AHRQ EvidenceNOW: Building State Capacity
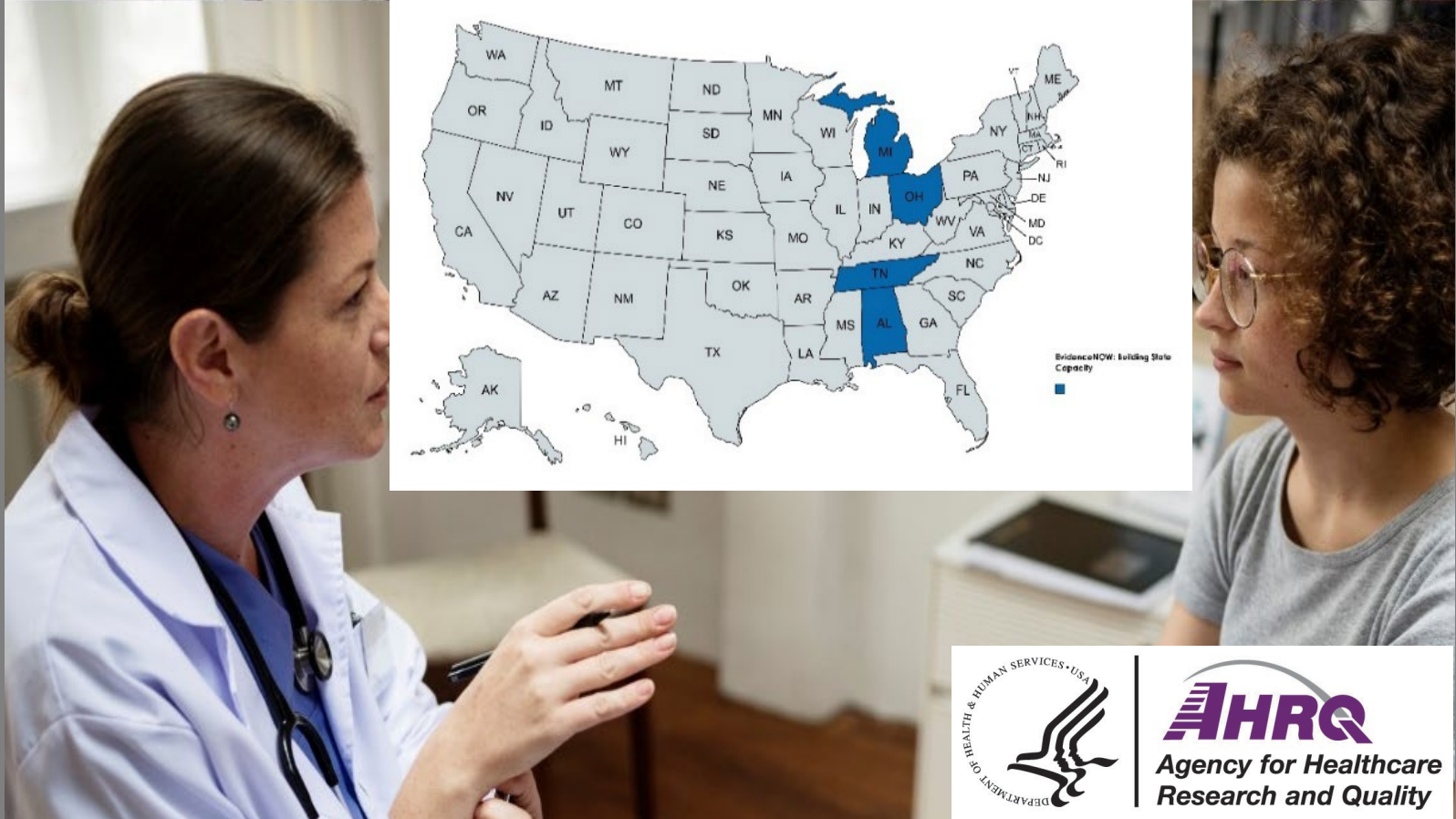## INTERIM EVALUATION REPORT II

Technical Assistance to and Evaluation of Grant Initiative to Develop State-Level Capacity for Dissemination and Implementation of Patient-Centered Outcomes Research into Primary Care

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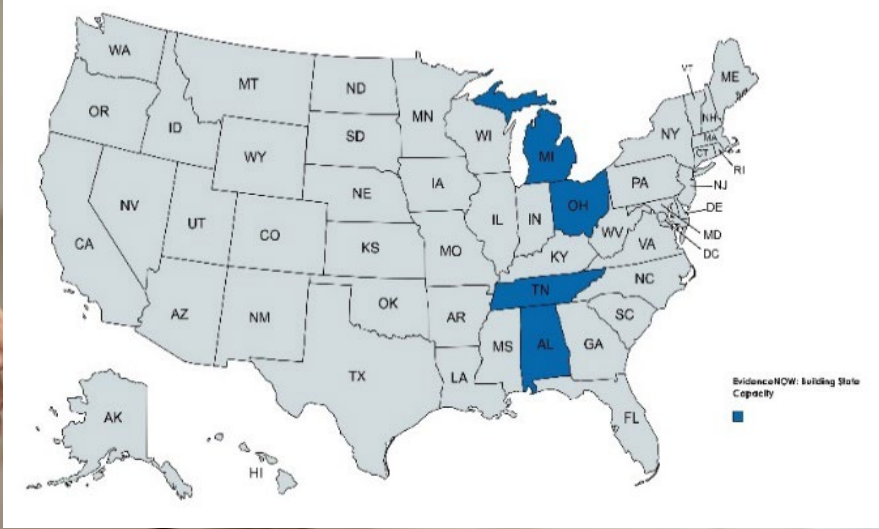
Interim Report 2

AHRQ EvidenceNOW Technical Assistance (TA) to and Evaluation of Grant Initiative to Develop State-level Capacity for Dissemination and Implementation of Patient-Centered Outcomes Research into Primary Care

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Acronyms

Acronym	Meaning
ACC	Alabama Cardiovascular Cooperative
AHA	American Heart Association
AHRQ	Agency for Healthcare Research and Quality
CEU	Continuing Education Units
CFIR	Consolidated Framework for Implementation Research
CME	Continuing Medical Education
CMS	Centers for Medicare & Medicaid Services
CPC+	Comprehensive Primary Care Plus
CVD	Cardiovascular Disease
DUA	Data Use Agreement
EBI	Evidence Based Intervention
EBP	Evidence Based Practice
EHR	Electronic Health Record
EN:BSC	EvidenceNOW: Building State Capacity
ETSU	East Tennessee State University
HHOI	Heart Healthy Ohio Initiative
HIT	Health Information Technology
IRB	Institutional Review Board
MICHWA	Michigan Community Health Worker Alliance
MOC	Maintenance of Certification
MOU	Memorandum of Understanding
PAC	Parent Advisory Council
PCOR	Patient-Centered Outcomes Research
PDSA	Plan, do, study, act
PF	Practice Facilitator
QI	Quality Improvement
SMBP	Self-Measured Blood Pressure
THHN	Tennessee Heart Health Network
UTHSC	University of Tennessee Health Science Center

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Executive Summary

In 2021 AHRQ funded four grantees to develop multi-organizational, state-level cooperatives and a network of primary care practices in their state, and recruit at least 50 practices to participate in a quality improvement (QI) evidence-based project to improve heart health. The four grantees are from Alabama, Michigan, Ohio, and Tennessee. This is the second interim report of the mixed-method evaluation of EvidenceNOW: Building State Capacity (EN: BSC). This report describes how the cooperatives evolved during their second year and how grantees recruited and are retaining practices. It provides an overview of the QI support and implementation strategies grantees used to support primary care practices.

Maturing Cooperative Models and Sustaining Cooperatives

During this round of data collection, respondents explained that their cooperative structure and management have largely remained the same since the first year, while relationships and trust have improved. Partnerships have grown and deepened. Respondents from all four grantees reported increased and improved communication, as well as continuously improved coordination and implementation processes.

Grantees from three states—Alabama, Michigan, and Tennessee—reported having secured no new partnerships during the second year, but said they were conducting ongoing outreach to fill identified gaps. The partnership gap that was of most interest to respondents was payer partners. The grantees from Tennessee and Alabama had engaged payer partners before year two. The Michigan grantee had never done so; they recognized this as a serious issue and discussed building those relationships in the coming year.

Strategies for Recruiting and Retaining Practices for Heart Health QI Project

All four grantees said that the most effective recruiting strategy was using their own and their cooperative partners' existing networks. Especially because many of the partner agencies supplying practice facilitators (PFs), and recruiting practices, had been engaged in these communities for years, they were seen as trusted partners bringing a quality intervention. Grantees had used other strategies, such as purchasing a list of practices and faxing recruitment materials, but reported limited success. Two grantees used financial incentives (bonuses) for signing up for the intervention. While respondents indicated that those incentives likely helped with recruitment, they were likely not large enough to draw in practices who weren't otherwise interested.

Across all four grantees, respondents reported retaining nearly all their recruited practices. The Alabama grantee lost one practice, the grantees in both Ohio and Michigan lost two practices, and the Tennessee grantee lost four practices. Respondents reported two main contributors to dropout:

- Most practices left the intervention because practice staff did not have the bandwidth to take on additional work related to the QI intervention, in view of staffing and capacity challenges exacerbated by the COVID-19 pandemic.

- One grantee reported that three practices from one health system dropped out because they had been randomized to the last wave in a stepped-wedge design and were no longer interested in participating after they had had to wait for over a year to be offered the intervention.

While relatively few practices have left the intervention, respondents reported five main strategies for continuing to retain practices:

Cooperative's Commitment and Investment in Retention

Respondents from both the Alabama Cardiovascular Cooperative (ACC) and the Tennessee Heart Health Network (THHN) felt that the time and effort they had invested in recruiting and retaining practices to participate in their QI interventions had led to high retention rates.

- The ACC's recruitment process was labor-intensive, including inviting interested practices to an introductory meeting, having these practices complete a readiness assessment, and finally having the ACC members vote on which practices to include based on their perceived readiness to implement the QI intervention (e.g., interest and engagement in the recruitment process, planned EHR changes).

- THHN respondents noted that one key to retention was the principal investigator's commitment to personally engaging with practices and walking them through the various aspects and requirements of the QI intervention to obtain their commitment to see the project through.

Strength of PFs' Reputation and Role

Respondents from both the ACC and the Heart Healthy Ohio Initiative (HHOI) pointed to strong relationships between the PFs and the practices as a key factor in retention.

- Respondents from both cooperatives described how the PFs' relationship-building skills, site engagement, and support meet the needs of practices and strengthen the PF/practice relationship.

- Respondents noted that practices participating in the HHOI QI project hold PFs in high esteem because of the breadth of their knowledge and experience, as well as their ability to develop and maintain strong relationships with practices.

Demonstrating Proof of Impact

Respondents from both Michigan and Ohio explained that a key retention strategy was being able to show that the QI interventions were improving practice workflows and patient outcomes and thus proving to practices that the QI intervention strategies were working and worth implementing. Data dashboards provide site-specific updates to help practices monitor implementation and outcomes. Positive outcomes and evidence of progress encouraged practices from both grantees to continue with the intervention.

Clinician-Centric Approach and QI Intervention Adaptability

The ACC, Healthy Hearts for Michigan (HH4M), HHOI, and the THHN all reported maintaining a clinician-centric and adaptable approach to implementing their QI interventions as a strategy to engage and retain practices.

- The ACC and THHN and their PF leads designed educational opportunities and developed learning materials with input from clinicians. The ACC, for example, conducted a needs assessment to identify clinicians' educational priorities related both to content and preferred formats. The THHN facilitated co-learning through clinician collaboratives, and when participation data indicated low engagement, shifted the format to provide more flexibility for clinicians to attend. PFs from both states gave clinicians a menu of options for QI interventions from which they could choose which worked best for their individual practices.

- HHOI explicitly used a co-design process to engage pilot practices in designing and implementing the intervention. Through this process, HHOI developed additional tools and resources to support implementation, including materials about care team communication and coordination.

- In Michigan, this took the form of allowing practices to have more flexibility in opting out of some of the QI interventions and choosing the order in which they implement their selected QI

interventions. This strategy allowed practices to customize the implementation and adjust it with changes in capacity and local needs.

Project Incentives

The last retention strategy we heard about from respondents was the use of monetary incentives, continuing education credits, badges (lapel pins with the HH4M QI project logo and plaques) to promote and brand practice engagement in the intervention.

QI Support Strategies

The purpose of grantees' cooperatives is to deliver QI support to primary care practices to enhance their capacity to deliver evidence-based care. Grantees used a variety of QI support strategies: "methods or techniques used by practice change support agents to motivate, guide and support practices in adopting, implementing and sustaining evidence-based changes and quality improvements."[1]

- All grantees used **practice facilitation** and most grantees provided support via mixed-modality and at least quarterly in-person visits with the exception of HHOI.

- All grantees provided **health IT support** (i.e., helping practices use their electronic health records for QI) and most grantees had PFs provide the support.

- Three grantees have begun (HHOI) or are planning (ACC, THHN) begun to provide **data, feedback, and** in some cases **benchmarking** reports to practices. Most grantees provided the data for practices, although they have encountered issues doing so in some instances.

- The HHOI and THHN have offered **shared learning** opportunities through learning collaboratives and webinars to provide peer-to-peer learning.

- HH4M and the HHOI are providing **incentives** to engage in QI activities, specifically data submission. The THHN and ACC also provided incentives, but for recruitment and not ongoing QI project engagement.

Besides the aforementioned strategies that are underway, the ACC and HHOI are developing **education and training** tools and webinars to disseminate to network and QI practices.

Determinants of QI Project Implementation Success

In this section, we describe central barriers and facilitators to success of the QI projects in local practices.

Barriers
Delays in Project Components

All grantees reported delays, including with implementing key components of their intervention. While the THHN was able to quickly recruit for and launch their QI project, they struggled with delays to the text messaging toolkit and intervention. The HHOI and ACC both reported delays with data reporting systems. The HHOI reported delays in receiving practice information to be able to feed back reports. The ACC had significant challenges capturing data to be able to support data feedback activities.

Data Sharing Challenges

The cooperatives designed different approaches to supporting practices in capturing and reviewing their QI metrics; these metrics have been impacted by data sharing challenges. The THHN planned for all

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[1] Solberg, L. I., Kuzel, A., Parchman, M. L., Shelley, D. R., Dickinson, W. P., Walunas, T. L.,... & Nagykaldi, Z. (2021). A taxonomy for external support for practice transformation. *The Journal of the American Board of Family Medicine*, *34*(1), 32-39.

practices to submit their QI metrics to the TN-POPNet, where the data team would then feed back dashboards with the individual practice's data and the network benchmark. However, not all practices were willing to share data with the TN-POPNet. The ACC had originally intended to take an approach similar to the THHN's, in which they would report data through a central system to each practice. However, because of extensive challenges with EHRs reporting QI data, the practices engaged in the ACC QI intervention have largely been unable to extract their data.

Patient Buy-In and Perceived Need for the Intervention
The grantees developed plans to overcome barriers related to patient buy-in and perceived need for the intervention. In two of its evidence-based toolkits, the THHN is using motivational interviewing training to help clinicians and clinical staff learn techniques designed to motivate change. HH4M PFs identified challenges related to patients' use of tobacco as part of Native American rites and rituals, and the difficulty of being sensitive to this aspect of the patients' culture while at the same time wanting to incorporate commercial tobacco cessation as a component of Indian Health Service practices' QI projects.

Evaluation Activities Interfering with QI Project Activities
All four grantees have reported challenges related to the evaluation component of the study. HH4M and the ACC both had considerable challenges with recruitment, which ultimately impacted the type of research design for their project. Three practices from one health system in Tennessee dropped out of the project because they had been randomized into the final wave and had waited a year for the intervention. Project staff from all grantees have spoken of the burden of the evaluation activities on the practices. While cooperative staff recognized the importance of evaluation as a component of this project, they voiced concerns about it reducing practice engagement or involvement because of repeated requests.

Practices' Competing Demands
Since the recruitment process began, respondents have explained the degree to which competing demands within the local practices have limited engagement. The COVID-19 public health emergency response resulted in changing healthcare priorities, high levels of staff turnover, and lower capacity to engage in QI projects. Respondents continue to report practice-level turnover as a problem.

Facilitators
Adaptable and Easy-to-Implement Interventions
Respondents spoke of the broad adaptability of some selected QI support strategies, in particular the practice facilitation and shared learning strategies. The grantees highlighted adaptability in two ways: both intentionally creating an intervention that is adaptable and adapting the intervention because of needed mid-course corrections. Respondents reported the need to reduce perceived complexity and cost (including to the practice, both financially and in terms of staff time), both while recruiting practices and continuing through the intervention, making it relatively low-touch and supportive. Respondents from across grantees recognized the time and staffing constraints of all practices. Thus, grantees intentionally made the interventions efficient, with a low level of work required of the practice, to reduce the barriers to practices' engagement and increase the likelihood of successful implementation of the QI activities.

Experienced PFs
The PFs are highly experienced and collaborative, and have extensive experience working with many of the practices as part of other QI initiatives in the past 10 years or more. The PFs are able to use their experience and background to help practices implement these interventions.

Shared Learning Opportunities
The THHN and HHOI created shared learning opportunities through learning collaboratives and webinars. Both grantees also showed how these shared learning opportunities were adapted to the needs of the practices.

