Supplemental materials for:

Cohen DJ, Sweeney SM, Miller WL, et al. Improving smoking and blood pressure outcomes: interplay between operational changes and local context. *Ann Fam Med.* 2021;19(3):240-248.

Supplemental Appendix, Supplemental Tables, and Supplemental Figures

Supplemental Table 1. Quantitative Measures: Practice Characteristics and Practice Exposure to Facilitation and How These Measures Were Calibrated

Factor	Description	Conditions and Calibration*
Practice Characteristics		
Size	Number of clinicians in the practice	1 = Solo 2 = 2-5 clinicians 3 = 6-10 clinicians 4 = 11+ clinicians
Ownership	Type of ownership	1 = Clinician 2 = Hospital/Health System 3 = Federally Qualified Health Center (FQHC)/Rural Health Center (RHC)/Indian Health System (IHS)
Urbanicity	Rurality based on Rural-Urban Commuting Area (RUCA) designation	1 = Rural 2 = Large Town 3 = Suburban 4 = Urban
Turnover	Loss of clinician or office manager in the past year	1 = Present 0 = Absent
Cooperative	Identifier for EvidenceNOW grantee	1-7
Practice Exposure to Facilitation		
Duration	Cumulative number of hours of in-person facilitation	1 = < 5 2 = 5-9.9 3 = 10-24.9 4 = 25-49.9 5 = 50 or more
Months	Number of months with at least one in-person facilitation visit	1 = 1-3 2 = 4-6 3 = 7-9 4 = 10-12 5 = 13-14
Visits	Cumulative number of in-person facilitation visits	1 = 0-5 2 = 6-10 3 = 11-15 4 = 16-20 5 = 21-25 6 = 26-29

Supplemental Appendix

Practice Facilitator Interview Guide

1. **Would you please tell us about your background and experience working as a practice coach/facilitator?**
    - o What facilitator training did you have prior to [Cooperative EvidenceNOW (EN) project name]?
    - o How many practices did you work with on [Cooperative EN project name]?
        - ▪ Across how many waves/over what time frames?
    - o How many years of experience have you had as a facilitator or coach?
2. **Can you tell me a little bit of background about the particular practice we're talking about today?**
    - o How long have you worked with this particular practice?
        - ▪ Did you work with this practice prior to [Cooperative EN project name]?
    - o How experienced were they in terms of QI when they joined [Cooperative EN project name]?
    - o What is the practice's culture and leadership like?
    - o What is the level of burnout among practice members?
        - a. Was this a factor in their ability to work with you and make changes?
3. **What work did you do in this practice as part of** [Cooperative EN project name]?
    - o How did you approach this work?
    - o How did the practice react to the intervention and your suggestions?
    - o What changes did they ultimately make?
    - o How do you think these changes helped improve cardiovascular preventive care in this practice?
    - o How do you think these changes improved the practice overall?
4. **What did you work on specifically for….?**
    - o Aspirin?
    - o Blood pressure control?
    - o Smoking cessation screening and counseling?
    - o Cholesterol management?
    - o Did you work on ABCS together or one at a time? How were decisions made on what to work on?
5. **Could you walk me through *how* you worked with this practice? For example:**
    - o Who did you work with?
    - o How did they decide who would work with you?
        - ▪ Did you work with any others?
    - o Did they have a formal QI team or specific individuals with the responsibility for working with [Cooperative EN project name]?
        - ▪ Tell me about the types of meetings you had, what did you do in these meetings?
6. **How did you use data in the quality improvement process?**
    - o What was their ability to extract measures from their EHR and use them for QI?
    - o How did you get data for QI?
    - o What did the practice do with these data?
        - ▪ [If relevant] Were they able to use a dashboard?
        - ▪ What kind of feedback did you provide? How often?
7. **We have ABCS data for this practice at baseline and at another data point [state here.] How might you make sense of this data based on your work with the practice?**
8. **EvidenceNOW was both about improving ABCS and improving the practice's skills to make other quality improvements. In what ways do you feel that you helped this practice build its skillset beyond working on the ABCS?**
9. **What strengths did this practice bring to working with you?**
10. **What were the challenges this practice experienced during the change process?**
    - o How motivated was this practice to change?
    - o How responsive were they to your suggestions?

