidence intervals. *P*-values ≤ .05 were considered statistically significant. Owing to limitations in the underlying quality of the data, we did not conduct stratified analyses by patient race/ethnicity. We conducted all analyses in SAS software version 9.4 (SAS Institute, Inc, Cary, NC). The Health Department's Institutional Review Board approved the study protocol (IRB # 20-052).

Results

Physician demographics

Over two-thirds (67%) of physicians identified as male; two-thirds (64%) as Hispanic/Latino, non-Hispanic Black, or non-Hispanic Asian; three-quarters (73%) were born outside the United States; and most providers (84%) and staff (89%) spoke at least one language other than English (Supplemental Digital Content 3 available at http://links.lww.com/JPHMP/B338).

Practice characteristics and staff participation in PF

On average, practices served ~2,000 patients during ~9,000 encounters in 2017 (pre-baseline period), in which most patients (~70%) were 25 to 64 years old, Hispanic (~37%) or Black (~26%), and over a quarter (~28%) spoke Spanish (Supplemental Digital Content 4 available at http://links.lww.com/JPHMP/B339). Most PF visits involved administrative staff only (40%) or combinations of nonphysician staff and physicians (26%).

Changes in BP and cholesterol management

After controlling for physician and patient population characteristics, higher levels of PF integration were associated with improved performance on BP (RR, 95% CI = 1.09, 1.01-1.18; *P*-value < .05) and cholesterol management (RR, 95% CI = 1.12, 1.04-1.20; *P*-value < .01) (Table 1).

Practice facilitator and nonphysician staff perceptions of PF

Facilitators discussed how they promoted TBC through training physicians and nonphysician staff in team huddle best practices. Facilitators identified staff turnover, a persistent challenge worsened by the COVID-19 pandemic, as the primary obstacle to involving nonphysician staff in QI, a sentiment shared by some nonphysician staff. Facilitators successfully engaged nonphysician staff in QI by fostering strong relationships, leveraging office managers'/administrators' and physicians' leadership abilities, and offering value-added services like billing support unrelated to BP or cholesterol management (Supplemental Digital Content 5 available at http://links.lww.com/JPHMP/B340). Nonphysician staff expressed great appreciation for nonproject-related support, highlighting the facilitator's efforts to become indispensable to the practice.

Nonphysician staff emphasized the critical roles office managers/administrators played in overseeing providers, medical assistants, and front-office staff to implement PF guidance and QI projects. Nonphysician staff universally reported achievements in implementing BP management workflows with facilitators' support. Nonphysician staff felt that they gained knowledge, EHR skills, and confidence in managing practice QI workflows. Some nonphysician staff highlighted improved communication

TABLE 1

Change in Blood Pressure and Cholesterol Management from Baseline to Year 4, Comparing Practices With Higher Levels of Integrated PF to Practices With Lower Levels of PF Integration

Parameter Estimate β ± SE	Baseline	Year 1	Year 2	Year 3	Year 4	RR (95% CI)	*P*[a]
Blood pressure management							
Lower levels of integrated PF	0.79 ± 0.03	0.80 ± 0.03	0.77 ± 0.03	0.77 ± 0.04	0.80 ± 0.03	ref	ref
Higher levels of integrated PF	0.79 ± 0.05	0.79 ± 0.04	0.84 ± 0.04	0.87 ± 0.05	0.88 ± 0.05	1.09 (1.01-1.18)	<.05
Cholesterol management							
Lower levels of integrated PF	0.69 ± 0.03	0.73 ± 0.03	0.73 ± 0.03	0.72 ± 0.04	0.72 ± 0.03	ref	ref
Higher levels of integrated PF	0.69 ± 0.04	0.71 ± 0.04	0.74 ± 0.04	0.75 ± 0.04	0.77 ± 0.04	1.12 (1.04-1.20)	<.01

Abbreviations: PF, practice facilitation; RR, rate ratio.

[a]*P-value between group comparison of change; inferences between practices with higher vs lower levels of integrated PF are from baseline, defined as a 12-month period in the year before Year 1 to Year 4; data are parameter estimate β ± standard error (SE) and RR (95% CI); estimates were rounded up to 2 decimal places; covariates included physician demographics (sex, race, nativity, and language spoken) and pre-baseline practice characteristics (practice-level composition of patient age, sex, race, and practice size).*

Implications for Policy & Practice

- Investing resources to promote TBC in primary care practices serving communities affected by structural racism can help improve health outcomes and potentially reduce health inequities.
- Although we could not perform stratified analyses based on patient-level race, ethnicity, and language, such analyses are crucial.
- Local health departments can effectively implement PF that support TBC. To reduce resource requirements, organizations can combine virtual and in-person visits.
- The key to successful QI is maintaining on-going relationships with practices through regular interactions. These interactions need not always revolve around QI activities. Assisting nonphysician staff in resolving operational issues that affect their day-to-day work can free up their capacity to focus on QI activities.
- Engaging nonphysician staff, particularly office managers and administrators, in PF can lead to additional support for patients in improving BP and cholesterol management.
- Continuous QI and TBC are crucial elements for successful participation in value-based payment arrangements. Practice facilitation can enhance the skills, communication, and confidence of nonphysician staff, especially nonclinical staff, to support QI.
- Quality improvement workflows can be sustained without ongoing PF by training nonphysician staff to assume more active TBC roles in QI processes to increase the likelihood of maintaining changes.

and teamwork (Supplemental Digital Content 6 available at http://links.lww.com/JPHMP/B341).

Discussion and Conclusions

Our results suggest that involving nonphysician staff, particularly nonclinical staff, in PF-mediated QI can be effective in improving health outcomes in primary care practices serving communities disproportionately impacted by health disparities and higher social needs. Here, we describe key lessons. First, in primary care practices, nonclinical staff, such as office managers/administrators, play a critical role in implementing and overseeing QI activities. These nonclinical staff tend to have longer tenures at the practices compared to staff such as medical assistants, offering consistent leadership and sustainability for QI efforts. Second, engaging nonphysician staff in QI prepares practices for value-based care participation by promoting essential components of TBC, critical for improving patient care quality.[10,11,13-15] In small clinical settings where physicians often face challenges in managing patients with complex medical and social needs, strengthening the capabilities of nonphysician staff to support clinicians can aid in chronic disease management and prevention. Third, offering support on day-to-day operational needs, even when unrelated to QI activities, is a critical strategy for practice engagement.

One significant limitation is that we measured the participation level of physician and nonphysician staff in PF-mediated QI to improve BP and cholesterol management as a proxy to likely TBC implementation but did not measure the extent to which TBC principles were implemented. Future work is needed to understand best practices for effectively implementing TBC in under-resourced primary care settings. This will prepare practices serving patient populations with the highest needs to successfully engage in future value-based care arrangements.

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