Engaging Patients in the Design and Project Planning

The HHOI engaged in a co-design process that involved patients as a way to plan for the project to be responsive to patient's needs, although some respondents noted that results from the co-design process were not universally adopted. The ACC included a needs assessment as part of recruitment that identified emergent and important topics for practices and their patients. The THHN incorporated patient advisory councils to engage patients and receive feedback on tools and resources under development.

Aligning with Other Financial Incentives

In value propositions and recruitment conversations, grantees spoke of the importance of aligning with other financial incentives, and particularly of building capacity related to billing for services and payment models.

Importance of Improving Heart Health

Beginning with the initial recruitment and through to implementation, the grantees reported highlighting the importance of improving heart health. Respondents said that a reason practices joined was because of the importance of this topic, and that even practices that declined acknowledged its importance.

Increasing the Readiness for Implementation

Before the intervention, grantees worked with practices to increase their readiness to implement the QI intervention. The ACC's recruitment process was extremely time- and labor-intensive. Some respondents felt that by the time a practice enrolled, that practice would already have become invested in the work and strongly committed to participating in the QI intervention. Other grantees assessed readiness informally as part of recruitment and ongoing engagement with PFs.

Engagement of Key Staff

While many respondents reported challenges with practice engagement, respondents reported how if the right staff were engaged, in particular, strong administrative staff (i.e., practice managers) or QI support staff, the intervention was more likely to succeed. Similarly, getting buy-in from clinical leadership and engaging clinical leaders as part of the implementation team could provide opportunities to gain additional resources and formal project endorsement.

What We Have Learned

In the second round of data collection, we learned more about how the cooperatives are evolving and changing in their second year, strategies for practice recruitment and retention, and how grantees are implementing their QI intervention. We outline several lessons learned below.

- **Capitalizing on existing relationships is critical to the formation of a cooperative.** During the second year of implementation, cooperatives are continuing to evolve. Grantees largely formed their cooperatives by partnering with organizations with whom they had prior relationships. For example, all of the cooperatives, with the exception of Alabama, had existing relationships with key organizations (UTHSC and Qsource; HHOI had engaged a subset of partners for CardiOH; Altarum had worked with Northwestern previously, as well as the other QI organizations in rural Michigan). Drawing upon existing relationships appear to be efficient and reduce time to establish trust for Cooperatives.

- **Grantees identified the importance of payer partners for future sustainability and should also have addressed sustainability at the beginning of the grant**. While most key partners were engaged within the first year, some ongoing outreach to new partners occurred in Year 2. Grantees identified the importance of payer partners for future sustainability. The THHN and ACC had engaged payer partners in Year 1, the HHOI was able to connect and engage payer partners in Year 2, and HH4M was still seeking to engage payer partners in future years. Grantees made limited progress toward engaging other new (non-payer) partners.

- **The cooperative models may have advantages and disadvantages toward different aims and may also have insights for other states building cooperatives and supporting a state's primary care capacity.** At the end of Year 2, the advantages and disadvantages of different cooperative models, as well as the potential impact of key contextual factors for each state, are not much clearer than they were for Year 1. By the final year, we plan to offer insights on the advantages and disadvantages of an academic-led Cooperative versus a quality improvement organization-led model for recruitment and future sustainability of the cooperative or networks. For example, THHN has incorporated its cooperative and network as part of a broader population health consortium that has greater buy-in and support, engaging different funding sources to improve population health broadly. Alternatively, HHOI engaged a subset of partners from CardiOH because of funding constraints, creating two similar and overlapping interventions in the same state. The degree to which both interventions will be sustained is an important question for future data collection. The last year of data collection will allow more opportunities to provide insights for other states and regions that wish to build a cooperative, as well as for AHRQ to consider the grant mechanisms, recommended model components, and partners.

- **Building a network of practices may be more realistically built after there is something specific to offer, after supporting a set of practices, or if more time was provided for an initiative.** AHRQ had envisioned grantees building their networks first, and then enlisting practices for the QI project. However, grantees (largely due to challenges recruiting) prioritized enlisting practices for the QI project. As we identified in the previous report, network building was not a central focus of the first year of implementation and while it was more of a focus, it was still limited in Year 2. Grantees described developing websites and listservs to disseminate educational materials and opportunities to networks, although the ACC reported ongoing challenges with building and launching their website. Most the grantees equate their websites and listservs with their "network" at this point. Further, grantees reported confusion by practices when they were invited to participate in both the network and the QI project. Enlisting practices to participate in the QI project <u>first</u> might be advantageous compared to enlisting practices to a network without offering them anything specific or before something is ready to be offered to them, especially given the limited bandwidth of practices. Future data collection will explore how cooperatives are expanding their networks, or truly enlisting practices into a network to support other future QI initiatives.

- **Given the unrelenting challenges for primary care, future initiatives should be realistic about feasibility in terms of the number of practices, characteristics of practices engaged and expectations.** Recruitment into the QI project was challenging for all grantees, although some struggled more than others. The most common reasons for declining to participate in the QI project were staffing issues and concerns about capacity. In the end, the ACC and HH4M had to loosen their selection criteria to reach their recruitment goals. Thus, it may be important when planning QI initiatives for primary care to be realistic about the feasible number of practices to enlist as well as their characteristics, as grantees' experiences and past initiatives lay bare the unrelenting challenges recruiting primary care practices given their limited capacity, staff turnover, burnout and other factors which worsened with the COVID-19 pandemic.

- **With the evolving nature and characteristics of primary care practices (i.e., more practices integrating with health systems), understanding which practices need QI support, what type of support and why may be key for future large QI initiatives.** Practices that are more networked or integrated (i.e., part of a health system) can be recruited quickly or at least offer multiple practices more quickly. While networked practices may benefit recruitment efforts, they may pose downstream challenges with contamination for an evaluation. Networked practices may have an ability to pull their QI measures centrally for all practices, for example, but that may result in fewer local staff within an individual practice having the experience to pull or examine their own EHR data in support of their QI effort. Additionally, within a QI effort a smaller practice may actually be more nimble at

implementing a new workflow or idea more readily, than in a larger practice Networked practices may or may not have higher practice capacity than individual practices, which we will examine once we have baseline practice data. If networked practices have higher baseline QI capacity, they may not see as much of an increase in QI capacity. All of this may have implications for the field and AHRQ in considering which practices needs QI support, what type of support and why or is there a capacity level at which practices no longer need support to implement evidence-based care.

- **When working with practices, QI implementers and researchers will need to consider the potential tradeoffs between randomization and retention challenges in stepped wedge design projects, which may be worsened when enlisting multiple health system-affiliated practices and randomizing by health systems**. The grantees had retained nearly all of the practices they had recruited. The primary challenges for practice retention overlapped with recruitment challenges described above. THHN reported additional retention challenges because of their waved study design. Some practices had been randomized to the last wave and dropped out because they did not want to wait a year for the QI support. This was more problematic because THHN opted to randomize all practices within a single health system together in a wave to reduce potential bias within the health system (such as if the same administrative QI lead would be implementing the work in all practices). This resulted in the loss of multiple practices within the same health system because of the wait to receive the intervention in the final wave. When working with practices, QI implementers and researchers will need to consider the potential tradeoffs between randomization and retention challenges in stepped wedge design projects, which may be worsened when enlisting multiple health system affiliated practices and randomizing by health systems.

- **In this resource constrained primary care environment, interventions that make participation demands minimal maybe need to be the priority. It will be important to examine, to the extent possible, if the modality of PF support and/or the 'dose' affects the clinical outcomes or capacity of practices.** While all grantees are using practice facilitation for their QI support, they varied in the amount of contact and support, as well as the mode (virtual versus in-person). Additionally, there are some differences in the roles PFs are playing and how they are supporting practices (e.g., providing the health IT support). It will be important to examine, to the extent possible, if the modality of PF support and or the 'dose' effect the clinical outcomes or capacity of practices. The COVID-19 pandemic may have accelerated the shift to different modes of support such as virtual facilitation. In this resource constrained primary care environment, interventions that make participation demands minimal maybe need to be the priority. However, there may be other key factors that are more qualitatively assessed that may have as great of an impact on the outcomes (e.g., relationship of PF with practice, trust, experience).

- **While aiming to make an intervention low-touch and supportive, the intended impact on clinical outcomes may be diminished**. Grantees in EvidenceNOW: Building State Capacity thoughtfully considered the QI project's design, and aimed to make the intervention low-touch and supportive. Respondents from across grantees recognized the time and staffing constraints of all practices. Thus, they made the interventions efficient, with a low level of work required of the practice, in the hope of reducing barriers to practice engagement, and ultimate success. For example, in the ACC, the PFs intentionally engage throughout the month using phone calls and emails, to reduce burden but maintain support. A potential concern with low-touch and responsive interventions is that without some effort and intention, the intervention may not have the intended impact on clinical outcomes. The question of practice facilitator 'dose' and implementation progress effect on achieved outcomes will be investigated in the next report.

- **Cooperatives and organizations involved in future QI initiatives should have contingency plans for obtaining QI data to provide to practices for feedback.** For data, feedback, and benchmarking, most grantees intended to provide the data to practices, versus teaching the practice staff how to pull their own data. The HH4M had always planned to teach practices which was consistent with their

philosophy of supporting primary care. The ACC, in contrast, had no choice, after finding that a central data repository approach was not feasible. It remains to be determined whether one model or another of providing this QI support improves practices' capacity more than another. It is also unclear to what extent, if at all, grantee teams or PFs used alternative ways or less precise measures (e.g., chart reviews) to provide practices their data for feedback purposes. This could be a function of bandwidth or resources and time available for PFs to support practices. This may also be a challenge when providing support, wholly or in part, virtually (i.e., it may be more difficult for the PF to do or help with a chart review or examine the EHR reports). Understanding the extent to which PFs or grantee teams used alternative methods or workarounds to obtain data in support of their QI efforts will be examined in final year of data collection. Cooperatives and organizations involved in future QI initiatives should have contingency plans for obtaining QI data to provide to practices for feedback.

- **Leaders of QI initiatives should anticipate issues pulling QI measures in terms of time and resources, and train PFs in considering alternative, less precise ways of measurement (e.g., chart reviews).** As with EvidenceNOW: Advancing Heart Health, grantees and practices struggled to pull QI measures from practices' EHRs and from central repositories, which distracted significantly from the planned QI support and ability to share practice data as feedback to understand their current evidence-based practices, and identify where they could improve. The challenge of pulling QI measures from EHRs in support of QI is a well-documented challenge for primary care improvement initiatives that has not abated. Given these challenges, leaders of QI initiatives should plan for this likelihood in terms of time and resources, as well as train PFs in considering alternative, less precise ways of measurement (e.g., chart reviews).

- **AHRQ or other organizations that lead QI initiatives should extend the period of performance to allow time for data collection at the beginning and not at the expense of the QI support.** While the *EvidenceNOW: Building State Capacity* initiative reduced the evaluation data collection burden for grantees and practices compared to *EvidenceNOW: Advancing Heart Health*, the grantees still had issues with the time and resources involved in collecting data for the evaluation. Some grantees said that PFs spent too much time collecting data, versus supporting the practices. This may beg the question of how and by whom data should be collected for these types of QI initiatives, or at what cost. This issue may also be addressed by expanding the time needed for interventions, to allow time for data collection at the beginning and not at the expense of the QI support.

- **Quality improvement should not be treated as a side effort in primary care, but rather as a key component of delivering evidence-based care.** Addressing the broader challenges that primary care providers and practices face—such as staffing challenges, burnout and barriers to pulling QI metrics or data from EHRs—may be a prerequisite for increasing the adoption and implementation of evidence from patient-centered outcomes research (PCOR) into practice. Additionally, AHRQ or other federal agencies and funders may need to acknowledge the importance of investing in the infrastructure of primary care and require grantees to address sustainability early on.

1. Introduction

The mission of the Agency for Healthcare Research and Quality (AHRQ) is to "produce evidence to make healthcare safer, of higher quality, and more accessible, equitable, and affordable, and to work within the U.S. Department of Health and Human Services and with other partners to make sure that the evidence is understood and used."[2] A central focus for the Agency in the last decade has been to foster the use of evidence gained through patient-centered outcomes research (PCOR) to accelerate transformation in primary care, and to conduct research on best practices to implement this evidence.[3,4]

To advance its mission, AHRQ issued a Request for Applications (RFA) entitled Supporting Primary Care to Advance Cardiovascular Health in States with High Prevalence of Preventable CVD (cardiovascular disease) Events; AHRQ calls the resulting project "EvidenceNOW: Building State Capacity (EN: BSC), advancing equity in heart health."[5] AHRQ selected four grantees—one each from Alabama, Michigan, Ohio, and Tennessee to build state-level cooperatives that included a network of primary care practices, and, from this network, recruit at least 50 practices to participate in a quality improvement (QI) project to improve heart health.

AHRQ awarded a contract to Abt Associates to conduct an independent evaluation of this new project, evaluating the grantees' development of cooperatives, recruitment, and development of practices into a network, and QI project implementation. For the evaluation, Abt used a mixed-methods design collecting both primary and secondary data, including administrative records (grant applications, grantee progress reports), key informant interviews and member checking sessions with project respondents and knowledgeable non-respondents, and data on grantee needs and challenges that the Abt technical assistance team had collected.[6]

In this second interim evaluation report, we describe how the cooperatives evolved during their second year, and how grantees recruited and are retaining practices. We provide an overview of the QI support and implementation strategies grantees used to support primary care practices.

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[2] https://www.ahrq.gov/cpi/about/mission/index.html

[3] McNellis R. Facilitating Transformational Change in Primary Care. August 2019. Agency for Healthcare Research and Quality, Rockville, MD.

[4] Ono SS, Crabtree BF, Hemler JR, et al. Taking innovation to scale in primary care practices: the functions of health care extension. Health Aff (Millwood). 2018; 37(2): 222–230.

[5] https://grants.nih.gov/grants/guide/rfa-files/RFA-HS-20-002.html

[6] The evaluation team will use technical assistance meeting notes to shed light on grantee experiences and challenges.

2. Methods

2.1. Evaluation Design and Questions

This second interim report was originally intended to address research questions 1-7, but given delays and challenges for grantees it is too soon to answer RQ5, *To what extent and in what ways were the cooperatives successful at using new state-level capacity to launch other improvement projects/attract other funding?* And we do not, yet, have practice-level data to begin answering RQ7, *How did QI support contribute to increasing the QI capacity of primary care practices to implement PCOR findings and improve the delivery of blood pressure control and smoking cessation?* We will answer RQ5 and RQ7 in the final evaluation report.

Exhibit 1 provides an overview of this report's findings reported below (Sections 3.1 to 3.3), the specific research questions (and components of questions) we will answer, and the data sources we will use.

Exhibit 1.   Overview of Report Sections, Research Questions, and Data Sources

Report Sections	Research Questions (Questions in bold are addressed in report)	Primary Data		Secondary Data		
		Interviews	Member Checking	Grantee Applications	Progress Reports	Notes and Documents
Maturing Cooperative Models and Sustaining Cooperatives (3.1)	RQ1. How successful were grantees at creating cooperatives to deliver primary care QI support? What were the causes or explanations for successes and failures?	✓	N/A	✓	✓	✓
	RQ2. What are the organizational characteristics of the cooperatives, and how do they differ? How did these differences affect outcomes?-What is the level of satisfaction with the cooperatives among the partners, other state and local organizations, network members, and QI practices?	✓	✓	✓	✓	N/A
Strategies for Recruiting and Retaining Practices (3.2)	RQ3. To what extent and in what ways were the cooperatives able to recruit practices into their networks?	✓	N/A	N/A	✓	N/A
	RQ4. To what extent and in what ways were the cooperatives successful at engaging the practices in the networks and increasing their QI capacity to implement PCOR findings?	✓	N/A	N/A	✓	✓
QI Support Strategies (3.3)	RQ6. What kinds of *strategies* did cooperatives use [plan to use] to deliver QI support to practices participating in the heart health QI project?	✓	✓	✓	✓	✓

Note: RQ5 is: "To what extent and in what ways were the cooperatives successful at using new state-level capacity to launch other improvement projects/attract other funding?" RQ7 is: "How did QI support contribute to increasing the QI capacity of primary care practices to implement PCOR findings and improve the delivery of blood pressure control and smoking cessation?" Results related to these questions will be discussed in the final evaluation report.

2.2. Implementation Science Framework

Guided by approaches from implementation science,[7] the research uses comparative case study methods[8] and implementation science frameworks, including the *Consolidated Framework for Implementation Research (CFIR)* by Damschroder et al. (2009).[7] CFIR is an integrated implementation framework that is based on a review of 500 published sources in 13 different scientific disciplines. The original CFIR (2009) consists of five domains: (I) intervention characteristics, (II) outer setting, (III) inner setting, (IV) characteristics of individuals, and (V) process. Within each of the domains there are several constructs (see https://cfirguide.org/constructs-old/).

In this report, we use the CFIR (2009) domains and constructs to explore determinants of implementation success, focusing on the implementation of the evidence-based interventions within the participating practices.