11. **We understand that [Cooperative EN project name] offered practice support beyond facilitation, including [state here] can you tell me if this practice participated in those other types of support?**
    - If so, what do you feel the practice may have gained from those other types of support based on your experience working with them?
12. **What else, in your opinion, is important to know about this practice in order to understand their experience with EvidenceNOW and what helped them accomplish the care changes they made?**

Practice Member Interview Guide

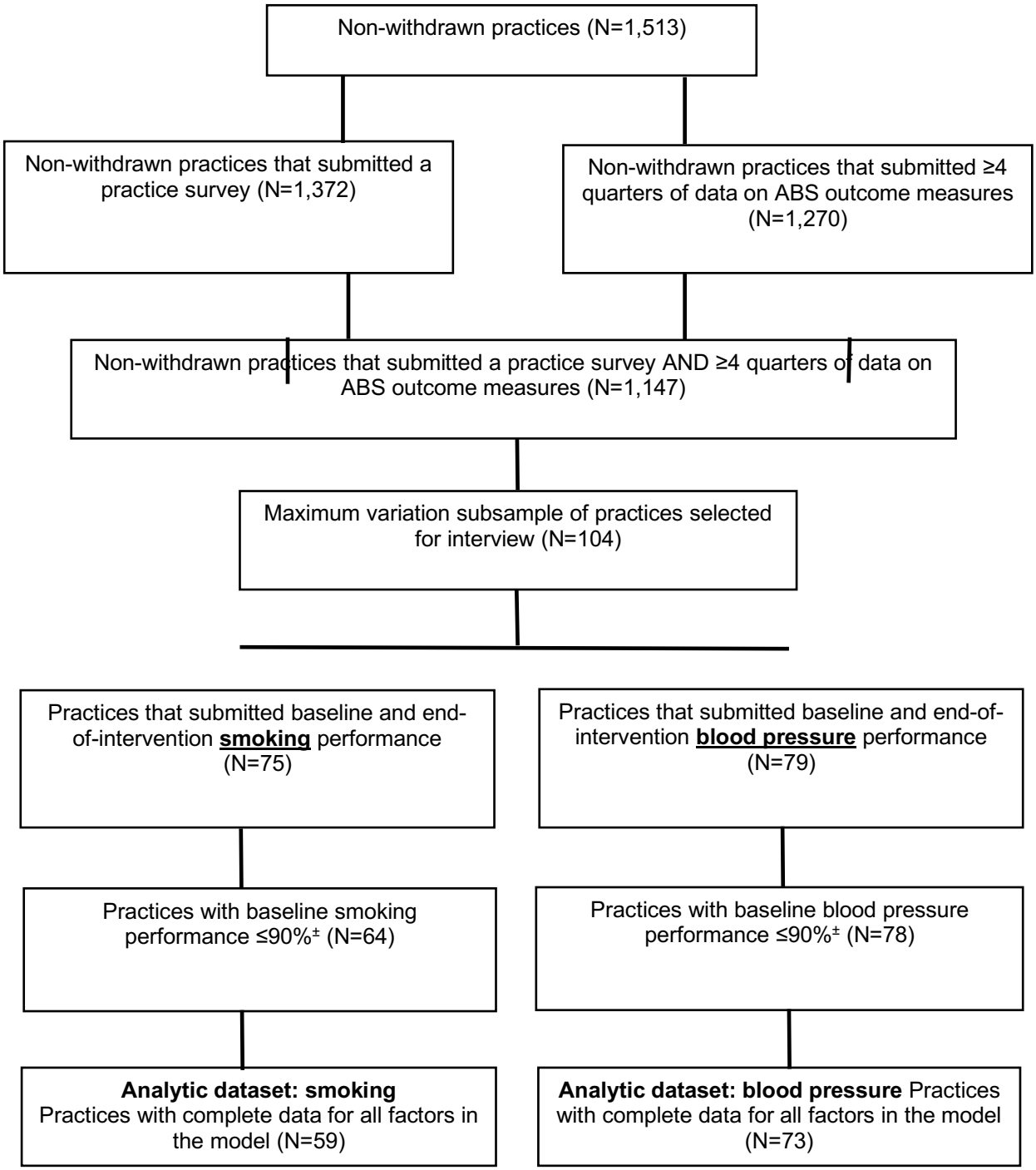
1. **Would you please tell us a little about yourself and [your/this] practice?**
    - What is your background? How long have you been at the practice?
    - What does your role entail?
    - How is your practice organized?
        - Who is on staff, what are their roles, etc.?
        - How would you describe your practice's *culture* – for instance, how people communicate and work together, work expectations, those sorts of things?
2. **What do you think is the most important thing that you do that makes a difference in patient's lives?**
3. **Outside of [Cooperative EN project name], what kinds of other quality improvement or practice redesign initiatives has [your/this] practice been involved in over the last couple of years, if any?**
    - Were you involved in other initiatives during EN project name? If so, which ones?
4. **Why did [your/this] practice agree to participate in [Cooperative EN project name]?**
    - Were there any external influences? For example, how/did local or national incentives influence you to join?
    - How familiar were you with other practices that had joined this initiative or similar ones?
5. **Tell us about your experience on [Cooperative EN project name]:**
    - What did you work on?
    - What changes did you implement? Specifically, for each A, B, C and S
    - What did you and other practice members think about the [Cooperative EN project name] intervention?
        - What was your relationship like with your practice facilitator?
        - What did you find most useful?
        - What strengths did your practice bring to this work?
        - What barriers, if any, did you encounter?
6. **What have been your experiences using data for measurement in the quality improvement process?**
    - What data did you use?
        - Was your practice about to generate reports?
        - Were you able to produce registries?
    - How did you use these data? How often?
7. **We have data that goes from the Cooperative to us at ESCALATES at the project baseline and at another data point [state here.] How might you make sense of this data based on your work on Cooperative EN project name/with your PF?**
    - What work/factors do you attribute to your scores?
8. **EvidenceNOW is about both improving ABCS and improving or building your practice's ability to take on other quality improvements. In what ways do you feel that [Cooperative EN project name] helped your practice build skills beyond working on the ABCS?**
9. **Can you tell us about any other experiences you had participating in [Cooperative EN project name]?**
    - What additional kinds of support did you or your team participate in or receive?
    - What did you/staff find the most helpful and why?
    - What barriers did you or staff experience in taking advantage this support?