2.3. Data Sources

2.3.1 Key Informant Interviews

Before recruiting key informants, the Abt evaluation team worked with AHRQ and grantee leaders to identify potential respondents. The team adapted its original schedule for conducting interviews with two grantee partners: for the THHN we delayed interviews with partners until the local evaluation could be completed; and for the ACC we did not interview particular partners as requested by the principal investigator, to reduce burden on these already overstressed partners. The Abt team identified potential respondents in a variety of roles, including grant leads, cooperative leads, project managers, implementation leads, evaluation leads, PFs, partners, and various other staff. We also sought to identify individuals from groups that were currently unaffiliated with the cooperative, typically through probing and snowball sampling in interviews or other conversations with grantee leadership. The aims of these interviews were to understand whether an unaffiliated organization had been approached about the cooperatives or was aware of the cooperative's work, as well as to offer insights into other initiatives in the state, and potential sustainability.

From August to December 2022, we interviewed 51 respondents across the four cooperatives (see Exhibit 2). Of those 51 respondents, 7 were from organizations that were not yet affiliated with the cooperatives. In the original evaluation design, we had intended to interview representatives from organizations that either had not yet engaged in the cooperative but had been recruited, or had not been identified by the grantees as a useful partner but had come to the awareness of the evaluation team. Of the 22 potential respondents that were not interviewed, 14 did not respond to our repeated requests and 8 declined to participate. The reasons they provided for declining to participate included that they were new to the role, did not feel they had enough knowledge about the intervention, or were unavailable for an interview. The members of unaffiliated organizations were less likely to agree to participate, in large part because of their limited knowledge of the cooperative itself, indicating that continued pursuit of these respondents in the final year of the project is unlikely to add useful information for the evaluation. The exception to that is in Ohio, where they have overlapping but separate initiatives (i.e., Cardi-OH) that include organizations that are not formally affiliated with the HHOI.

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[7] 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. Implementation science. 2009 Dec;4(1):50.

[8] Yin RK. Case study research and applications: Design and methods. Sage publications; 2017 Sep 27.

Exhibit 2.   Key Informant Interview Respondents by Project Role

Grantee State	Principal Investigator or Co-principal investigator	Project Manager	Project Staff	Partner	Implementation Lead	Evaluation Lead	Practice Facilitator	Unaffiliated Orgs	TOTAL*
Alabama	2	1	0	2	2	1	1	0	**9**
Michigan	2	1	1	1	1	1	2	2	**11**
Ohio	4	1	0	3	1	1	1	6	**17**
Tennessee	2	1	4	3	1	1	3	1	**15**

*51 individuals participated in interviews. One respondent plays a role in two cooperatives; one interview was conducted that covered content from both cooperatives.

Experienced evaluators from the Abt team conducted each interview. Interviews lasted approximately 45 minutes and were conducted over WebEx and recorded with the respondent's permission. We reviewed and cleaned the automated WebEx transcript to use for analysis. The evaluation team met to discuss interview progress and emergent challenges.

OMB approved the package for this data collection effort on January 22, 2021 (OMB #0935-0259); approval expires on January 31, 2024. The Abt Associates institutional review board (IRB) determined that this project is exempt from IRB review.

2.3.2   Secondary Data

The following section provides a description of secondary data used in the evaluation. In this case, secondary data included grantee applications, quarterly progress reports, grantee annual reports, coaches' notes, notes from technical assistance meetings, and notes from other sessions with grantees.

2.4.   *Qualitative Coding and Analysis*

We coded and analyzed data from key informant interviews using Nvivo (v.12) qualitative analytic software. We used additional data from grant applications, progress reports, and technical assistance documents to supplement the key informant interview data to provide context about cooperative models and structure.

We continued to refine the codebook developed for the previous report. Codebook development was an iterative process that included deductive codes (established *a priori* from the evaluation questions and CFIR domains) and inductive codes (emerging from the data). Research team members, led by an experienced qualitative researcher, independently read selected excerpts of data sources (interview transcripts) to link to *a priori* codes and develop new codes. The research team discussed codes, definitions, and inclusion and exclusion criteria to refine the codebook. We continued to refine the codebook until the codebook included enough detail to capture meaningful distinctions. We used that codebook to complete the coding of all materials. The codebook is in Appendix 1.

For the Year 2 analysis, the evaluation team reviewed the first interim report and notes from the previous analysis while coding and synthesizing findings from Year 2 interviews. In the analysis process, the team noted previously unreported changes and evolutions in the cooperative and network development, recruitment and retention strategies, and work with the practices engaging in the QI project. Additionally, team members reviewed progress reports, annual reports, submitted documents, and technical assistance team notes for additional information.

A new section of this report is the description of the QI support strategies that grantees used or planned to use. Identifying and defining implementation strategies allows researchers to explore the "how" of

interventions. Beginning last year, we identified QI support strategies as specified in EvidenceNOW: Advancing Heart Health and developed by Perry et al.,[9] and iteratively explored whether grantees were using some new strategies. Following the work of Proctor[10] and Powell,[11] we categorized the planned strategies, starting with practice facilitation; health IT support; data, feedback, and benchmarking; and education and training, while allowing other strategies to emerge in analysis. We engaged grantees in a member checking session in early 2022 to review our categorization and validate or critique our assessments. Through the evaluation of interview data that we gathered during the second year of data collection, we have refined our understanding of grantees' QI support strategies, including specifying the intended "temporality" and dose (when known).

[9] Perry, C.K., et al., Specifying and comparing implementation strategies across seven large implementation interventions: a practical application of theory. Implementation Science, 2019. **14**(1): p. 32.

[10] Proctor, E.K., B.J. Powell, and J.C. McMillen, *Implementation strategies: recommendations for specifying and reporting.* Implementation Science, 2013. **8**(1): p. 1-11.

[11] Powell, B.J., et al., A refined compilation of implementation strategies: results from the Expert Recommendations for Implementing Change (ERIC) project. Implementation Science, 2015. **10**(1): p. 21.

3. Findings

3.1. Maturing Cooperative Models and Sustaining Cooperatives

3.1.1 Individual Grantees' Cooperatives
Alabama Cardiovascular Cooperative (ACC)
Cooperative Functioning Adaptations
ACC respondents did not describe changes to the cooperative structure, but they did describe an evolution to a more nimble management approach that proved to be a significant strength of their functioning. Respondents described this approach as one that allowed them to adapt their efforts to the expertise of their members. Initially, leadership identified potential members based on what they thought the ACC needed in order to meet the project goals, such as members with specific subject matter expertise or technical skills. As the cooperative developed, they discovered that members had additional expertise and skills that, while not initially sought, would be beneficial to the cooperative's functioning. For example, they recruited one member specifically to help with recruitment, but later learned that this person had significant program evaluation experience, so they shifted their working structure to take advantage of their evaluation expertise. They have been able to give individual members a voice and allow them flexibility to contribute both where they are strong and where they want to grow. One respondent said, "My role evolved and changed, and I guess improved because we figured out what the cooperative's needs were, and we were able to allow people to fit where they wanted to contribute." Respondents reported this flexibility as contributing to finding the best solutions to challenges.

In addition to the cooperative structure, this nimble approach was also reflected in the way the ACC shifted its communication and engagement strategies during this time. They adopted a multipronged approach that included opportunities for regular all-member touchpoints, and restructured the approach to working meetings to reduce meeting fatigue that could deter engagement and ultimately slow progress. They maintained two monthly all-member meetings for collaborative-wide status updates and decision-making and developed committees (called "courses") focused on specialized, topical problem solving and strategic planning. . They also hosted an annual all-member, in-person retreat. They added a Microsoft Teams channel. As one respondent articulated,

> "[It's] nice to have a one-stop shop for everyone to go to for information and to get updates and ask questions … it really gave us a way to connect outside of having formal meetings, which is helpful because there is a lot of other things that happen day-to-day, week-to-week and this kept the dialogue open and allowed for a lot of people to be able to get input on different things. It's been really nice and helpful and I think more people have been motivated to contribute that way, too."

Another way they have restructured their communication strategies is to select a single point of contact with AHRQ to ensure that guidance related to grant activities is consistent.

Partnership Adaptations
ACC respondents did not describe any changes in partnership during this reporting period. Several respondents, however, described the relationship with Qsource as one that had continued to build and have a positive impact on the ACC structure as well as project implementation. One need the ACC reported is for a partner who can build solutions related to handling and presenting data. The ACC originally contracted with a third-party vendor, the Consortium for Southeast Healthcare Quality (COSEHQ), to build data dashboards using the EHRs, but the partnership did not successfully meet this objective. According to technical assistance call notes (October 12, 2022), the ACC did not fully understand what COSEHQ needed in order to develop dashboards when they initiated the contract. They also were misinformed about COSEHQ's experience with similar projects. Once the project started, the two parties realized the discrepancies in expectations and the work effort changed, causing the cost of COSEHQ to expand beyond the ACC's budget. The principal investigator reported that COSEHQ was in

another state and not "on the ground" helping the ACC problem-solve. The ACC was not able to provide PFs with data resources they needed to track the intervention's progress. Respondents describe this challenge as being so substantial that it consumed the majority of the ACC's meeting time in its second year. They plan to establish a contract with an external agency to provide this expertise, but have not been able to establish this role on the ACC.

Cooperative Sustainability
The make-up of the ACC membership was cited as a critical element that may need to shift in order to maintain progress toward better health outcomes. The principal investigator described the original ACC membership as effective for initiating the project implementation, but said that as they acquired lessons learned, they realized that they do not have the right people involved to successfully address sustainability. The current leadership is thinking about innovative ways to diversify the cooperative membership to include non-academic partners such as policymakers, business leaders, payers, and others who may have an interest in attracting new development to the ACC. A broader representation is needed to consider long-term planning for what the ACC wants to sustain and what they can sustain based on current state infrastructure. They have invited members from these groups to join the next ACC retreat. One respondent said,

> "Ranking in the 48th or 49th position for every health outcome you can name has to bother somebody. Who it probably bothers the most I would hope is anybody who's trying to convince businesses to come here and invest, so those people are not at the table. We've been focused on health agencies. We don't think that's the right place to look."

Respondents indicated that the ACC has begun discussing sustainability of the cooperative and that a key factor of those conversations is the need to remain nimble regarding the role members play or the types of members who are involved. One respondent said:

> "[The ACC function] may need to change sometimes … the partners may need to change or their role that the partner plays may not be significant just because your organizational title is one thing, it doesn't mean the capacity or the capabilities are there. Sometimes you have to do self-evaluation on a routine basis along the way to really determine where you're headed and where you need to be."

Healthy Hearts for Michigan (HH4M)
Cooperative Functioning Adaptations
Respondents described the cooperative's continued regular communication as one of the most important facilitators to ensuring that cooperative members were well informed about the cooperative's various QI activities. In the first round of data collection, we heard from several HH4M staff. While many of the partners had previous experience with each other, HH4M was a partnership started for this project, and their relationships continue to grow and evolve as the project continues. Respondents noted that even though the HH4M team is spread across Michigan and Illinois, they have managed to coordinate regular meetings that help to keep the cooperative members up to date on the various aspects of the work. Respondents pointed to several key meetings that have helped to increase trust and improve cohesion and collaboration within the HH4M cooperative. These meetings include: all-hands meetings held twice a year in which cooperative members share information about what they're working on for the project; weekly leadership team meetings; and monthly "lunch and learn" meetings open to all cooperative members to attend and present about different aspects of the project. Respondents also noted that any information not covered in one of these meetings was usually sent in cooperative-wide emails and/or within the monthly newsletter to keep everyone abreast of current activities and updates.

Partnership Adaptations
In this second year of data collection, respondents from HH4M noted that the cooperative had not brought on new partners. Respondents did describe two instances where HH4M leadership had informal meetings

with the American Heart Association (AHA) and the Michigan Community Health Worker Alliance (MICHWA) to gauge their interest in joining the cooperative, but neither organization has formally joined HH4M. One respondent noted that MICHWA was interested in joining the cooperative but would most likely partner with HH4M in Year 3 of the grant. In the case of the AHA, HH4M cooperative leadership had an initial meeting with the senior director of community impact but have not been able to engage them further in the HH4M initiative. In the next round of data collection, we will follow up with the HH4M leadership to see whether there have been any developments with MICHWA and the AHA.

While there were no new partnerships in the second year, respondents highlighted partnership gaps and opportunities to build new partnerships. One respondent noted that none of the HH4M cooperative members had strong relationships with any of the private payers in the state. One respondent explained that the QI intervention is important work but that when trying to gain financial support from private payers, the cooperative would need to have meaningful data and a strong case to convince the private payers that investing funds to sustain the QI intervention would result in bottom line savings. In the next round of data collection, the Abt team will follow up with respondents to determine whether they have had any further conversations about engaging private payers to sustain the QI intervention and if so, how they will build a strong case to do so.

One respondent noted that if partnerships with payers fail to materialize, the cooperative could also consider partnerships with other large non-profit organizations that could help sustain the work. The respondents suggested the United Way and the YMCA, both of which have a significant presence in communities in which the HH4M has practices, and potentially have the financial ability to sustain certain aspects of the work such as the practice facilitation and technical assistance, which are very expensive. The respondent did not specify whether they intended to reach out to national, state, regional, and/or local branches of these organizations for partnership.

Cooperative Sustainability
Respondents described how HH4M leadership were planning to engage partners for the future sustainability of the QI interventions that they had begun implementing with practices, specifically funding the PFs to continue working with practices. Respondents said that the cooperative held a sustainability brainstorming meeting during which they discussed engaging private payers such as Blue Cross, Blue Shield of Michigan as well as the state Medicaid department, because these health organizations have the financial ability and resources to sustain the heart health interventions after the grant funding ends.

Heart Healthy Ohio Initiative (HHOI)
Cooperative Functioning Adaptations
Respondents representing the HHOI reported limited changes to the cooperative's structure and function in Year 2. The most notable changes referenced were the efforts of leadership to distinguish the HHOI from Ohio Medicaid's Cardi-OH collaborative. In the grant application, the grantee leadership envisioned the HHOI to have a significant tie-in to Cardi-OH's existing network, activities, and resources, but given funding and scope constraints of Cardi-OH and its exclusive focus on Medicaid, HHOI leadership actually needed to establish boundaries between the two efforts. Therefore, leadership at HHOI (notably at the principal investigator level) worked to distinguish staffing roles, bringing on a new team to address HHOI communications and messaging. The team also developed its own HHOI website, which references but is not integrated with the existing Cardi-OH website. Despite these changes, Cardi-OH partners were still reported to participate in the stakeholder engagement committees that meet on a biannual basis, and to receive regular updates on HHOI activities as part of monthly newsletter distribution. Feedback from some HHOI cooperative members underscores that these efforts to distinguish HHOI from Cardi-OH have had a negligible impact in helping partners distinguish HHOI efforts from Cardi-OH efforts. This was evident to the evaluation team, in part, because several respondents had difficulty answering

questions about HHOI cooperative development, evolution, and intervention activities distinctly from their experiences with Cardi-OH.

The cooperative's operations continued to be organized into siloed work teams addressing designated facets of the project based on respondents' areas of effort. Cooperative members reflected that the team structure has allowed them to be efficient with their time and resources while working toward shared goals. In Year 2, work team changes included greater delegation of dissemination and engagement responsibilities to other cooperative work teams and increased autonomy of the Data and Evaluation team to operate independently of the Core Leadership team.

Following completion of practice recruitment for the Heart Health QI intervention, cooperative members noted that time needed to maintain daily operations had increased significantly to ensure effective provision of support to 50 practices. Many respondents reported that the primary function of the cooperative shifted from that of a broad, multi-stakeholder recruitment effort to one focused on implementation of the QI intervention and dissemination of targeted information and resources. As the cooperative evolved to focus on the QI project implementation, the cooperative's communication processes have evolved to focus on timely distribution of social media and monthly newsletter updates to partners.

Respondents recognized several key strengths of the cooperative, including that the HHOI benefits from its association with and proximity to the Cardi-OH collaborative, and demonstrates strong experience leading QI projects. Most HHOI respondents reported enjoying working together and highlighted that efforts made early on to establish shared understanding of collective goals and objectives have contributed to a strong mission-focused mindset among partners. Another strength is that the group has developed a "culture of safety" by encouraging partners to reach out to one another with questions small or large to ensure everyone remains on the same page as the group works to identify and overcome challenges.

One respondent raised a concern related to cooperative processes and functioning. The respondent highlighted that the Core Leadership team had instituted abrupt changes to decision-making processes, specifically moving decision-making authority from work team leads and to the Core Leadership team. Other respondents did not mention this as a challenge. Respondents did not raise other issues with the evolving functioning of the cooperative.

Partnership Adaptations
Respondents, particularly those in grant leadership roles, noted some partnership changes in the HHOI. One respondent noted that Year 2 saw the HHOI engage additional healthcare payers. The HHOI has increased focus on engaging payer partners, and has launched a series of Payer Clinical Team cooperative meetings to standardize payer-related aspects of QI activities across the state. The American College of Cardiology (a professional organization) also reached out to the HHOI with interest in joining the cooperative. According to an HHOI leader, this organization will provide expert consultation and dissemination support via an existing podcast.

At the cooperative level, challenges identified focused primarily on the impact of COVID-19 on planned activities. As highlighted in our report on Year 1, pandemic disruptions resulted in delayed recruitment and engagement of the QI intervention practices. While HHOI partners interviewed expressed support for decisions made to delay recruitment and implementation of QI activities, many reflected that the lag between recruitment and implementation efforts with sites was detrimental to practice retention. Interviewees reflected on this period as a lesson learned for how to adapt communications and engagement strategies to support practices during tumultuous times. In secondary efforts to meet the 50-site recruiting goal following sites' dropping out, HHOI partners focused more on building direct relationships with sites and providing information on immediate logistics than on providing sites with dates and deadlines.

Cooperative Sustainability
Respondents from the HHOI expressed mixed opinions on cooperative sustainability. While partners expressed interest in continued collaboration, they thought the tools and materials already developed will continue to be used given their high quality and general applicability. Partners also acknowledged that while the disparities in heart health outcomes addressed by the HHOI will not be resolved in the three-year period, limited sustainability planning for the cooperative has taken place within work teams to date.

Respondents highlighted the main sustainability concerns for the cooperative center as access to funding and political support. As one respondent put it, "a politician would rather fix a pothole than worry about somebody's health twenty years down the road," referencing the difficulty in engaging and securing political support for this type of preventive health effort in a society focused on short-term, demonstrable results. Political will (or lack of it) for change was often cited as a barrier to cooperative sustainability, because of its capacity to inhibit progress toward health information technology interoperability and the transition from fee-for-service to patient-centered reimbursement models that support QI programs.

Respondents also noted a concern with maintaining engaged cooperative partners, and said that within the cooperative and partner organizations, succession planning will be critical to ensure strong leadership, coverage of responsibilities, and continued momentum toward shared goals. While no known or planned project departures were referenced among the HHOI leadership team during the interview process, one interviewee highlighted from prior experience working in academic-led cooperative settings that often promotions or new opportunities may impact a member's ability to contribute at the same level over time, and recommended the cooperative consider planning in advance to handle such occurrences as they work to develop their sustainability approaches.

HHOI leaders spoke to the role of upcoming funding opportunities via Medicaid to provide sustainability for the cooperative's greater QI efforts. Notably, Ohio Medicaid recently released a Request for Applications to develop regional QI hubs; cooperative leadership have applied for this funding. Respondents said that this initiative could provide the opportunity to build on the work being done under the HHOI by expanding statewide dissemination, reach, and participation in QI efforts over a five-year period. In addition, respondents noted the opportunity to also engage the state's regional healthcare improvement collaboratives to support sustainability efforts. The regional health improvement collaboratives are separate from the HHOI and have opportunities to access funding needed to sustain QI programming statewide.

Tennessee Heart Health Network (THHN)
Cooperative Functioning Adaptations
Respondents from the THHN did not report significant changes in cooperative structure or functioning, because of the continued strong relationships across the project team. Respondents described a high degree of trust and coordination within the THHN, and many attributed this to the leadership of the principal investigator, Dr. Jim Bailey. Qsource and the University of Tennessee Health Sciences Center (UTHSC) have established trust and an equal partnership, such that the staff from Qsource feel open to offer suggestions and feedback.

Partnership Adaptations
In interviews, respondents did not report new partners or partnerships. During the second year of implementation, grant leaders reported better understanding of which partners were more willing to be engaged. One respondent said that representatives from the THHN Medicaid managed care plans were "cheerleaders" for the project, providing support and advocacy. While the THHN originally had identified physician champions to support the implementation of the QI heart health intervention, the champions were too busy and unable to engage in the end.

Some partnerships were threatened this past year. East Tennessee State University (ETSU) had signed on as a partner initially, but over time became less willing to share identifiable I data with the THHN. The university was threatening to leave the project, taking a number of clinics participating in the QI intervention with them. Dr. Bailey traveled with the Chancellor of the UTHSC to ETSU to have high-level talks and negotiations about the important role that ETSU played in the THHN and the QI intervention. Over time, the THHN agreed to allow practices to provide either identifiable or deidentified patient data as part of their data submission process, in part to manage concerns raised by ETSU.

The THHN relies heavily on partnerships across several large academic institutions. As one respondent described, these academic partnerships require strong, robust relationships, which take time and trust to build. Large academic organizations also often require high levels of bureaucracy and complicated processes for collaborating and sharing data, which were significant challenges during the first two years of the THHN. These challenges included delays with inter-organizational memoranda of understanding and data use agreements (DUAs), as well as the aforementioned challenges with ETSU's willingness to share its data.

The THHN Population Health Consortium, which is the parent organization above the THHN, has continued to build its patient advisory councils (PACs). The Memphis PAC is established and regularly meeting, and the THHN Population Health Consortium team is expanding into other cities in the THHN. During PAC meetings, the leads from UTHSC bring in presenters to provide education and training on specific, relevant topics, and leave time for the PAC respondents to provide feedback and input on project materials, such as patient information sheets or patient-facing intervention components.

Cooperative Sustainability
The THHN is part of a broader structure, the THHN Population Health Consortium. By creating a broader organizational structure that is supported by the UT Health Science Center and other investments, Dr. Bailey, who serves as both the THHN project principal investigator and executive director of the THHN Population Health Consortium, hopes that the work building statewide connections and joint support for population health initiatives will be sustained. Respondents reported that they thought this broader structure would allow additional funding opportunities and a bigger potential scope for the work, which could support future sustainability. Respondents also suggested that the broad involvement of different partners, such as funders, academic organizations, large health systems, and the TN Primary Care Association, is necessary for future sustainability. The ongoing engagement with funders, particularly with the focus of expanding reimbursement for community health workers and other health coaches, was another strategy for improving the sustainability of the work of the THHN.

3.1.2 Cross-Grantee Overview of Changes to Cooperatives
During this round of data collection, respondents largely said that their cooperative structures and management processes remained the same, while relationships and sense of trust have improved. Respondents from all four grantees reported improved communication, which resulted in enhanced coordination and improved implementation. One focus of these communications was to clarify roles and expectations, particularly when working with partners and across agencies. Respondents from the HHOI reported the additional challenge of needing to clarify how the HHOI is distinct from Cardi-OH; they continue to struggle with partners and external organizations confusing the two.

While only the HHOI expanded its partnerships in the second year, respondents from all four grantees reported ongoing and continued outreach to additional partners to try to fill identified gaps. The partnership gaps that were most pressing to respondents were lack of payers, because of the important role that payers can plan in future sustainability. The THHN and ACC had engaged payer partners previously, and the HHOI was able to engage payer partners and hold ongoing discussions with them in the cooperative's second year. HH4M recognized failing to engage with payer partners as an important and serious gap and sought to close that in the coming year. Respondents from the THHN reported that

they had nearly lost an important partner in ETSU. While they were able to convince ETSU to remain with the THHN, it required significant investment and negotiation.

3.2.   Strategies for Recruiting and Retaining Practices

In this section we describe the approaches and strategies for practice recruitment into the network and QI intervention, strategies for retaining practices, and reasons for not participating.

3.2.1   Approaches and Strategies for Practice Recruitment

In the first interim report, we described the approaches grantees took to recruiting into the network and the QI project. In this report, we describe how the grantees have continued to recruit into the network, how recruitment aims have changed or adapted, and the successful and unsuccessful strategies each grantee reported using to recruit into the QI project.

Recruitment to the Network

In the second year, grantees started to provide resources and support to practices that were not engaged in the QI project, primarily focusing on developing content for websites and other broad dissemination tactics.

Although the HHOI and THHN focused on network development more directly than the ACC and HH4M, the Ohio and Tennessee cooperatives still struggled to grow their networks. The THHN instituted three tiers of involvement:

- Tier 1 practices participate in the QI project. They receive practice facilitation and other inventions (health coaching, physician-pharmacist collaboration, and motivational text messaging) and monthly reports on their heart health measures. They also receive access to the THHN Heart Health website and other communication.

- Tier 2 practices are in the network but not in the QI project. They participate in the TN-POPNet (the data network) and receive monthly reports on their heart health measures. They also receive access to the THHN Heart Health website and other communication.

- Tier 3 practices are broadly engaged in the network but do not receive monthly reports or participate in the QI project. They have access to the THHN Heart Health website and other regular communications. The website includes the toolkits and links for trainings for the three interventions: health coaching, pharmacist-physician collaboration, and heart health messages. The toolkits are comprehensive, including a step-by-step implementation guide, trainings, evaluation plans, and plans to support sustainability. The website also includes recordings of past learning collaborative webinars and short video "stories" from patients, clinicians, and clinical staff about the impact of the clinical interventions.

During the second year this tiered system became more complicated. Not all practices that engaged in the heart health initiative (Tier 1) were willing to share their identifiable data with the TN-POPNet, which meant that some were unable to receive the monthly data reports. Respondents described the significant challenges they faced in signing DUAs and engaging practices to share data. Working with practices to sign DUAs at times required multiple meetings with leadership and technology support teams, and involved more time and investment than initially expected.

In Ohio, HHOI leadership engaged in network recruitment as part of their pre- and post-award process, attempting to gauge interest in network participation as well as potential capacity to participate in the QI project. In their ongoing network development, they provide ongoing information through a website, podcast series, and other information dissemination. HHOI respondents reported significant confusion within the network and among other key stakeholders about the relationship between the HHOI, Cardi-OH, and other ongoing programs such as the regional health improvement collaboratives in Cleveland,

Columbus, and Cincinnati, and the Centers for Medicare and Medicaid Services Comprehensive Primary Care (CPC) Plus program. Most HHOI respondents conflated HHOI and Cardio-OH.

The ACC and HH4M are primarily planning to use a public-facing website with tools and resources. While this is not consistent with AHRQ's vision for building a network or what, exactly, a network would be, this is what these grantees describe as their "network" for this grant. Respondents from ACC cited delays in their website-development process. They had originally planned to update an existing website but later realized it was too old to accommodate an adequate update and they instead need to create a new one. They reported plans in developing a virtual community of practice by designing and disseminating a needs assessment for practices to indicate how they want to receive education and whether and how they want to communicate with other practices. They are combining findings from the needs assessment with best practices identified in the literature and will launch the community of practice and website in the next reporting period.

Similarly, respondents from HH4M described the primary focus for their network as being to develop a [website](#) to support practices beyond those that participated in the QI intervention. HH4M intends to provide "self-help" versions of the tools that they are using with practices in the QI intervention to provide education and resources to other network practices. Once the website is ready to launch, HH4M will work to advertise the resource through cooperative members' existing networks. There are also plans to send out information about the website to all the rural health clinics in the state and include information about it in the Michigan Medical Society's newsletter. As of when we conducted the interviews, the website was in process with the intention of launching it by the end of 2022.

Individual Grantee Recruitment Strategies

Practice recruitment is now complete for all grantees, as they are now implementing the intervention. In the section below we describe each grantee's recruitment strategies for practices engaging in the QI intervention.

Alabama Cardiovascular Cooperative (ACC)

ACC respondents shared that the most effective recruitment effort was that of leveraging existing relationships to directly contact practices. Respondents said that the ACC fully committed to this strategy: they collaboratively identified any possible contact that an ACC member had from a practice who would potentially enlist in the QI project. These contacts included clinicians, office managers, and in one case the spouse of a clinician. This process netted 400 practices with whom ACC members had an existing relationship. The approach was robust, and time-intensive: there was no identified trend in who the most appropriate person might be, and it often took several touchpoints with a practice before reaching the appropriate person with whom to discuss enlisting in EvidenceNOW.

Once interest was established, there was an introductory meeting to more fully introduce the QI intervention and establish goals and objectives specific to the practice. The meeting was scheduled at a time convenient to the practice and could be virtual or in person, also depending on the practice's preference. After the introductory meeting, practices were required to complete a 12-question readiness assessment. Following that, the entire ACC membership reviewed the readiness assessment, discussed the practice's readiness and capacity to make substantive changes, and used that information to vote on the appropriateness of the practice to join the QI project. Practice retention was almost 100%: one practice dropped out due to circumstances unrelated to the project. One respondent said, "by the time they enrolled, they [the practices] were very interested in participating." ACC respondents recognized that this was an involved process, but reported that they thought it made for an easy transition from the intensive recruitment process to enrollment and engagement.

Alabama was one of two states that used incentives; each practice received $2,000 for participating. Respondents did not think the financial incentive was a major contributor to recruitment success; as one respondent described, "It may have helped, but it wasn't the only thing."

The ACC respondents described mass distribution of an informational flyer to 2,000 practices via fax as an ineffective recruitment strategy. While the flyer in theory had greater reach and required less time, it did not result in recruitment of any practices. When ACC members followed up with recipients of the flyer, most did not recall receiving it. "Cold call" telephone outreach was similarly unsuccessful.

Healthy Hearts for Michigan (HH4M)
In interviews with respondents from HH4M, they described significant recruitment challenges. When asked why, respondents pointed to practices' lack of capacity and decreased staffing—issues further exacerbated by the COVID-19 pandemic. Ultimately, HH4M were able to achieve their recruitment goals using three main strategies.

The first strategy that the cooperative used to meet their recruiting quota was to rely on their existing relationships with practices. Respondents noted that the most successful recruiting tactics were calling and faxing practices with whom they had pre-existing relationships and making sure that they were connecting with the "right person" at the practice, usually an office manager at the small rural clinics, or sometimes a quality manager at larger practices.

The second strategy was broad outreach. HH4M purchased a list of primary care physicians in the state to aid recruitment beyond their existing networks. The HH4M recruiting team sent out approximately 2,500 outreach communications through phone, fax, and email as well as approximately 4,500 flyers via mail to about 900 practices. One respondent felt that faxing potential practices about joining the QI intervention was an "innovative" outreach method, explaining, "I thought that the fax blasts were kind of innovative and we did end up getting a couple of folks from that. People that then went to our website and clicked on more information."

The third strategy HH4M used to meet its recruitment goals was to relax the geographic criteria that they had initially planned to use. Originally, the HH4M cooperative had wanted to focus primarily on small and rural practices, but as recruitment challenges continued, they expanded to include more-urban practices in Southeast Michigan that cared for underserved communities. Ultimately, HH4M was able to recruit 54 practices. One respondent explained that they were still able to keep the intervention focused on small practices, explaining that about 75% of the recruited practices had between two and five clinicians, and about 10% had a single clinician. Additionally, 90% of practices identified as being either in a health professional shortage area or rural area.

Heart Healthy Ohio Initiative (HHOI)
To recruit practices into the QI intervention, the HHOI used a three-pronged approach, sequencing recruitment from mass outreach strategies to personal engagement.

First, HHOI staff conducted mass outreach using each cooperative member's personal and professional networks (which largely built off relationships and contacts developed through participation in Cardi-OH) to distribute online messaging (via website and social media) and a one-page information sheet to potential respondents. Following mass outreach, the HHOI turned to a regional follow-up strategy, working with three regional health improvement collaborative partners to inform and engage their membership around the opportunity via email, newsletter, and other targeted outreach. Finally, the HHOI leveraged existing personal and professional relationships to conduct direct outreach to specific practices of interest that had yet to respond to other outreach efforts.

 Respondents mentioned their success in using a multipronged, sequenced recruitment strategy, because it allowed practices to learn more about the project from diverse sources and across multiple points in time. This worked in the HHOI's favor because it ensured that practices had the time, space, and resources available to learn about the QI intervention, seek additional information as needed, and determine their level of interest without feeling pressured to decide about participating.

 Respondents also cited the benefits of existing relationships to recruiting practices. They expressed that having someone with an existing relationship to practice members provided greater access and better insight on the status of practice needs, interest, and capacity. It also allowed practices to discuss the opportunity with a trusted individual.

Partners thought the distribution of the one-page information sheet was less effective, as it did not give enough information for practices to make an informed decision, and failed to generate strong levels of interest or follow-up.

Tennessee Heart Health Network (THHN)
The THHN relied primarily on Dr. Bailey's and Qsource's networks to recruit practices.

Dr. Bailey recruited through his own professional network and was successful in recruiting academic institutions that provide medical training, such as ETSU. Respondents overwhelmingly described how useful and vast Dr. Bailey's contacts were, and how he actively conducted personal outreach to medical centers and health systems with whom he had previously worked.

As the THHN Regional Extension Center, Qsource has touched and worked with nearly every practice in Tennessee, and has seasoned PFs with 10 to 20 years of experience working with the practices across the THHN to implement QI projects. The Qsource PFs and staff used existing networks to reach out to practices and share information about the QI project, including requesting that staff in practices where they have worked closely pass along information to other practices.

The Qsource PFs focused practice recruitment geographically across the three major regions of Tennessee—east, central, and west. Two PFs mentioned prioritizing recruitment for smaller practices that have less support to implement QI projects, including in rural areas where both practices and patients need resources and support. One PF noted that the text messaging intervention may be particularly effective for TennCare Medicaid patients. In Tennessee, TennCare patients receive iPhones with minutes as part of treatment and care, and would thus be able to receive text messages to potentially engage in that intervention.

Because the THHN's approach includes a learning collaborative, one PF also mentioned how helpful and useful it was to engage practices with experienced and established QI teams. These experienced QI teams could help provide peer mentoring and support through the learning collaboratives while also working on their continued QI goals with the help of experienced PFs.

The THHN did provide an incentive of around $6,500 for participating practices. While the PFs and other respondents we interviewed thought the incentive helped to "sweeten the deal," the incentive alone was not enough to ensure engagement and overcome challenges that some practices reported.

3.2.2   Strategies for Retaining Practices

While the previous section described recruitment strategies, this section describes the grantee's strategies for retaining practices. Across all four grantees, respondents described retaining nearly all of their recruited practices. The ACC lost one practice, both the HHOI and HH4M lost two practices, and the THHN lost four practices. Most practices withdrew from the QI project after they had already been recruited but prior to implementing the QI interventions. Respondents described two main contributors to dropout. First, respondents said that most practices that left the intervention did so due to staffing and capacity challenges related to the COVID-19 pandemic. Second, three practices from one health system dropped out because they had been randomized to the last wave in a stepped-wedge design and did not want to wait for over a year to receive the intervention. The THHN originally required that all practices share identifiable data to be part of the QI intervention. Most practices felt comfortable complying with this requirement, but the THHN did have to work with some practices, including ETSU (described below) to arrive at an agreement on how to proceed on this issue.