10. **What have you continued to work on from [Cooperative EN project name]?**
    - What new QI have you worked on since the end of the intervention?
11. **Given that you thought that (x from beginning of interview) was the most important thing that you do that makes a difference in patient's lives, what do you think might help you improve in continuing to do that?**
    - Are there any tools or resources that would aid you in this continued improvement?
12. **What else, in your opinion, is important for us to know in order to understand your experience with EvidenceNOW?**

Supplemental Table 2. Transformed Qualitative data: Changes Reported as Implemented to Improve Smoking and Blood Pressure, and Their Calibration		
Changes Implemented to Improve Smoking Outcomes		**Calibration**
Documentation (DC)	Reported working to change documentation behavior after someone in practice learned they were not documenting correctly	1 = Present 0 = Absent
Process Improvements (PI)	Changed practice workflows including processes to ensure clinicians provide brief counseling, changing workflow to enable MAs to provide brief counseling/referral for patients	1 = Present 0 = Absent
Identify Referral Resources (RR)	Gave information about quitlines and other resources to patients	1 = Present 0 = Absent
Staff Education (SE)	Educated staff about importance of smoking cessation counseling	1 = Present 0 = Absent
Registry/Outreach	Created a list of patients not meeting smoking screening guidelines and then reached out by phone to schedule a visit	1 = Present 0 = Absent
Tracking Referrals	Tracked patient's referral and follow-through on a referral to a quitline or another smoking cessation resource	1 = Present 0 = Absent
Data Problems	Insufficient data quality to inform QI	1 = Present 0 = Absent
Changes Implemented to Improve BP Outcomes		**Calibration**
Measurement Training	Educated practice staff about how to take an accurate BP	0 = No training 1 = Training without evidence of follow-up 2 = Training with evidence of follow-up
Patient Education	Used new educational approach directed to patients about BP control	1 = New posters on walls 2 = Handouts only 3 = Hand-out plus plan to discuss at-home BP 4 = Staff education of patients
Registry and Outreach	Used list of patients with hypertension and reached out by phone to help them manage their hypertension	0 = Registry absent 1 = Registry without outreach 2 = Registry plus outreach 3 = Registry with regular outreach
Subsequent BP Check	Encouraged patients to take additional BP measurement at another time	1 = Tell patients to check BP at home 2 = Scheduled BP measurement visit for a fee 3 = Scheduled free BP measurement visit 4 = Encourage BP cuff purchase, offer to calibrate or provide free walk-in follow-up visit to check BP at practice 5 = BP cuff loaned to patients for at-home measurement
Take 2nd BP	Took second BP during the visit, if first was elevated	1 = Present 0 = Absent
Documentation	Practice developed method for documenting second or home BP as a discrete field in EHR	1 = Present 0 = Absent