While relatively few practices have left the intervention across grantees, respondents described five main strategies for continuing to retain practices. Some of these strategies were common across multiple grantees, while others were unique to individual grantee projects.

Cooperative's Commitment to and Investment in Retention
Respondents from both the ACC and the THHN felt that the time and effort they invested in recruiting and retaining practices to participate in their QI interventions led to high retention rates. Respondents felt that this approach leads to high practice retention because the practice has also invested significant time and effort to participate in the recruitment phase, so by the time they enroll, there is already a high level of commitment to the process.

The ACC's recruitment process (further described in section 3.2.1) was labor-intensive. It included inviting interested practices to a kickoff meeting, having these practices complete a readiness assessment, and finally having the ACC members vote on which practices to include in the QI intervention. This early investment both assessed the readiness of the practice (see section 3.3.3) and increased practices' buy-in by requiring a high degree of early investment.

THHN respondents noted that one key to retention was Dr. Bailey's willingness to engage with practices to obtain their commitment to see the project through. One example of this was when ETSU was considering withdrawing from the QI intervention because of data-sharing concerns. To prove to ETSU how committed the THHN and the University of Tennessee Health Science Center were to build a relationship, Dr. Bailey flew to ETSU with the UTHSC provost and other project staff to lead a series of meetings where he described the goals of both the THHN and the broader population health consortium, and worked to build areas of commonality. In the end, ETSU decided to remain in the QI project and was willing to share deidentified data with the THHN.

Strength of PFs' Reputation and Role
Respondents from both the ACC and the HHOI pointed to strong relationships between the PFs and the practices as a key factor in retention. Respondents from both cooperatives described how the PFs' relationship-building skills, site engagement, and support meet the needs of practices and strengthen the PF/practice relationship. One ACC respondent mentioned that having a PF who was from the community or at least familiar with the community eased the relationship development process and helped to retain the practice. Among practices participating in the HHOI QI project, respondents noted that practices hold PFs in high esteem because of the breadth of their knowledge and experience, as well as their ability to develop and maintain strong relationships with practices.

Demonstrating Proof of Impact
 Respondents from both HH4M and the HHOI explained that a key retention strategy was being able to prove to practices that the QI intervention strategies were working. One interview respondent from the HH4M explained that since the QI intervention work began, clinicians have seen proof of impact through improvements in EHR data and patient interactions. Participants from engaged practices are improving patient health outcomes, streamlining practice workflows, and reducing staff burden, which demonstrates that the project is impactful to participating practices. In Ohio, the data dashboards provide site-specific updates to help practices monitor implementation and outcomes. Respondents noted use of this tool as a strong retention strategy because it helped practices identify and address barriers in a timely manner and provided insights on progress made toward improved outcomes. Positive outcomes and evidence of progress encouraged practices from both grantee sites to continue with the intervention.

Clinician-Centric Approach and QI Intervention Adaptability
HH4M and the ACC and THHN all described maintaining a clinician-centric and adaptable approach to implementing their QI interventions as a strategy to engage and retain practices. In both the ACC and the THHN, the PF leads used a clinician-driven approach to identify educational priorities and develop

learning materials. In Michigan, this took the form of allowing practices to have more flexibility in opting out of some of the QI interventions and choosing the order in which they implement their selected QI interventions. This strategy allowed practices to customize the implementation of the QI interventions, and provided the practices with a sense of agency. This strategy also allows practices to ebb and flow implementation with changes in capacity and local needs.

Project Incentives

Finally, the last retention strategy we heard about from respondents was the use of incentives: monetary incentives, continuing education credits, and badges. The ACC and THHN used monetary incentives when practices joined the QI project, which the THHN distributed in two payments to encourage ongoing involvement. Respondents from the THHN noted that they wanted to prioritize a timely distribution of the initial stipends to show practices that they will keep their word and are invested in practice support. HHOI also used a project incentive, which was based on data submission; in the first year, practices received $4,000 for submitting the required data, and $1,000 for each subsequent year (see section 3.3.2). Respondents from the HHOI explained that some practices were able to use these funds to purchase and borrow necessary equipment (e.g., home blood pressure monitors) for patients that they would not otherwise have had the resources to obtain. Similarly, HH4M provided a one-time $1,000 incentive for time spent submitting data to support ongoing engagement in the QI intervention (see section 3.3.2). As mentioned earlier, most respondents explained that these incentives were nice to have for practices, but likely not what is going to be the deciding factor for whether they participate, or stay, in the QI project.

The HHOI and HH4M are also offering Performance Improvement Continuing Medical Education (PI CME) credits and MOC credits. No respondents spoke to ongoing education as an important recruitment or retention strategy. Future data collection, particularly with respondents in the practices, should explore whether education credit was an important draw.

HH4M took another approach to incentives by providing participating practices with badges of participation (lapel pins with the HH4M QI project logo and plaques) that provide clinicians with tangible reminders that they are accomplishing significant positive changes and improvements for their patients and their practices by participating in the QI intervention. The hope is that once the grant ends and the PFs are no longer there, these badges will serve as a reminder of the workflow changes and QI interventions that practices have learned, and encourage them to continue implementing them.

In the next round of data collection, we will follow up with each of the grantees to gain a better understanding of how well these retention strategies worked, whether there are strategies that have been more or less effective, and whether they have implemented any new or innovative strategies to retain practices in their QI intervention. We will also follow up with grantees to see whether they have encountered retention challenges that had yet to emerge during this round of data collection. We will specifically follow up with respondents from the THHN intervention team who mentioned that practices might be less satisfied with the QI project because some of the intervention toolkits were not complete and ready to implement on time (i.e., the text messaging intervention). Respondents were concerned that poor perceptions of project organization and leadership might influence engagement, although no one reported evidence to suggest that was currently the case with participating practices.

3.2.3   Reasons for Not Participating

As in last year's report, all four grantees reported that the main reason practices declined to partcipate was lack of time and capacity, because of staffing shortages and competing priorities. Many practices were already overwhelmed with their current workload. Staff shortages continued to challenge practices, and were exacerbated by the COVID-19 pandemic. Practices also reported significant staffing turnover, which made it a challenge to provide care to patients. No grantees reported any other challenges or reasons for not participating.

The Michigan evaluation team conducted a survey with individuals working in practices that had declined to participate in any of the four ENow: BSC projects.[12] Thirty-one survey respondents said that staff turnover, staff shortages, and time constraints that had all been exacerbated by the COVID-19 pandemic had an impact on participation. Respondents also cited challenges with the EHR, lack of a financial incentive, and confidence in their current quality of care as other reasons to decline to participate. Respondents suggested that tying participation with value-based programs and providing greater compensation might facilitate recruitment. The manuscript is currently under review.

3.3. QI Support Strategies

Each grantee's ultimate goal is to improve the heart health of patients in their state. The grantees are partnering with local practices to implement **evidence-based interventions or clinical innovations** that are shown to improve heart health, such as accurately measuring blood pressure.

Evidence-based interventions are not just adopted on their own. Someone who is learning how to accurately measure blood pressure may receive an educational pamphlet about best practices or engage in an in-person training to learn proper technique. These **QI support strategies** are the "methods or techniques used by practice change support agents to motivate, guide and support practices in adopting, implementing and sustaining evidence-based changes and QIs."[13] QI support strategies can also be thought of as implementation strategies.[14]

3.3.1 Categories of QI Support or Implementation Strategies

Exhibit 3 describes the types of QI support strategies used by the EvidenceNOW: Building State Capacity grantees.

Exhibit 3. Categories of QI Support Strategies Used Among EN: BSC Grantees

Strategy Type	Description	AL	MI	OH	THHN
Practice facilitation	PFs engage with primary care practices in longitudinal, trusted relationships to build the practice's capacity to implement the best clinical evidence. PFs also help connect practices with the other QI supports they need. PFs work with "practice champions" within the practice, who champion the QI intervention. • Practice assessment • Assess and redesign workflows • Standardized care processes	X	X	X	X
Health IT support	Supports practices in using their EHRs for QI. Aid primary care practices to help them minimize the burdens of data entry and maximize their ability to generate reports that can be used for quality improvement and population health. • Use Health IT experts or PFs who have HIT expertise	X	X	X	X

[12] McHugh, M.C et. al. "Declining Participation in Primary Care Quality Improvement Research: A Qualitative Study." Publication currently under review.

[13] Solberg, L. I., Kuzel, A., Parchman, M. L., Shelley, D. R., Dickinson, W. P., Walunas, T. L.,... & Nagykaldi, Z. (2021). A taxonomy for external support for practice transformation. *The Journal of the American Board of Family Medicine*, *34*(1), 32-39.

[14] Perry, C. K., Damschroder, L. J., Hemler, J. R., Woodson, T. T., Ono, S. S., & Cohen, D. J. (2019). Specifying and comparing implementation strategies across seven large implementation interventions: a practical application of theory. *Implementation Science*, *14*(1), 1-13.

Strategy Type	Description	AL	MI	OH	THHN
Data, feedback and benchmarking	Gives practices and teams info on key process and outcome indicators, which are tracked over time to assess improvement. Data can come from within the practice—from its registries, EHRs, or chart audits—or from external sources (e.g., HIEs, claims data, or hospital utilization data). • Dashboards or practice improvement reports • Benchmarking against other practices and against other individualized goals	X		X	X
Education and training	Identifies and develops QI materials that are informative and interesting, delivered in acceptable formats, and use appropriate learning pedagogies. • Websites, webinars, training, CMEs, conferences, e-learning	X		X	
Shared learning	Facilitates opportunities that are acceptable and appropriate to practices for the sharing of strategies, challenges, and lessons learned. • Learning collaboratives, communities of practice			X	X
Incentives	Uses incentives to support engagement in QI activities, such as financial incentives for completing project tasks (e.g., sharing data), or continuing education (CE) credits to encourage participation in educational activities. (Note: two grantees also provided financial incentives as sign-on bonuses, which are not included here as they do not support ongoing QI activities beyond recruitment.)		X	X	

3.3.2   Interventions and QI Support Strategies by Grantee

In this section we describe the interventions each grantee selected—both the evidence-based clinical interventions (e.g., how to appropriately measure blood pressure) and the QI support (or implementation) strategies. We describe the QI support strategies, as well as the relationship among them (e.g., PFs as providers of health IT support). NOTE: We will send these draft descriptions to each grantee to verify the accuracy of the information about their interventions and QI support strategies.

ACC

The ACC used a key driver diagram that included evidence-based practices, and supported practices with practice facilitation, health IT support, shared learning/education and training, data feedback and benchmarking, and incentives. Exhibit 4 includes the ACC's Key Driver Diagram, describing the change concepts (left column), evidence-based activities (middle column) and clinical outcomes the intervention is designed to improve (right column). Exhibit 5 includes an overview of the ACC's intervention and QI support strategies. They created a workgroup within their cooperative that is charged with identifying evidence-based educational materials and QI support strategies. One respondent noted that it was imperative that the intervention be adaptable for the unique social and organizational contexts of each practice.
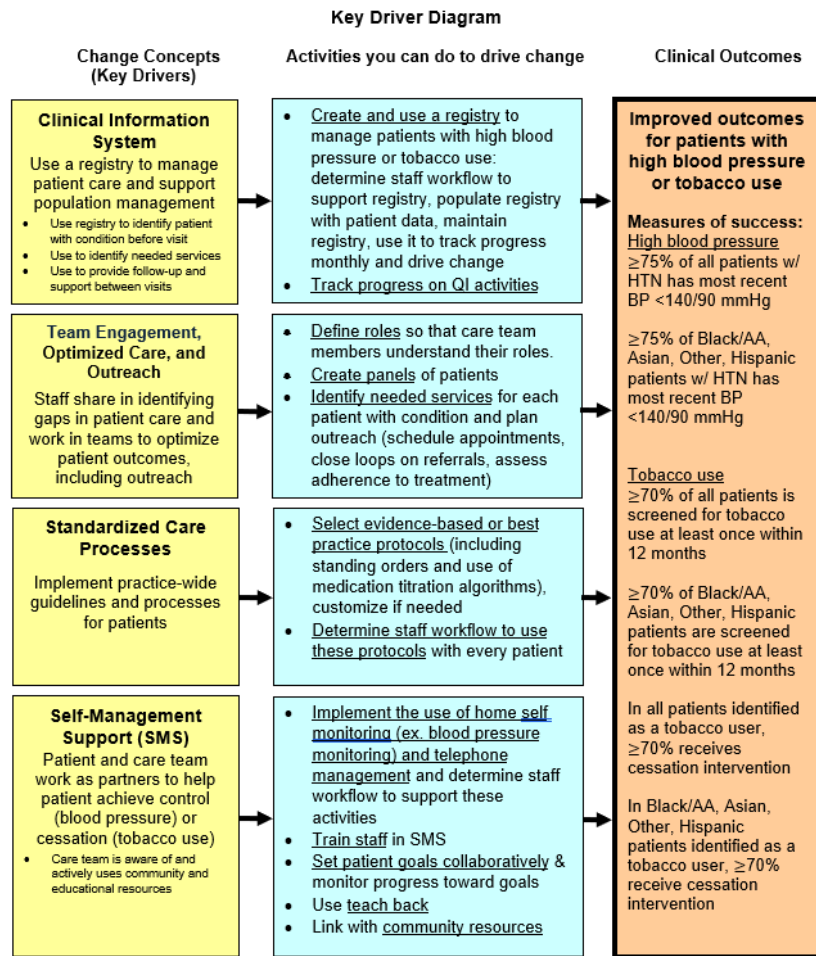
Exhibit 4. The ACC's Key Driver Diagram

Key Driver Diagram

Change Concepts (Key Drivers)	Activities you can do to drive change	Clinical Outcomes
Clinical Information System — Use a registry to manage patient care and support population management • Use registry to identify patient with condition before visit • Use to identify needed services • Use to provide follow-up and support between visits	• Create and use a registry to manage patients with high blood pressure or tobacco use: determine staff workflow to support registry, populate registry with patient data, maintain registry, use it to track progress monthly and drive change • Track progress on QI activities	**Improved outcomes for patients with high blood pressure or tobacco use** Measures of success: High blood pressure ≥75% of all patients w/ HTN has most recent BP <140/90 mmHg ≥75% of Black/AA, Asian, Other, Hispanic patients w/ HTN has most recent BP <140/90 mmHg Tobacco use ≥70% of all patients is screened for tobacco use at least once within 12 months ≥70% of Black/AA, Asian, Other, Hispanic patients are screened for tobacco use at least once within 12 months In all patients identified as a tobacco user, ≥70% receives cessation intervention In Black/AA, Asian, Other, Hispanic patients identified as a tobacco user, ≥70% receive cessation intervention
Team Engagement, Optimized Care, and Outreach — Staff share in identifying gaps in patient care and work in teams to optimize patient outcomes, including outreach	• Define roles so that care team members understand their roles. • Create panels of patients • Identify needed services for each patient with condition and plan outreach (schedule appointments, close loops on referrals, assess adherence to treatment)	
Standardized Care Processes — Implement practice-wide guidelines and processes for patients	• Select evidence-based or best practice protocols (including standing orders and use of medication titration algorithms), customize if needed • Determine staff workflow to use these protocols with every patient	
Self-Management Support (SMS) — Patient and care team work as partners to help patient achieve control (blood pressure) or cessation (tobacco use) • Care team is aware of and actively uses community and educational resources	• Implement the use of home self monitoring (ex. blood pressure monitoring) and telephone management and determine staff workflow to support these activities • Train staff in SMS • Set patient goals collaboratively & monitor progress toward goals • Use teach back • Link with community resources	

Exhibit 5. Overview of ACC Intervention and QI Support Strategies

ACC Intervention Overview		
Intervention length	•	12 months
Evidence-based interventions	• • • • • • • • • • • •	Create and use a registry. Track progress on QI activities. Define care team roles. Create panels of patients. Identify needed services for patients. Select evidence-based practice protocols. Create and establish team workflows. Implement home-self monitoring and telephone management. Train staff in self-management support (SMS). Set patient goals collaboratively. Use teach-back methods. Link patients with community resources.
QI support strategies		
Practice facilitation	• • •	Monthly in-person visits (at least one in person each quarter) over the course of 12 months Follow-up phone calls/emails between meetings to check on progress (three/month) Assess for readiness and identify barriers and facilitators
Data, feedback and benchmarking	•	ACC to contract data experts (pending) to assist with creating dashboards.
Health IT support	•	PFs provide monthly and ad-hoc data support for manual EHR pulls.
Education and Training	• •	ACC work group identifies and develops educational materials during monthly meetings. PFs distribute educational materials and conduct educational meetings during monthly site visits and as requested by practices.

Evidence-based interventions

The ACC planned that each practice would select one QI activity per quarter, for a total of four in a year. PFs provide a menu of evidence-based interventions, including smoking cessation, blood pressure self-monitoring, and improving staff workflow to manage new activities. While improving workflows is considered an implementation strategy in the field of implementation science, the ACC included it as part of their menu of evidence-based interventions. The ACC used findings from a needs assessment conducted at recruitment to compile a list of evidence-based interventions that aligned with the priorities of recruited practices. The practice, with the assistance of the PF, would then select an intervention from that list to implement. The PFs noted that not all of the QI activities require three months to implement, so in those cases the PFs adapted by incrementally offering additional activities.

QI Support/Implementation Strategies

ACC respondents described the four QI support strategies they used: practice facilitation, data feedback and benchmarking, health IT support, and education and training.

Practice Facilitation

To implement the evidence-based intervention(s), the ACC leaned heavily on **practice facilitation** through their trained and experienced PFs. The PFs serve as the intermediaries between the practices and the ACC and their relationship is critical to maintaining momentum of the project. The ACC began by training the PFs to establish a common understanding of the role and expectations and aims of the project.

During the first session with practices, the PFs discuss the work of the cooperative and what they can expect as part of their engagement in the QI project. During the next meeting they look at what available data the practices have, identify any trends in the data, and set practice performance goals for the QI strategy based on the data. At this meeting, or perhaps a later meeting, the PF may also assist the practice with establishing goals for improving data quality related to the QI strategy. The PFs attempt to implement one QI activity every quarter, although how long an activity takes can vary.

The ACC provided PFs with a Practice Facilitation Protocol that outlined suggested meeting schedules, with contact and data collection goals broken down by week. The recommended minimum number of contacts was one in-person visit and two phone/video/email contacts per month, although the protocol specified that PFs should use their discretion to schedule meetings or contacts that best supported the practice to achieve their goals. The schedule for each month is similar to the following:

- **Week 1:** During an in-person meeting, PFs complete data assessments and assist the practice with a plan, do, study, act (PDSA) cycle.

- **Week 2:** During a phone contact, the PF follows up on the PDSA cycle and assists with troubleshooting or advancing the QI strategy if appropriate. They also follow up on questions and resource requests received from the practice since the last meeting.

- **Week 3 (optional):** Through an email contact, the PF follows up on a PDSA cycle, troubleshoots or advances a QI strategy, and follows up on questions and resources.

- **Week 4:** During a phone contact, the PF repeats the follow-ups from Weeks 2 and 3 and reminds the practice champion of the upcoming in-person visit as the cycle restarts the next month.

The ACC asked PFs to document each visit within 24 hours using a Time Tracker log (date, time, contact method, attendees, key driver addressed, notes) and a Facilitation Activities log (type of key driver addressed, PDSA, practice members involved in the activity, focus on blood pressure and/or tobacco use, status of activity, date initiated, date completed).

Besides their meetings with practices, the PFs attend weekly, one-on-one meetings with the PF group leader to summarize PF activities, report successes, troubleshoot challenges, and strategize next steps. They also have biweekly meetings with all PFs to receive continuous training and share lessons learned.

Education and Training

The ACC created a workgroup as part of their cooperative structure whose function was to **identify educational tools** that would be appropriate and accessible for patients, the public, and clinicians. The workgroup sought materials that adhered to health communication best practices and that included simple messages, at accessible reading levels (no higher than 6th grade level) and avoided using technical jargon. They also worked to develop **dynamic trainings** by identifying materials with interesting and informative content in a variety of formats, such as patient engagement strategies and tools and resources to complement patient care.

The ACC took a phased approach to **developing and distributing educational materials** with the practices in the heart health QI project to build rapport and develop a process with the practices. The first phase was to distribute educational materials related to common tasks, such as providing a poster with instructions on properly taking blood pressure to be displayed in common staff areas (Exhibit 6). They also developed an 11-minute video demonstrating the proper technique. The ACC received positive responses to both materials. Respondents recalled that some clinicians initially expressed concern that the materials might be unnecessary or too basic, but later described the materials as valuable in reminding staff of proper techniques for skills they might have been taught in the past.

Exhibit 6. Example Educational Resource Distributed through the ACC

Following this first phase of distributing educational materials related to common tasks, the ACC **conducted educational meetings** with practices on a specific practice innovation that the ACC called "patient engagement huddles." These huddles are short, stand-up meetings held at the beginning of a shift in which members of the care team share anticipated patient and staff support needs for the shift. Huddles promote shared accountability and open communication, and have been linked to improved patient safety. The content targeted all relevant members of the practice, including physicians, nursing staff, and office managers, and focused on building a common understanding of how patient engagement huddles function and their importance in patient care. Practices responded positively to the educational meetings focused on patient engagement huddles, and many practices requested additional resources on how to build huddles into their practice.

As described in previous sections of this report, the ACC intends to create a website that will **centralize education materials** that will be accessible to anyone, as well as **organize a clinician implementation meeting space** by hosting a password-protected discussion board for physicians to promote connection and peer-to-peer learning. The workgroup is charged with identifying the most effective format for connecting people.

Data Feedback and Benchmarking

The ACC planned to create quarterly dashboards and have PFs develop monthly informal data reports, but the quarterly dashboards have not been feasible to create. Practices have reported significant challenges using their EHR to report eCQM data to feed to the ACC dashboards, including that some of the practices' EHRs are not certified or do not have reporting capabilities. The ACC developed a manual chart abstraction plan for practices using these EHR vendors, to enable the practice to pull baseline data manually. However, manual chart abstraction takes additional time and staff. Some clinicians are six months into implementation and have not seen their baseline data. The respondents said they expected data to be a challenge, but the reality of the challenge has exceeded what they expected. The ACC looked into hiring consultants to help manage data, but were unable to find a suitable consultant. The ACC

continues to look into opportunities to complete this activity, as they believe it is vital to their project implementation.

Health IT Support

Because of the significant challenges with data capture and reporting (see Data Feedback and Benchmarking section above), the ACC has attempted to overcome some data challenges by using the PFs to provide customized and local support to practices in exploring the EHR for data capabilities. PFs work with practices to identify how to access data from EHRs and transform data to make it meaningful for practices to plan and evaluate QI activities.

HHOI

The HHOI project was unique in that they used a co-design process to design and implement the intervention. Respondents reported that the co-design process mostly affirmed HHOI's initial plans to focus on blood pressure monitoring and smoking cessation, although additional resources and support related to care team communication and collaboration were developed. However, some respondents voiced disappointment that because of COVID-19 and other time constraints, the co-design process was not implemented as fully as intended, which resulted in limited opportunities for the co-design process to elicit additional suggestions for implementation.

An overview of HHOI's intervention and QI support strategies is displayed in Exhibit 7, and HHOI's key driver diagram is displayed in Exhibit 8.

Exhibit 7. Overview of Ohio Intervention and QI Support Strategies

HHOI Intervention Overview		
Intervention length	●	12 months
Evidence-based interventions	●	Accurate assessment and measurement: Good blood pressure measurement technique; smoking assessment at each visit; assess medication taking
	●	Appropriate and Timely Treatment: Medication management; timely follow-up; lifestyle monitoring; smoking cessation support; medication adherence strategies
	●	Effective outreach: Standardize processes; multiple modalities
	●	Effective communication: empathy, non-verbal strategies, cultural humility, health literacy, implicit bias; motivational interviewing
	●	Healthy equitable environment of care: identifying and addressing social determinants of health
	●	Effective supportive relationships: team based care
	●	Screened and well-managed behavioral health: screening and addressing depression and substance use
QI support strategies		
● **Practice facilitation**	●	PFs meet virtually with practices on a monthly basis.
	●	Review data dashboard and site progress toward established goals.
	●	Provide targeted technical assistance to address implementation challenges.
● **Health IT support**	●	1:1 health IT support is available to sites to ensure accuracy and completeness in reporting.
	●	Coding and specific tools for use with EPIC EHR systems are available to aid data aggregation methods and reporting.
● **Shared learning/ education and training**	●	Conduct quarterly learning webinars to foster cross-site collaboration.
● **Data feedback and benchmarking**	●	Intervention sites work with PF and their staff to set data benchmarks and progress goals at project outset.
	●	Use digital dashboard to visually convey data as part of monitoring and individual site assessment of progress.

HHOI Intervention Overview		
• **Incentive**	•	Financial incentive for completing data collection activities ($4,000 in Year 1; $1,000 in Year 2)
	•	MOC and/or CEU/CME credits available

Exhibit 8. HHOI's Key Driver Diagram

Evidence-Based Interventions

The HHOI has identified several "key drivers" that will lead to improvements in clinical outcomes, including clinical information systems (registries to manage care); team engagement, optimized care, and outreach (team-based care); standardized care processes (evidence-based practice implementation and workflow changes); and self-management support (supporting patients in their efforts to achieve blood pressure control or tobacco cessation) (Exhibit 8).

QI Support/Implementation Strategies

HHOI respondents described positive experiences implementing the QI intervention to date. Respondents noted that practice engagement remains high, and practices are demonstrating early successes in integrating evidence-based approaches to blood pressure control and smoking cessation assessment. The cooperative has employed a variety of strategies to support implementation of the QI intervention across practices, with the most cited strategies including practice facilitation and coaching, provision of health IT support, opportunities for shared learning, and a focus on data feedback and benchmarking. The HHOI is unique among the grantees in that their practice facilitation is primarily virtual; the PFs are not conducting in-person visits unless specifically requested.

Practice Facilitation and Coaching

PFs meet virtually with their practices at least monthly to provide targeted technical assistance and implementation support as related to the QI interventions. During these sessions, PF staff review practice progress toward identified goals and objectives, explore current implementation challenges and offer best practice solutions, and provide practices with numerous implementation resources (i.e., toolkits, workflows, process maps, podcasts) to support practice improvement. Respondents highlighted that these activities currently take place virtually, with PF staff and practice teams meeting via teleconference to conduct implementation activities.

Health IT Support

In addition to the provision of timely and actionable data feedback to practices via the data dashboard, the HHOI offers one-on-one health IT support to participating practices to ensure the accuracy and completeness of data provided. The HHOI PFs refers practices in need of Health IT support to staff with expertise in EHRs and data dashboards. The support from the Health IT experts is available to all practices as needed. These engagements have helped both the cooperative and practices identify and resolve common data-pull challenges and improve the existing analysis code. The HHOI also provides coding and specific tools for sites using Epic® to assist with data aggregation and reporting, as this EHR system is most familiar to the data team. Epic is used by many but not all participating practices.

Shared Learning/Education and Training

To support practice engagement and cross-site collaboration, the HHOI hosts a quarterly learning webinar. These webinars offer participants the opportunity to share their site-specific experiences, successes, and challenges with one another in a collaborative, solution-focused environment. Respondents reported that they felt that these webinars been successful in supporting practices in identifying new solutions and best practices and in fostering an environment of support among participating practice champions by providing a space that recognizes that all practices experience barriers to implementation.

Data Feedback and Benchmarking

The HHOI places great value on its capacity to share back high-quality, actionable data with practice sites to inform their next steps and implementation activities. Respondents referenced goal setting and data benchmarking as a strategy that solicits practices' increased engagement with and attention to daily implementation activities and data reporting. With the help of the PFs, teams at the practices work to establish and monitor progress toward site-specific aims.

Incentives

To promote participation in the QI intervention, the HHOI offers multiple incentives to participating sites and related clinicians. At the site level, the HHOI offers financial incentives to help offset practices' staffing and resource costs. Sites receive an initial sum of $4,000 at project outset and an additional $1,000 in Year 2. In addition, participating clinicians are eligible for CME and/or MOC credit if interested.

HH4M

With practice recruitment completed shortly before the interviews were scheduled, respondents from the HH4M cooperative described their initial intervention activities. In describing their QI strategies, the HH4M cooperative emphasized the importance of PFs developing strong relationships with their practices. They also pointed to the necessity of taking a clinician-centric approach to the interventions by allowing practices to choose which interventions to implement and when. Below, Exhibit 9 includes an overview of HH4M's intervention and QI support strategies.

Exhibit 9. Overview of Michigan Intervention and QI Support Strategies

HH4M Intervention Overview		
Intervention length	•	12 months
Evidence-based interventions	•	Accurate blood pressure measurement
	•	Hypertension management (hips)
	•	Self-measured blood pressure
	•	Tobacco smoking cessation (state quit line)
QI support strategies		
• **Practice facilitation**	•	In-person or virtual practice facilitation one or two times per month, for approximately one hour, over the course of 12 months

HH4M Intervention Overview		
• Health IT support	•	PFs provide support with EHR systems
• Incentives	• •	Financial incentive for time spent completing data collection activities ($1,000) PI CME credits and MOC Part IV credits

Evidence-Based Interventions

The HH4M cooperative's QI intervention is focused on creating automatic workflows and patient referrals around four evidence-based interventions that have been shown to improve patients' heart health outcomes. These interventions include: Accurate blood pressure measurement, HIPS, tobacco smoking cessation (state quit line), and Self Measured Blood Pressure (SMBP). Practices are encouraged to implement all four interventions, but they have to participate in at least two of them in order to participate in the QI intervention.

As part of the QI intervention launch and the first meeting, the practices work with the PFs to set priorities on which interventions are most important to them. HH4M PFs have been intentional about meeting practices where they are by letting the practices decide which interventions they would like to start with based on their current strengths and capacity. HH4M respondents noted that through this response, most practices have decided to start with the accurate blood pressure measurement intervention because it is seen as "low hanging fruit" and is easier to integrate into the practices' pre-existing workflows.

HH4M also planned to use the state Quitline to support the smoking cessation intervention and planned it to be an early "win" in most settings. The information online indicates that the services are open to all people from Michigan, and the referral process can be integrated into local EHRs. However, after looking into it, they found that the offered services varied for individuals with different insurance coverage (e.g., Medicaid) or populations (e.g., American Indian, individuals with cancer, Veterans). Additionally, they planned to link their participating practices' EHRs to the eReferral system, but were unable to in the end, but instead had to use a manual referral process. HH4M is working with the state to try to develop an electronic referral process and open the Quitline's more robust or 'higher touch' services (e.g., proactive counseling, free nicotine replacement treatment) to all Michigan residents regardless of insurance status, which will take more time to develop.

HH4M respondents noted that the perceived strength of the evidence-based interventions being implemented in the clinics was bolstered by the fact that the AHA considers them to be best practices. Respondents also noted that participating practices felt like the interventions are "common sense" activities that they could easily implement. In addition to having AHA support, these interventions could be tracked using existing QI metrics to show impact on outcomes. These factors made it easier for the HH4M cooperative to convince practices that the suggested QI interventions are worth adopting and will ultimately have a positive impact on their patients.

QI Support/Implementation Strategies

HH4M respondents pointed to three main QI support strategies that they are using to help practices integrate the QI interventions into their workflows: practice facilitation, health IT support, and data feedback and benchmarking.

Practice Facilitation

The HH4M cooperative developed their QI intervention to be highly practice-facilitation focused. In an effort to standardize practice facilitation, the HH4M cooperative developed an eight-part PF training

based on AHRQ's PF materials, to provide the PFs with a refresher on the various techniques and relevant information for effective practice facilitation.

Once the PFs had completed the training, the PF project manager assigned them to participating practices, where they provide in-person or virtual support around the QI interventions for approximately one hour, one or two times per month, over 12 months. PFs were assigned to practices within their region so that they could minimize the distance they would need to travel.

One PF noted that her work at the practices served two main purposes. The first is to provide the practice clinicians and their staff with resources, education, and support around implementing the QI interventions. She explained that the PFs carry out this work in three main ways:

- Sharing resources like the QI intervention toolkits and flyers the HH4M cooperative has developed

- Showing practitioners and their staff how to use existing tools built into their EHR systems

- Helping practices build new tools or more-structured, automatic workflows if these do not exist, to help them identify and follow up with patients who have diagnoses related to the QI intervention

The respondent noted that the second, more informal purpose of the PFs' work is to help practices understand what quality improvement is and how to effectively carry out a QI process, which the respondent described as overlapping, but separate skills.

Health IT Support

Respondents noted that the HH4M PFs help their assigned practices to navigate and use the various functionalities of their EHR systems, like Epic and Athena. PFs said that they help show practices how to download quality reports and build capacity related to EHR management and data tracking. The PFs have significant experience managing different EHR systems with varying capabilities, and work with practices to build their local capacity. One PF noted that by having access to her practices' EHR systems, she is able to pull quality reports for them, and that saves the practice time. PFs also help to troubleshoot any EHR issues with the EHR vendor. For example, one respondent noted that she was working with a practice that didn't conduct regular quality reporting. The PF attempted to pull the baseline data but found that the EHR's data dashboard was not working. The PF submitted a ticket to the EHR vendor and found that the vendor had closed down the quality dashboard and related functionalities during an update because the practice had not been using the quality reporting function. In troubleshooting with the vendor, the PF and practice staff were able to get the quality reporting tools reinstated and work with the practice staff to build capacity in using the data dashboard.

Incentives

The final QI strategy that the HH4M cooperative is using with practices is providing two different types of incentives. HH4M offered practices up to $1,000 reimbursement for time spent on required data collection activities. In addition to monetary incentives, HH4M also outlined the opportunities for practices to receive PI CME credits and MOC Part IV credits.

THHN

The THHN is unique in that they developed three specific evidence-based toolkits. They asked practices to choose at least one (and up to three) to implement, with the support of a PF. The THHN also has a robust series of learning collaboratives to provide education and support. Through the TN-POPNet, they provide data feedback and benchmarking data to practices that share data (see Exhibit 10).