Alert Doctor	Notifying doctor, at the point of care, that patient had elevated BP measurement during intake	1 = Present 0 = Absent
Auto Cuff	Change in BP measurement tool and how data were entered into the EHR	1 = Present 0 = Absent
*For each case, a factor takes on a specific value (ie, “condition”) such as “presence” or “absence.” To be included in the configurational analysis, text-based values are represented numerically; for example, in “Documentation” above, 1 = present and 0 = absent.		

Supplemental Figure 1. Flow of study practices included in configurational comparative methods analyses.



Note: ±Practices with performance >90% could not possibly achieve a 10-percentage-point gain and thus were excluded from the analysis.

Supplemental Table 3. Practice Sample Characteristics for Analyses of ≥5%-Point Gain		
	Practices in Smoking Analysis (N=67)	**Practices in BP Analysis (N=70)**
Practice Characteristics	**N (%)**	**N (%)**
Ownership		
Clinician owned	42 (62.7)	42 (60.0)
Hospital/Health System	14 (20.9)	15 (21.4)
FQHC	8 (11.9)	9 (12.9)
RHS/IHS	3 (4.5)	4 (5.7)
Practice Size		
Solo practice	22 (32.8)	22 (31.4)
2-5 clinicians	36 (53.7)	38 (54.3)
6-10 clinicians	6 (9.0)	7 (10.0)
11 or more clinicians	2 (3.0)	2 (2.9)
Missing	1 (1.5)	1 (1.4)
Geographic Region / Cooperative		
Midwest (IN, IL, WI)	14 (20.9)	15 (21.4)
North Carolina	8 (11.9)	6 (8.6)
Northwest (OR, WA, ID)	5 (7.5)	7 (10.0)
New York City (five NY boroughs)	15 (22.4)	15 (21.4)
Oklahoma	7 (10.4)	9 (12.9)
Southwest (CO, NM)	11 (16.4)	11 (15.7)
Virginia	7 (10.4)	7 (10.0)
Urbanicity		
Rural Area	5 (7.5)	8 (11.4)
Large Town	10 (14.9)	12 (17.1)
Suburban	5 (7.5)	6 (8.6)
Urban Core	47 (70.1)	44 (62.9)
Patient Characteristics	**Mean (SD)**	**Mean (SD)**
Percent White	62.34 (32.73)	58.66 (33.95)
Percent Medicaid	19.19 (16.79)	20.74 (17.18)
Performance on CQM metric (baseline)	**N (%)**	**N (%)**

< 50%	26 (38.8)	19 (27.1)
50-60%	2 (3.0)	15 (21.4)
60-70%	6 (9.0)	18 (25.7)
70-80%	14 (20.9)	14 (20.0)
80-90%	11 (16.4)	3 (4.3)
[1]Practices with >95% performance at baseline were not included in the ≥5-point smoking gain analysis because it was not logically possible for those practices to achieve a ≥5-point gain.		

Supplemental Figure 2. Visual depiction of pathways linked to ≥10-point improvement in smoking outcome