Exhibit 10. Overview of THHN Intervention and QI Support Strategies

THHN Intervention Overview		
Intervention length	•	12 months

THHN Intervention Overview			
Evidence-based interventions	•		Health coaching
	•		Pharmacist-physician collaboration
	•		Heart health messaging
QI support strategies			
•	**Practice facilitation**	•	Using the Agile Implementation Framework
		•	Monthly in-person visits (at least one in-person visit each quarter)
		•	Review data dashboard
		•	Identify barriers and facilitators to EBP implementation
•	**Shared learning**	•	Two to four topic-based learning collaborative sessions per month
		•	Experts speak on topics suggested by participants
•	**Data feedback and benchmarking**	•	Using the TN-POPNet to support data analytics and benchmarking
		•	Provides data dashboards comparing own with network's practices data
•	**Health IT support**	•	The PFs review data (from TN-POPNet or own EHR) during monthly meetings with practice.

Evidence-Based Interventions

The THHN has developed three evidence-based toolkits that their practices are implementing. During the introductory meeting, the PFs introduce each evidence-based toolkit and describe the goals and expectations for each. After each practice has been engaged in the QI project for around a month, the PFs ask the practice which evidence-based practices they plan to implement. Practices must select one, but can implement all three. The toolkits are all publicly available on their website. The three toolkits are as follows:

- Health Coaching trains new or existing staff in motivational interviewing to support patients in improved management of heart-related chronic conditions. Each practice is allowed to send up to two staff to the motivational interviewing training.

- The Pharmacist-Physician Collaboration supports the development of pharmacist-physician partnerships to engage patients by using motivational interviewing to improve management of heart-related chronic conditions.

- Heart Health Messaging provides automated, evidence-based text messages to patients to give ongoing guidance and facilitate care. This intervention was significantly delayed by contracting challenges, including high levels of university bureaucracy inhibiting the timely signature of contracts and the contract underperforming what was promised. As of the end of the data collection period December 2022), the text messaging intervention had still not been launched.

QI Support/Implementation Strategies

THHN respondents pointed to four QI support strategies they used: practice facilitation, health IT support, shared learning, and data feedback and benchmarking.

Practice Facilitation

The PFs meet with each practice at least monthly, with a mix of in-person and virtual meetings. The PFs try to meet with both a clinician champion and an administrative lead, such as a QI person or practice manager. During the monthly meetings, the PFs review progress since the last meeting and check in about the implementation of the evidence-based practice toolkit(s) to determine what if any issues are arising and discuss potential solutions. PFs will follow up with email communication or calls to answer questions and provide support, and encourage participation in the learning collaborative sessions.

Because of challenges with data collection to support the evaluation and ongoing measure tracking, the THHN PFs spent some months of the intervention following up and supporting data collection. THHN leadership was concerned that practices' interest might wane without a focused effort to reinvest in the value proposition of partnering with practices to work and improve heart health. As of this fall, the THHN shifted to having the PFs focus on QI implementation, including implementing a "quick sprint" to identify an easy win and implement it to ensure practices feel they are getting the intervention that was promised.

Health IT Support

As part of their roll the PFs work with practices to review their data dashboards and EHR to make data-driven decisions related to their QI project. During the monthly meetings, the PFs look at the data dashboard or (if practices were unwilling to share their data) EHR tools to examine changes in QI metrics.

Shared Learning

The THHN's learning collaborative model has shifted from its initial inception. Originally the THHN planned to assign each practice to a learning collaborative in its region. They intended to provide the same content to each learning collaborative, and provide an opportunity for local peer-to-peer learning. However, after the first few months of implementation, the THHN recognized that the learning collaboratives were not well attended and were not meeting the needs of the practices engaged in the QI intervention. They opted to change the model, having multiple learning collaborative sessions per month on different topics, and asking that practices attend at least one session. They have sought to make the learning collaboratives dynamic, with interesting speakers and subject matter experts to speak to emergent or important topics for the practice leads. These adaptations resulted in increased participation and engagement by practices.

Data Feedback and Benchmarking

As part of the TN-POPNet, the THHN feeds data reports back to practices. However, this requires the sharing of data, which has been an ongoing challenge. Respondents described significant challenges with signing DUAs to share EHR data. Some practices, including ETSU, threatened to leave the intervention if identifiable data sharing was required, which they argued raised ethical concerns because of the absence of patient approval. The THHN and TN-POPNet have shown flexibility in providing data reports and feedback, including collecting aggregated data from practices to feed into report templates, or capturing deidentified data. The data team from the TN-POPNet feeds data dashboards to the practices, which includes the practice's measures compared to those of other practices in the network. The PFs review the dashboard during each monthly meeting with the practices, help to read and interpret the reports, and develop plans to improve metrics.

3.3.3   Barriers and Facilitators to QI Project Implementation

In this section, we describe central barriers and facilitators to implementation of the QI projects in local practices. In this section, we began by coding the qualitative data using the CFIR (2009) constructs to conduct an early exploration of determinants of implementation success. We then synthesized the findings organized by barriers and facilitators, highlighting relevant examples from grantees. Note: In this report we are relying primarily on documents and interview transcripts from cooperative staff and partners, and not people working in the practices. Future data collection with respondents who work in practices where the QI interventions were implemented will likely illuminate more related to this domain.

Barriers
Delays in Project Components

All grantees reported delays, including with implementing key components of their intervention. While the THHN was able to quickly recruit and launch their QI project, they struggled with delays to the text

messaging toolkit and intervention. The delays stemmed from challenges completing a DUA and contractual agreements with a text messaging vendor, as well as additional challenges with the quality of the vendor's work. Respondents worried that the significant delays impacted the perception of the professionalism of the project. The practices that selected the text messaging intervention continue to work with the PFs to set goals and review data and attend learning collaborative sessions, but have not been able to make progress on their primary goal. The HHOI and ACC both reported delays with data reporting systems. The HHOI reported delays in receiving practice information to be able to feed back reports. The ACC had significant challenges capturing data to be able to support data feedback activities.

Data Sharing Challenges
The cooperatives designed different approaches to supporting practices in capturing and reviewing their QI metrics, which have been impacted by data sharing challenges. The THHN planned for all practices to submit their QI metrics to the TN-POPNet, where the data team would then feed back dashboards with the individual practice's data and the network benchmark. However, not all practices were willing to share data with the TN-POPNet. The ACC originally intended to take an approach similar to the THHN, where they would report data through a central system to each practice. However, because of extensive EHR challenges outlined in section 3.1.1, the practices engaged in the ACC QI intervention have largely been unable to extract their data. The ACC PFs are attempting to work with practices to use existing EHR data reporting capabilities, but have found challenges given the number of different EHRs used.

Patient Buy-In and Perceived Need for the Intervention
The grantees developed plans to overcome barriers related to patient buy-in and perceived need for the intervention. In two of its evidence-based toolkits, the THHN is using motivational interviewing training to help clinicians and clinical staff learn techniques designed to motivate change. HH4M PFs identified challenges related to patients' use of tobacco as part of Native American rites and rituals, and the difficulty of being sensitive to this aspect of the patients' culture while at the same time wanting to incorporate commercial tobacco cessation as a component of Indian Health Service practices' QI projects. One PF did not believe there would be high uptake of the tobacco cessation interventions in the Indian Health Service clinics they worked with, because people would not be ready to stop using tobacco given its profound meaning within their culture.

Evaluation Activities Interfering with QI Project Activities
All four grantees have described challenges related to the evaluation component of the study. HH4M and the ACC both had considerable challenges with recruitment, which threatened and ultimately impacted the type of research design for their project. Three practices from one health system in the THHN dropped out of the project because they were randomized in the final wave and had waited a year for the intervention. Project staff from all grantees have spoken to the burden of the evaluation activities on the practices. While cooperative staff recognized the importance of evaluation as a component of this project, they voiced concerns about it negatively impacting practice engagement or involvement because of repeated requests.

Practices' Competing Demands
Beginning in the recruitment process, respondents explained the degree to which competing demands within the local practices would limit engagement. The COVID-19 public health emergency response resulted in changing healthcare priorities, high levels of staff turnover, and lower capacity to engage in QI projects. Respondents continue to report practice-level turnover impacting QI project implementation.

Facilitators
Adaptable and Easy-to-Implement Interventions
Respondents spoke to the broad adaptability of some selected QI support strategies, in particular the practice facilitation and shared learning strategies. The grantees highlighted adaptability in two ways: both intentionally creating an intervention that is adaptable, and adapting the intervention because of needed mid-course corrections. A number of grantees developed an intervention that was adaptable to

local needs. In Michigan, practices can select both the specific intervention and the order of implementation, to adapt to local needs and capacity. In the THHN, practices were allowed to select which intervention from the toolkits they were interested in implementing. But some adaptations occurred because of emergent challenges. In the THHN the cooperative modified the structure of the learning collaboratives from wave-based to topic-based, allowing practices to attend sessions that were most relevant and not based on their intervention wave. This adaptation fostered greater peer-to-peer learning and conversation, as some respondents noted.

Respondents described the need to reduce perceived complexity and cost (including to the practice, both financially and in terms of staff time) while recruiting practices, and continuing through the intervention, making it relatively low-touch and supportive. Respondents from across grantees recognized the time and staffing constraints of all practices. Thus, grantees intentionally made the interventions efficient, with a low level of work required of the practice to reduce the barriers to practice engagement and increase the likelihood of successful implementation of the QI activities. In the ACC, the PFs intentionally engage throughout the month using phone calls and emails to reduce burden but maintain support. In Ohio and Michigan, the grantees increased the perceived value of the project by providing MOC and CME credits. Respondents from several grantees also spoke about the impact that the evaluation tasks had on project implementation, including that the high burden of the evaluation on practices reduced the time and available resources to fully engage in the QI work. In the THHN, respondents reported that PFs had focused on explaining delays in toolkit implementation and requirements to complete evaluation requirements with practices, at the expense of focusing on other important practice facilitation work. One respondent explained,

> So you come in, you've got a finite period of time with a practice lead to say, hey, let's talk. And their questions are, "When am I getting paid?" "Where are my toolkits?" "I've got questions about data feeds?" So that's half your time. The other half is 'Don't forget we need some surveys.'"

As a result, the THHN recently shifted the PFs to wholly focus on QI, and reassigned evaluation activities to other members of the team. The HHOI and HH4M aimed to offset the costs of providing data as part of the project by providing incentives for those activities explicitly.

Experienced PFs
The PFs are highly experienced and collaborative, and have extensive experience working with many of the practices as part of other QI initiatives in the past 10 years or more. The PFs are able to use their experience and background to help practices implement these interventions, and across all four grantees have built systems where PFs share experiences and challenges and can get input from other PFs. The ACC and HH4M conducted explicit PF training to increase fidelity to the project design and ensure all the PFs had the same skills and knowledge as the intervention began. In the ACC, the lead PF met weekly with each PF, and all PFs met together twice a month to problem solve, share lessons, and strategize.

Shared Learning Opportunities
The THHN and HHOI created shared learning opportunities through learning collaboratives and webinars. As one respondent stated, "It's really helpful for practices to know somebody else has experienced what they are experiencing. So, they know that A, they're not alone, but B, somebody else has figured this out, and we can use it over here for us." Both grantees also showed how these shared learning opportunities were adapted to the needs of the practices. To increase practice interest and engagement in the learning collaboratives, the THHN adapted to change the structure to offer different topics each month to increase practice participation. The HHOI leads webinars quarterly to provide practices an opportunity to share best practices for implementation and sustainability.

Engaging Patients in the Design and Project Planning
The HHOI engaged in a co-design process that involved patients as a way to plan for the project to be responsive to patient's needs, although some respondents noted that results from the co-design process were not universally adopted. The ACC included a needs assessment as part of recruitment that identified emergent and important topics for practices and their patients. The THHN incorporated patient advisory councils to engage patients and receive feedback on tools and resources under development.

Aligning With Other Financial Incentives
In value propositions and recruitment conversations, grantees spoke to the importance of aligning their projects with other financial incentives, in particular building capacity related to billing for services and payment models. When a PF respondent from the THHN was asked whether there were other factors in the state that might have impacted engagement and recruitment, the PF said that being a Comprehensive Primary Care Plus (CPC+) state might have helped. The PF speculated that, "Because even though there aren't a lot of practices that are doing [CPC+], I think the practices are more aware of it and are considering participation, so I think that that helped." In Ohio, one respondent explained that the PFs working on the HHOI had previously supported these practices with CPC+, which resulted in stronger existing relationships and knowledge of and experience with cooperative leadership.

Importance of Improving Heart Health
Across all grantees, respondents spoke to the importance of addressing heart health. HH4M and the ACC, HHOI, and THHN were initially selected in part because of the high prevalence of preventable cardiovascular disease, which each grantee wrote of wanting to address in the areas of greatest need in their state. Beginning with the initial recruitment and through to implementation, the grantees highlighted the importance of improving heart health to engage practices. Respondents said that a reason practices joined was because of the importance of this topic, and that even when practices declined to participate they did so out of lack of capacity to engage at this time.

Increasing the Readiness for Implementation
Prior to the start of the intervention, grantees worked with practices to increase their readiness for implementation. The ACC's recruitment process (further described in section 3.2.1) was extremely time- and labor-intensive. This investment helped to build a practice's readiness to implement the QI intervention, including through engaging appropriate leaders and assessing available resources. Respondents felt that by the time a practice enrolled, they were already invested in the work and strongly committed to participating in the QI intervention. Other grantees assessed readiness informally as part of recruitment and ongoing engagement with PFs.

Engagement of Key Staff
While many respondents described challenges with practice engagement, respondents described how if the right staff were engaged, in particular, strong administrative staff (i.e., practice managers) or QI support staff, the intervention was more likely to be successful. Similarly, getting buy-in from clinical leadership and engaging clinical leaders as part of the implementation team could provide opportunities to gain additional resources and formal project endorsement.

4.   What We Have Learned

In the second round of data collection, we learned more about how the cooperatives are evolving and changing in their second year, strategies for practice recruitment and retention, and how grantees are implementing their QI intervention and providing QI support. We outline several lessons learned below.

- **Capitalizing on existing relationships is critical to the formation of a cooperative.** During the second year of implementation, cooperatives are continuing to evolve. Grantees largely formed their cooperatives by partnering with organizations with whom they had prior relationships. For example, all of the cooperatives, with the exception of Alabama, had existing relationships with key organizations (UTHSC and Qsource; HHOI had engaged a subset of partners for CardiOH; Altarum had worked with Northwestern previously, as well as the other QI organizations in rural Michigan). Drawing upon existing relationships appear to be efficient and reduce time to establish trust for Cooperatives.

- **Grantees identified the importance of payer partners for future sustainability, and grantee leads should also have better addressed sustainability at the beginning of the project**. While most key partners were engaged within the first year, some ongoing outreach to new partners occurred in Year 2. Grantees identified the importance of payer partners for future sustainability. The THHN and ACC had engaged payer partners in Year 1, the HHOI was able to connect and engage payer partners in Year 2, and HH4M was still seeking to engage payer partners in future years. Grantees made limited progress toward engaging other new (non-payer) partners.

- **The cooperative models may have advantages and disadvantages toward different aims and may also have insights for other states building cooperatives and supporting a state's primary care capacity.** At the end of Year 2, the advantages and disadvantages of different cooperative models, as well as the potential impact of key contextual factors for each state, are not much clearer than they were for Year 1. By the final year, we plan to offer insights on the advantages and disadvantages of an academic-led Cooperative versus a quality improvement organization-led model for recruitment and future sustainability of the cooperative or networks. For example, THHN has incorporated its cooperative and network as part of a broader population health consortium that has greater buy-in and support, engaging different funding sources to improve population health broadly. Alternatively, HHOI engaged a subset of partners from CardiOH because of funding constraints, creating two similar and overlapping interventions in the same state. The degree to which both interventions will be sustained is an important question for future data collection. The last year of data collection will allow more opportunities to provide insights for other states and regions that wish to build a cooperative, as well as for AHRQ to consider the grant mechanisms, recommended model components, and partners.

- **Building a network of practices may be more realistic after there is something specific to offer, after supporting an initial set of practices, or if more time was provided for this work.** AHRQ had envisioned grantees building their networks first, and then enlisting practices for the QI project. However, grantees (largely due to challenges recruiting) prioritized enlisting practices for the QI project. As we identified in the previous report, network building was not a central focus of the first year of implementation and while it was more of a focus, it was still limited in Year 2. Grantees described developing websites and listservs to disseminate educational materials and opportunities to networks, although the ACC reported ongoing challenges with building and launching their website. Most the grantees equate their websites and listservs with their "network" at this point. Further, grantees reported confusion by practices when they were invited to participate in both the network and the QI project. Enlisting practices to participate in the QI project <u>first</u> might be advantageous compared to enlisting practices to a network without offering them anything specific or before something is ready to be offered to them, especially given the limited bandwidth of practices. Future

data collection will explore how cooperatives are expanding their networks, or truly enlisting practices into a network to support other future QI initiatives.

- **Given the unrelenting challenges for primary care, future initiatives should be realistic about feasibility in terms of the number of practices, characteristics of practices engaged and expectations.** Recruitment into the QI project was challenging for all grantees, although some struggled more than others. The most common reasons for declining to participate in the QI project were staffing issues and concerns about capacity. In the end, the ACC and HH4M had to loosen their selection criteria to reach their recruitment goals. Thus, it may be important when planning QI initiatives for primary care to be realistic about the feasible number of practices to enlist as well as their characteristics, as grantees' experiences and past initiatives lay bare the unrelenting challenges recruiting primary care practices given their limited capacity, staff turnover, burnout and other factors which worsened with the COVID-19 pandemic.