ID Transform	Process Improvement	Practice Ownership	Any Operational Practice Change	Facilitation Duration	Referral Resources	Referral Tracking	Facilitation Duration
A1	1	C	1	5	0	0	5
B1	1	C	1	4	1	0	4
B3	1	C	1	4	1	0	4
B2	1	C	1	4	1	0	4
G1	1	C	1	4	0	0	4
F1	1	C	1	3	1	0	3
E1	1	C	1	3	1	0	3
E2	1	C	1	3	1	0	3
C1	1	C	1	3	0	0	3
B4	1	C	1	3	0	0	3
F2	1	C	1	2	1	0	2
G2	1	C	1	2	1	0	2
F12	1	C	1	1	1	0	1
C8	1	FQHC/RHC/IHS	1	3	1	1	3
C7	1	FQHC/RHC/IHS	1	2	1	1	2
A9	0	C	1	5	1	0	5
B7	0	C	1	4	1	0	4
B5	0	C	1	4	1	0	4
A4	0	C	1	4	1	0	4
G3	0	C	1	4	0	0	4
B12	0	C	1	4	0	0	4
A3	0	C	1	4	0	0	4
A5	0	C	1	3	1	0	3
G4	0	C	1	3	1	0	3
C2	0	C	1	3	1	0	3
B13	0	C	0	4	0	0	4
A7	0	C	0	4	0	0	4
B14	0	FQHC/RHC/IHS	1	5	0	0	5
G7	0	FQHC/RHC/IHS	1	3	0	0	3
B8	1	C	1	5	1	0	5
C10	1	H/HS/HMO	1	3	1	1	3
C11	1	H/HS/HMO	1	3	1	1	3
G5	1	H/HS/HMO	1	3	0	0	3
C12	1	H/HS/HMO	1	2	1	0	2
E4	1	FQHC/RHC/HIS	1	3	1	1	3
B10	0	C	1	3	0	0	3
C3	0	C	1	2	1	0	2
F7	0	C	1	2	0	0	2
F5	0	C	1	2	0	0	2
F13	0	C	1	2	0	0	2
F4	0	C	1	2	0	0	2
F10	0	C	1	2	1	1	2
G10	0	C	1	1	1	0	1
B16	0	C	0	4	0	0	4
C5	0	C	0	3	0	0	3
B15	0	FQHC/RHC/IHS	1	5	0	0	5
B9	0	FQHC/RHC/IHS	1	5	1	0	5
A8	0	FQHC/RHC/IHS	1	4	1	0	4
F14	0	FQHC/RHC/IHS	1	1	1	0	1
B11	0	FQHC/RHC/IHS	0	5	0	0	5
F9	0	H/HS/HMO	1	2	0	0	2
F8	0	H/HS/HMO	1	2	1	0	2
D8	0	H/HS/HMO	1	1	0	0	1
D5	0	H/HS/HMO	1	1	1	0	1
E6	0	H/HS/HMO	0	3	0	0	3
F11	0	H/HS/HMO	0	2	0	0	2
G6	0	H/HS/HMO	0	2	0	0	2
D7	0	H/HS/HMO	0	2	0	0	2
D6	0	H/HS/HMO	0	1	0	0	1

C=Clinician; F=Federally Qualified Health Center; H=Hospital; HMO=health maintenance organization; HS=Health System; I=Indian Health Service; RHC=Rural Health Clinic

Notes: For Practice ID, each letter refers to a different Cooperative and each number to a different practice within that Cooperative. Cells highlighted with yellow indicate consistent cases (ie, practice was covered by ≥ 1 solution pathway and outcome was present). Cells highlighted with green indicate inconsistent cases (ie, practice was covered by ≥ 1 solution pathway but outcome was not present). Practices above the red dotted line had ≥ 10 point gain in outcome present; those below the dotted line did not. Solution pathways are demarcated from one another by gray columns. Process Improvement, Any Operational Practice Change, Referral Resource, and Referral Tracking: 1=Present and 0= Absent. Facilitation Duration: 1 ≤ 5 hours with a facilitator; 2=5-9.9 hours; 3=10-24.9 hours; 4=25-49.9 hours; and 5 ≥ 50 hours.

Supplemental Table 4. Pathways Linked to ≥5-Point Gain in Smoking Outcome				
Pathway	**Consistency**	**Raw Coverage**	**Unique Coverage**	**Cases included in pathway[1]**
Process Improvement=1 AND Ownership=Clinician	87% (13/15)	38% (13/34)	18% (6/34)	**A1,** B1, B2, B3, **B4**, **C1**, E1, E2, F1, **F2**, **F12,** G1, **G2**
Any operational practice change* AND Duration of facilitation=25-50 hours	100% (11/11)	32% (11/34)	21% (7/34)	**A3, A4, A8,** B1, B2**,** B3, **B5, B7, B12,** G1, **G3**
Identify Referral Resources=1 AND Referral Tracking=0 AND Duration of Facilitation=10-25 hours	100% (6/6)	18% (6/34)	9% (3/34)	**A5, C2,** E1**,** E2, F1, **G4**
OVERALL MODEL	92% (23/25)	68% (23/34)	N/A	

Analytic dataset for ≥5-point gain in smoking outcome had total of 67 cases; 3 cases were removed for having a baseline smoking rate of > 95% (i.e., not logically possible to achieve a 5-point gain) and an additional 5 cases were removed because they did not have complete data for all factors in the final model. Cases uniquely explained by one pathway are bolded; *Includes practices with at least one of three changes (documentation, process improvement, and/or referral to resource). Each letter refers to a different Cooperative and each number to a different practice within that Cooperative.
The overall model coverage for the ≥5-point model (68%) is lower than for the ≥10-point model (76%) because while there is one more case with the outcome explained in the ≥5-point model (n=23) than in the ≥10-point model (n=22), there are more 5 cases with the outcome present in the ≥5-point model (n=34) than in the ≥10-point model (n=29). This yields 68% coverage (23/34) for the ≥5-point model and 76% coverage (22/29) for the ≥10-point model.

Supplemental Figure 3. Visual depiction of pathways linked to ≥10-point improvement in BP outcome.

Practice ID	Take 2nd BP	Documentation	Practice Ownership	Take 2nd BP	Facilitation Duration	Measurement Training	Facilitation Duration	Measurement Training	Practice Size
G4	1	0	C	1	3	2	3	2	2-5 clinicians
G5	1	0	H/HS/HMO	1	3	2	3	2	2-5 clinicians
E2	1	1	C	1	3	2	3	2	2-5 clinicians
F7	0	0	C	0	2	2	2	2	2-5 clinicians
B8	1	1	C	1	5	1	5	1	Solo
A1	1	0	C	1	5	1	5	1	2-5 clinicians
F1	0	0	C	0	3	1	3	1	Solo
C4	1	1	C	1	3	1	3	1	2-5 clinicians
F3	1	1	C	1	3	1	3	1	2-5 clinicians
C5	1	0	C	1	3	1	3	1	2-5 clinicians
C2	1	0	C	1	3	1	3	1	2-5 clinicians
F4	0	0	C	0	2	1	2	1	Solo
F5	0	0	C	0	2	1	2	1	Solo
G2	1	1	C	1	2	1	2	1	2-5 clinicians
F6	0	0	H/HS/HMO	0	2	1	2	1	2-5 clinicians
D1	0	0	H/HS/HMO	0	1	1	1	1	2-5 clinicians
A2	1	1	C	1	4	1	4	1	Solo
A6	1	1	C	1	4	1	4	1	Solo
A4	0	1	C	0	4	1	4	1	2-5 clinicians
A3	1	1	C	1	4	1	4	1	Solo
A7	1	0	C	1	4	1	4	1	Solo
E4	1	0	FQHC/RHC/IHS	1	3	1	3	1	2-5 clinicians
B9	1	0	FQHC/RHC/IHS	1	5	0	5	0	11+ clinicians
B10	0	0	C	0	3	0	3	0	Solo
E3	1	1	C	1	3	0	3	0	2-5 clinicians
C3	1	1	C	1	2	0	2	0	Solo
F2	0	0	C	0	2	2	2	2	2-5 clinicians
G3	1	1	C	1	4	2	4	2	2-5 clinicians
F13	0	0	C	0	2	2	2	2	6-10 clinicians
B3	1	0	C	1	4	1	4	1	Solo
B2	0	0	C	0	4	1	4	1	Solo
B5	0	0	C	0	4	1	4	1	Missing
A8	1	1	FQHC/RHC/IHS	1	4	1	4	1	2-5 clinicians
G1	1	0	C	1	4	1	4	1	2-5 clinicians
E1	1	0	C	1	3	1	3	1	2-5 clinicians
F10	1	0	C	1	2	1	2	1	2-5 clinicians
F11	0	0	H/HS/HMO	0	2	1	2	1	2-5 clinicians
C12	0	0	H/HS/HMO	0	2	1	2	1	2-5 clinicians
F9	0	0	H/HS/HMO	0	2	1	2	1	11+ clinicians
F12	0	0	C	0	1	1	1	1	6-10 clinicians
F14	0	0	FQHC/RHC/IHS	0	1	1	1	1	2-5 clinicians
A5	1	0	C	1	3	1	3	1	2-5 clinicians
F10	1	0	C	1	3	1	3	1	2-5 clinicians
D5	0	0	H/HS/HMO	0	1	1	1	1	2-5 clinicians
D4	0	0	H/HS/HMO	0	3	1	3	1	2-5 clinicians
G6	1	0	H/HS/HMO	1	2	1	2	1	2-5 clinicians
A9	0	0	C	0	5	1	5	1	Solo
E5	1	0	C	1	3	1	3	1	2-5 clinicians
F8	0	0	H/HS/HMO	0	2	1	2	1	2-5 clinicians
D8	0	0	H/HS/HMO	0	1	0	1	0	6-10 clinicians
D6	0	0	H/HS/HMO	0	1	0	1	0	2-5 clinicians
B11	0	0	FQHC/RHC/IHS	0	5	0	5	0	6-10 clinicians
B15	0	0	FQHC/RHC/IHS	0	5	0	5	0	2-5 clinicians
B14	0	0	FQHC/RHC/IHS	0	5	0	5	0	2-5 clinicians
B13	1	0	C	1	4	0	4	0	Solo
B16	0	0	C	0	4	0	4	0	Solo
B12	0	0	C	0	4	0	4	0	Solo
B7	0	0	C	0	4	0	4	0	2-5 clinicians
G9	0	0	C	0	4	0	4	0	2-5 clinicians
B4	0	0	C	0	3	0	3	0	Solo
C11	0	0	H/HS/HMO	0	3	0	3	0	Solo
C10	0	0	H/HS/HMO	0	3	0	3	0	Solo
D2	0	0	C	0	3	0	3	0	2-5 clinicians
G8	0	0	C	0	3	0	3	0	2-5 clinicians
D7	0	0	H/HS/HMO	0	2	0	2	0	2-5 clinicians
D3	0	0	C	0	1	0	1	0	Solo
G7	1	1	FQHC/RHC/IHS	1	3	0	3	0	6-10 clinicians
C9	0	0	FQHC/RHC/IHS	0	2	0	2	0	6-10 clinicians
C6	1	0	FQHC/RHC/IHS	1	3	0	3	0	Solo
C8	1	1	FQHC/RHC/IHS	1	3	0	3	0	2-5 clinicians
C7	0	1	FQHC/RHC/IHS	0	2	0	2	0	6-10 clinicians
E6	0	0	H/HS/HMO	0	3	0	3	0	2-5 clinicians
E7	0	0	FQHC/RHC/IHS	0	2	0	2	0	6-10 clinicians