- **With the evolving nature and characteristics of primary care practices (i.e., more practices integrating with health systems), understanding which practices need QI support, what type of support and why may be key for future large QI initiatives.** Practices that are more networked or integrated (i.e., part of a health system) can be recruited quickly or at least offer multiple practices more quickly. While networked practices may benefit recruitment efforts, they may pose downstream challenges with contamination for an evaluation. Networked practices may have an ability to pull their QI measures centrally for all practices, for example, but that may result in fewer local staff within an individual practice having the experience to pull or examine their own EHR data in support of their QI effort. Additionally, within a QI effort a smaller practice may actually be more nimble at implementing a new workflow or idea more readily, than in a larger practice Networked practices may or may not have higher practice capacity than individual practices, which we will examine once we have baseline practice data. If networked practices have higher baseline QI capacity, they may not see as much of an increase in QI capacity. All of this may have implications for the field and AHRQ in considering which practices needs QI support, what type of support and why or is there a capacity level at which practices no longer need support to implement evidence-based care.

- **When working with practices, QI implementers and researchers will need to consider the potential tradeoffs between randomization and retention challenges in stepped wedge design projects, which may be worsened when enlisting multiple health system-affiliated practices and randomizing by health systems**. The grantees had retained nearly all of the practices they had recruited. The primary challenges for practice retention overlapped with recruitment challenges described above. THHN reported additional retention challenges because of their waved study design. Some practices had been randomized to the last wave and dropped out because they did not want to wait a year for the QI support. This was more problematic because THHN opted to randomize all practices within a single health system together in a wave to reduce potential bias within the health system (such as if the same administrative QI lead would be implementing the work in all practices). This resulted in the loss of multiple practices within the same health system because of the wait to receive the intervention in the final wave. When working with practices, QI implementers and researchers will need to consider the potential tradeoffs between randomization and retention challenges in stepped wedge design projects, which may be worsened when enlisting multiple health system affiliated practices and randomizing by health systems.

- **In this resource constrained primary care environment, interventions that make participation demands minimal may need to be the priority. It will be important to examine, to the extent possible, if the modality of PF support and/or the 'dose' affects the clinical outcomes or capacity of practices.** While all grantees are using practice facilitation for their QI support, they varied in the amount of contact and support, as well as the mode (virtual versus in-person). Additionally, there are some differences in the roles PFs are playing and how they are supporting practices (e.g., providing the health IT support). It will be important to examine, to the extent possible, if the modality of PF

support and or the 'dose' effect the clinical outcomes or capacity of practices. The COVID-19 pandemic may have accelerated the shift to different modes of support such as virtual facilitation. In this resource constrained primary care environment, interventions that make participation demands minimal maybe need to be the priority. However, there may be other key factors that are more qualitatively assessed that may have as great of an impact on the outcomes (e.g., relationship of PF with practice, trust, experience).

- **While aiming to make an intervention low-touch and supportive, the intended impact on clinical outcomes may be diminished**. Grantees in EvidenceNOW: Building State Capacity thoughtfully considered the QI project's design, and aimed to make the intervention low-touch and supportive. Respondents from across grantees recognized the time and staffing constraints of all practices. Thus, they made the interventions efficient, with a low level of work required of the practice, in the hope of reducing barriers to practice engagement, and ultimate success. For example, in the ACC, the PFs intentionally engage throughout the month using phone calls and emails, to reduce burden but maintain support. A potential concern with low-touch and responsive interventions is that without some effort and intention, the intervention may not have the intended impact on clinical outcomes. The question of practice facilitator 'dose' and implementation progress effect on achieved outcomes will be investigated in the next report.

- **Cooperatives and organizations involved in future QI initiatives should have contingency plans for obtaining QI data to provide to practices for feedback.** For data, feedback, and benchmarking, most grantees intended to provide the data to practices, versus teaching the practice staff how to pull their own data. The HH4M had always planned to teach practices which was consistent with their philosophy of supporting primary care. The ACC, in contrast, had no choice, after finding that a central data repository approach was not feasible. It remains to be determined whether one model or another of providing this QI support improves practices' capacity more than another. It is also unclear to what extent, if at all, grantee teams or PFs used alternative ways or less precise measures (e.g., chart reviews) to provide practices their data for feedback purposes. This could be a function of bandwidth or resources and time available for PFs to support practices. This may also be a challenge when providing support, wholly or in part, virtually (i.e., it may be more difficult for the PF to do or help with a chart review or examine the EHR reports). Understanding the extent to which PFs or grantee teams used alternative methods or workarounds to obtain data in support of their QI efforts will be examined in final year of data collection. Cooperatives and organizations involved in future QI initiatives should have contingency plans for obtaining QI data to provide to practices for feedback.

- **Leaders of QI initiatives should anticipate issues pulling QI measures in terms of time and resources, and train PFs in considering alternative, less precise ways of measurement (e.g., chart reviews).** As with EvidenceNOW: Advancing Heart Health, grantees and practices struggled to pull QI measures from practices' EHRs and from central repositories, which distracted significantly from the planned QI support and ability to share practice data as feedback to understand their current evidence-based practices, and identify where they could improve. The challenge of pulling QI measures from EHRs in support of QI is a well-documented challenge for primary care improvement initiatives that has not abated. Given these challenges, leaders of QI initiatives should plan for this likelihood in terms of time and resources, as well as train PFs in considering alternative, less precise ways of measurement (e.g., chart reviews).

- **AHRQ or other organizations that fund QI initiatives should extend the period of performance to allow time for data collection at the beginning and not at the expense of the QI support.** While the *EvidenceNOW: Building State Capacity* initiative reduced the evaluation data collection burden for grantees and practices compared to *EvidenceNOW: Advancing Heart Health*, the grantees still had issues with the time and resources involved in collecting data for the evaluation. Some grantees said that PFs spent too much time collecting data, versus supporting the practices. This may

beg the question of how and by whom data should be collected for these types of QI initiatives, or at what cost. This issue may also be addressed by expanding the time needed for interventions, to allow time for data collection at the beginning and not at the expense of the QI support.

- **Quality improvement should not be treated as a side effort in primary care, but rather as a key component of delivering evidence-based care.** Addressing the broader challenges that primary care providers and practices face—such as staffing challenges, burnout and barriers to pulling QI metrics or data from EHRs—may be a prerequisite for increasing the adoption and implementation of evidence from patient-centered outcomes research (PCOR) into practice. Additionally, AHRQ or other federal agencies and funders may need to acknowledge the importance of investing in the infrastructure of primary care and require grantees to address sustainability early on.

4.1. Next Steps

The final round of qualitative data collection will include interviews with grantee leadership, cooperative leads and partners, non-affiliated organizations, practices engaged in the QI project, and practices in the network who are not involved in the QI project. We plan for that data collection to be in the summer of 2023. We also plan to conduct two final member checking sessions in the final year to validate the findings, identify additional insights, and develop common and divergent themes across the grantees.

The final evaluation report will primarily focus on answering research questions RQ5, RQ7, RQ8, RQ9, and RQ10. Updates in our thinking related to the other research questions will also be included. Because of delays in QI project recruitment, most of the grantees are behind schedule. This delay impacts future evaluation activities, as final practice-level data will not be submitted until July 1, 2024, which is five months after our current contract's period of performance. It will require a contract extension to include the final practice-level data in the final evaluation report.

Exhibit 11. EvidenceNOW: Building State Capacity Research Questions

Research Questions
1. How successful were grantees at creating Cooperatives to deliver primary care QI support? What were the causes or explanations for successes and failures?
2. What are the organizational characteristics of the Cooperatives, and how do they differ? How did these differences affect outcomes? What is the level of satisfaction with the Cooperatives among the partners, other state and local organizations, network members, and QI practices?
3. To what extent and in what ways were the Cooperatives able to recruit practices into their networks?
4. To what extent and in what ways were the Cooperatives successful at engaging the practices in the networks and increasing their QI capacity to implement PCOR findings?
5. **What kinds of *strategies* did Cooperatives use to deliver QI support to practices participating in the heart health QI project?**
6. How did QI support used contribute to increasing the QI capacity of primary care practices to implement PCOR findings in general, and particularly the delivery of blood pressure control and smoking cessation?
7. **To what extent and in what ways were the Cooperatives successful at using new state-level capacity to launch other improvement projects/attract other funding?**
8. **Did the grants *catalyze other actions* and outcomes? Have there been other improvements to practice capacity or delivery of care?**
9. **What is the likely long-term *impact* of the grants? How did or can developing a state's overall capacity to support QI lead to sustainable gains in overall quality of primary care, improvement of heart health, and reduction in health disparities? Is the external, QI support infrastructure likely to be *sustainable*?**
10. **What *lessons were learned*? To what extent are these applicable to other settings (other states, types of practices, different primary care improvements)?**

Note: Bold text indicates which questions will be the primary focus of the final report.

Appendices

Appendix I. Codebook

Code	Definition
Cooperative	Factors at the cooperative level
• Leadership	The impact or role of leaders in the cooperative or in organizations within the cooperative
• Staffing	Factors related to staffing within the cooperative
• Recruitment	Factors related to recruiting into the cooperative (this is distinct from recruitment into the network)
• Cooperative Structure/Organization	The structure of the cooperative, including how meetings are run and how decisions are made and communicated
• Cooperative Culture [links to CFIR culture]	Information related to the members of the cooperatives, including previous and existing relationships within the cooperative, and the norms and mores of the cooperative
• Communication	Modes, styles, and means of communicating within the cooperative, and between the cooperative and practices
• Partners [links to CFIR Cosmopolitanism]	The degree to which an organization is networked with other external organizations
• Evolution and change	Changes and evolution within the process or organization of the cooperative
• Sustainability	Factors related to the sustainability of the cooperative
• Function	Factors related to the functioning of the cooperative
• Membership	Factors related to the membership of the cooperative (who is involved; what do they do)
• **Cooperative Barrier**	
o COVID-19	Barriers specific to COVID-19
o Organizational Agreements	Barriers specific to organizational agreements (memoranda of understanding, DUAs)
o IRB	Barriers specific to IRB issues
o Competing QI Projects or Priorities	Barriers specific to competing QI project or priorities
o Staff Turnover or Capacity	Barriers specific to staff capacity, turnover
o Data Collection	Barriers specific to data collection with network/practices
o Project Coordination	Barriers specific to coordinating the project
o Funding	Barriers specific to funding
o Delays	Barriers specific to project delays
o Engagement	Barriers specific to cooperative partner and member engagement
o Timing	Barriers specific to project timing and timelines
o Inexperience	Barriers specific to inexperience
o Duplication of Effort	Barriers specific to duplicating effort across the project
o Meetings	Barriers specific to cooperative meetings, meeting logistics
o Other	Other barriers
• **Cooperative Facilitators**	
o Existing Relationships	Facilitators related to existing relationships
o Experience with QI	Facilitators related to experience with QI
o Comfort Meeting Electronically	Facilitators related to comfort meeting electronically
o Learning from other grantees	Facilitators related to learning from other grantees

Code	Definition
o Existing infrastructure, HIE	Facilitators related to existing infrastructure/health information exchange
o Collaboration and Engagement	Facilitators related to collaboration and engagement in the cooperative
o Identified Goals and Objectives	Facilitators related to goals and objective
o Agility	Facilitators related to agility
o Clinical Knowledge	Facilitators related to clinical knowledge
Network of Statewide Practices	Factors at the network level
• Number of practices approached vs .recruited	Description of the number of practices approached or recruited
• Recruitment strategies	Strategies the network uses to recruit practices; whether practices are new to the cooperative or have collaborated in the past
o Role of existing relationships	Strategies using existing relationships
o Prioritizing efforts to address health disparities	Strategies to address health disparities
o Addressing geographic distribution	Recruitment strategies specific to addressing geographic distribution across state
o Tracking	Strategies to track recruitment
o Value proposition	Value propositions to recruit practices
o Outreach language	Language used in outreach to practices
• Retention strategies	Strategies the cooperative uses to retain practices in the network
• Health Disparities Addressed	Content related to recruiting/communicating/working with the practices that are part of the Heart Health QI intervention
• Communication among practices	Modes, styles, and means of communicating among practices; examples of relationships built among practices because of the network
• Non-intervention resources	Resources or support strategies offered to practices that are part of the network but not participating in the heart health intervention
• Reasons for not participating	Reasons practices decided to not participate
Practices	Factors at the practice level
• Leadership	Factors related to leadership at the practice level, including leadership engagement or support
• Previous QI effort	Factors related to previous experience with the practice implementing QI efforts
• IT infrastructure	Factors related to IT infrastructure and implementation of the QI initiative
• Staffing	Factors related to staffing at the practice and the QI implementation.
• Local regulations	Local guidelines or regulations related to the QI effort or implementation
• Sustainability	Factors related to the broader sustainability of the intervention within the practices
• Practice Barriers	
o COVID-19	Barriers related to COVID-19
o Organizational Agreements	Barriers related to Organizational Agreements (including memoranda of understanding, partnering)
o IRB	Barriers related to IRB
o Competing QI Projects	Barriers related to other, competing quality improvement projects
o Staff Turnover/Capacity	Barriers related to staffing, including turnover and capacity
o Data sharing	Barriers related to sharing data across the cooperative, or with practices
o Project coordination	Barriers related to project coordination
o Funding	Barriers related to funding

Code	Definition
o Delays	Barriers related to delays
o Politics	Barriers related to state or local politics
o Lack of Demand for QI work	Barriers related to lack of need/demand for QI work
o Other	Other barriers not specified above
• PFs	
o Existing relationships	Facilitators related to existing relationships
o Expertise/experience with QI/leading large studies/projects	Facilitators related to experience with QI, or leading large studies
o Comfort with meeting electronically	Facilitators related to meeting electronically
o Learning from other grantees/EvidenceNOW meetings	Facilitators related to learning from other grantees and the EvidenceNOW meetings
o Existing infrastructure	Facilitators related to existing infrastructure (i.e., health information)
o Collaboration/engagement	Facilitators related to collaboration and engagement
o Other	Other facilitators not specified above
o Incentives	Facilitators related to incentives
o Desire to improve heart health	Facilitators related to the desire to improve heart health
Implementation Strategies	Methods or techniques used to enhance the adoption, implementation, and sustainability of a clinical program or practice
• Onsite practice facilitation and coaching	Provide ongoing consultation with one or more experts (PFs) in the strategies used to support implementing the innovation
• Health Information Technology Support	Involve, hire, and/or consult experts to inform management on the use of health information data to support implementation efforts
• Shared Learning Collaboratives	Facilitate the formation of groups of providers or provider organizations and foster a collaborative learning environment to improve implementation of the clinical innovation
• Expert consultation	Provide ongoing consultation with one or more experts in the strategies used to support implementing the innovation
• Data feedback and benchmarking	Collect and summarize clinical performance data over a specified time period and give it to clinicians and administrators to monitor, evaluate, and modify provider behavior
• Conduct educational meetings/trainings	Hold meetings targeted toward different stakeholder groups (e.g., providers, administrators, other organizational stakeholders, and community, patient/consumer, and family stakeholders) to teach them about the clinical innovation
• Other	Other implementation strategies not listed above
Grant Components	Factors that are related to participating in the grant (e.g., technical assistance, evaluation leads, project officer meetings)
Select CFIR Constructs	
• Intervention Characteristics	Key attributes of the interventions that influence the success of the implementation
– Adaptability	The degree to which an intervention can be adapted, tailored, refined, or reinvented to meet local needs
– Trialability	The ability to test the intervention on a small scale in the organization, and to be able to reverse course (undo implementation) if warranted
– Complexity	Perceived difficulty of the intervention, reflected by duration, scope, radicalness, disruptiveness, centrality, and intricacy and number of steps required to implement
– Design quality and packaging	Perceived excellence in how the intervention is bundled, presented, and assembled

Code	Definition
− Costs	Costs of the intervention and costs associated with implementing the intervention including investment, supply, and opportunity costs
• Outer Setting	Attributes of the context outside of the primary implementation setting (practice) that influence success of implementation
− Patient needs and resources	The extent to which patient needs, as well as barriers and facilitators to meet those needs, are accurately known and prioritized by the organization
− Cosmopolitanism	[see partner code under cooperative]
− External Policies and Incentives	A broad construct that includes external strategies to spread interventions, including policy and regulations (governmental or other central entity), external mandates, recommendations and guidelines, pay-for-performance, collaboratives, and public or benchmark reporting
• Inner Setting	Attributes of the context inside the primary implementation setting (practice) that influence success of implementation
− Implementation climate	The absorptive capacity for change, shared receptivity of involved individuals to an intervention, and the extent to which use of that intervention will be rewarded, supported, and expected within their organization
o Relative priority	Individuals' shared perception of the importance of the implementation within the organization
− Readiness for Implementation	Tangible and immediate indicators of organizational commitment to its decision to implement an intervention
o Leadership Engagement	Commitment, involvement, and accountability of leaders and managers concerning the implementation
o Available Resources	The level of resources dedicated for implementation and ongoing operations, including money, training, education, physical space, and time
o Access to Knowledge and Information	Ease of access to digestible information and knowledge about the intervention and how to incorporate it into work tasks
• Characteristics of the individuals	Characteristics of the individuals involved in implementing the intervention
− Knowledge and beliefs about the intervention	Individuals' attitudes toward and value placed on the intervention as well as familiarity with facts, truths, and principles related to the intervention
− Individual Stage of Change	Characterization of the phase an individual is in, as he or she progresses toward skilled, enthusiastic, or sustained use of the intervention
• Process	The process of implementing the intervention, including planning, engaging, executing, and evaluating