C=Clinician; F=Federally Qualified Health Center; H=Hospital; HMO=Health Maintenance Organization; HS=Health System; I=Indian Health Service; RHC=Rural Health Clinic

Notes: For Practice ID, each letter refers to a different Cooperative and each number to a different practice in that Cooperative. Cells highlighted with yellow indicate consistent cases (ie, practice was covered by ≥ 1 solution pathway and outcome was present). Cells with green highlight indicate inconsistent cases (ie, practice was covered by ≥ 1 pathway, but outcome was not present). Practices above the red dotted line had ≥ 10 point gain in outcome present; those below the dotted line did not. Solution pathways are demarcated from one another by gray columns. Documentation and Take 2nd Blood Pressure: 1=Present and 0=Absent. Facilitation Duration: 1 ≤ 5 hours with a facilitator; 2=5-9.9 hours; 3=10-24.9 hours; and 5 ≥ 50 hours. For Measurement Training: 2= Train staff in how to take an accurate blood pressure with evidence of follow-up; 1= train staff in how to take an accurate blood pressure without evidence of follow-up; 0=no training.

Supplemental Table 5. Pathways Linked to ≥5-Point Gain in BP Outcome				
Pathway	**Consistency**	**Raw Coverage**	**Unique Coverage**	**Cases included in pathway[1]**
Take 2nd BP=1 AND Measurement Training= (1 or 2, with or without follow-up, respectively)	88% (21/24)	51% (21/41)	22% (9/41)	A1, A2, **A3**, **A6**, **A7**, A8, B3, B8, C2, C4, C5, **E2**, **E4**, E5, F3, F10, G2, **G3**, **G4**, **G5**, **G6**
Patient Education= 3 i.e., handouts plus plan to discuss at home BPs) AND Turnover in Office Manager or Clinicians=0	100% (6/6)	15% (6/41)	7% (3/41)	A2, B7, **B11, E3,** E5, **F8**
Measurement Training= 1 (i.e., without follow-up) AND Rurality=Urban	78% (18/23)	44% (18/41)	20% (8/41)	A1, A8, B3, **B5**, B8, C2, C4, C5, **D1**, **F1**, F3, **F4**, **F5**, **F6**, **F9**, F10, **F11**, G2
Subsequent BP Check= 3 (i.e., Scheduled free BP measurement visit) AND Duration of Facilitation ≥5 hours AND Ownership=Clinician	73% (8/11)	20% (8/41)	10% (4/41)	B3, **B4**, B7, **B10**, **C3**, C4, C5, **D2**
OVERALL MODEL	82% (37/45)	90% (37/41)	N/A	
Analytic dataset for ≥5-point gain in BP outcome had total of 70 cases; 9 cases were removed because they did not have complete data for all factors in the final model. Cases uniquely explained by one pathway are bolded. Each letter refers to a different Cooperative and each number to a different practice within that Cooperative.				

Supplemental Table 6. Primary Care Practice Sample Characteristics for Practices in Smoking (N=59) and Blood Pressure (N=73) Analyses of ≥10-Point Gain Compared to Non-Withdrawn Practices With Available Survey Data Not Included in These Analyses (N=1,313 for Smoking and N=1,299 for Blood Pressure)

	Practices in Smoking Analysis (N=59)	Practices not in Smoking Analysis (N=1,313)	SMD	Practices in Blood Pressure Analysis (N=73)	Practices not in Blood Pressure Analysis (N=1,299)	SMD
Practice Characteristics	**N (%)**	**N (%)**		**N (%)**	**N (%)**	
Ownership			0.487			0.479
Clinician owned	36 (61.0)	559 (42.6)		43 (58.9)	551 (42.4)	
Hospital/Health System	13 (22.0)	351 (26.7)		16 (21.9)	348 (26.8)	
FQHC	7 (11.9)	261 (19.9)		9 (12.3)	259 (19.9)	
RHS/IHS/Other	3 (5.1)	71 (5.4)		5 (6.8)	70 (5.4)	
Missing	0 (0.0)	71 (5.4)		0 (0.0)	71 (5.5)	
Practice Size			0.424			0.449
Solo practice	19 (32.2)	301 (22.9)		21 (28.8)	299 (23.0)	
2-5 clinicians	31 (52.5)	611 (46.5)		41 (56.2)	601 (46.3)	
6-10 clinicians	6 (10.2)	184 (14.0)		8 (11.0)	182 (14.0)	
11+ clinicians	2 (3.4)	148 (11.3)		2 (2.7)	148 (11.4)	
Missing	1 (1.7)	69 (5.3)		1 (1.4)	69 (5.3)	
Geographic Region / Cooperative			0.469			0.267
Midwest (IN, IL, WI)	12 (20.3)	200 (15.2)		15 (20.5)	197 (15.2)	
North Carolina	8 (13.6)	164 (12.5)		9 (12.3)	163 (12.5)	
Northwest (OR, WA, ID)	4 (6.8)	184 (14.0)		7 (9.6)	181 (13.9)	
New York City (five NY boroughs)	15 (25.4)	176 (13.4)		14 (19.2)	177 (13.6)	
Oklahoma	7 (11.9)	210 (16.0)		9 (12.3)	208 (16.0)	
Southwest (CO, NM)	9 (15.3)	189 (14.4)		11 (15.1)	187 (14.4)	
Virginia	4 (6.8)	190 (14.5)		8 (11.0)	186 (14.3)	
Urbanicity			0.298			0.163
Rural Area	4 (6.8)	207 (15.8)		8 (11.0)	203 (15.6)	
Large Town	10 (16.9)	170 (12.9)		12 (16.4)	168 (12.9)	
Suburban	4 (6.8)	94 (7.2)		6 (8.2)	92 (7.1)	
Urban Core	41 (69.5)	842 (64.1)		47 (64.4)	836 (64.4)	
Patient Characteristics	**Mean (SD)**	**Mean (SD)**		**Mean (SD)**	**Mean (SD)**	
Percent White	61.43 (33.71)	60.63 (29.86)	0.025	60.87 (33.35)	60.65 (29.83)	0.007
Percent Medicaid	20.53 (17.10)	23.26 (21.31)	0.141	19.60 (17.23)	23.35 (21.34)	0.193

Note: SMD, Standardized Mean Difference. We use Cohen J. Statistical Power Analysis for the Behavioral Sciences. 2nd ed. Hillsdale, NJ: Erlbaum; 1988 to interpret SMD (0-0.2 = small difference; 0.5 = medium difference; 0.8 = large difference).

[1]Practices with >90% performance on the smoking (n=11) or BP (n=1) CQM at baseline were not included in analyses because it was not logically possible for those practices to achieve a ≥10-point gain.