

**Supplemental materials for:**

Katz DA, Wu C, Jaske E, Stewart GL, Mohr DC. Care practices to promote patient engagement in va primary care: factors associated with high performance. *Ann Fam Med.* 2020;18(5):397-405.

Supplemental Table 1. Mean PE subscale scores and percentage of PACT survey respondents who endorsed use of specific PE care practices at their clinic (see Table 1 for description of PE items).

Patient planning			
PE subscale/item	Top quartile (N=397)	Middle two quartiles (N=1563)	Bottom quartile (N= 518)
PLAN, mean (sd)	4.7 (0.6)	3.6 (1.4)	2.3 (1.7)
PLAN1, %	92.2%	65.1%	36.5%
PLAN2, %	97.5%	83.0%	53.7%
PLAN3, %	94.7%	70.5%	41.9%
PLAN4, %	97.2%	81.3%	59.5%
PLAN5, %	88.4%	63.6%	40.0%
Motivational interviewing			
PE subscale/item	Top quartile (N=374)	Middle two quartiles (N=1814)	Bottom quartile (N= 290)
MI, mean (sd)	1.8 (0.5)	0.99 (0.93)	0.06 (0.3)
MI1, %	94.4%	53.1%	4.1%
MI2, %	89.3%	46.0%	1.4%
Organizational strategies			
PE subscale/item	Top quartile (N=509)	Middle two quartiles (N=1755)	Bottom quartile (N= 214)
ORG, mean (sd)	4.1 (1.4)	2.7 (1.4)	1.3 (1.1)
ORG1, %	46.4%	21.7%	4.2%
ORG2, %	94.7%	83.8%	51.9%

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ORG3, %	62.5%	30.0%	4.7%
ORG4, %	65.6%	37.3%	10.8%
ORG5, %	45.0%	19.9%	5.6%
ORG6, %	90.8%	75.3%	50.5%

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**Supplemental Table 2.** Clinic organization and management variables - selected questions from 2016 PACT survey\*

1) Staffing ratio: Is your PACT staffed at the desired ratio of at least 3 team members per full-time PCP?

2) Staff turnover: Has your PACT had any changes in, or loss of, staff in the past 12 months?

3) Role clarity: Does your clinic have written role descriptions for each team member that outline expectations?

4) Daily team “huddles”: Does your PACT typically huddle daily in your primary care clinic?

5) Regular team meetings: Does your PACT having regular meetings to discuss performance improvement?

6) Responsible PACT leadership: Does your clinic have a leadership structure responsible for implementing PACT?

7) Review of performance reports: Do all members of your PACT regularly review performance reports?

8) Burnout: “I feel burned out from my work.”

- Rated on a 7-point ordinal scale ranging from “never” to “every day.”
- This variable was dichotomized at  $\geq$  once a week versus  $<$  once a week.

9) Work to top of license: What proportion of your time each week do you typically spend doing work that is well-matched to your training?

- Rated on a 4-point scale ranging from “Less than 25%” to “75% or more.”
- This variable was dichotomized at  $\geq 75$  versus  $\leq 75\%$ .

10) Psychological safety (7-item scale):

- a) If you make a mistake on this team, it is often held against you.
- b) Members of this team are able to bring up problems and tough issues.
- c) It is difficult to ask other members of this team for help.
- d) No one on this team would deliberately act in a way that undermines my efforts.
- e) It is safe to take a risk on this team.
- f) Members of this team sometimes reject others for being different.
- g) Working with members of this team, my unique skills and talents are valued and utilized.

- All items were rated on a 7-item Likert type scale, ranging from “very inaccurate” to “very accurate.”
- The average of all seven items was computed and dichotomized at  $\geq 4.0$  (corresponding to accurate/very accurate) vs.  $< 4.0$ .

\* Response choices for items 1-7 were “Yes/No/Don’t know,” unless indicated otherwise.

**Supplemental Table 3.** Item-scale correlations for patient engagement (PE) subscales (N=2478). \* The percentage of respondents who endorsed each item is shown in the second column.

Item	%	PLAN	MI	ORG
PLAN1	63	<b>0.72</b>	0.45	0.33
PLAN2	79	<b>0.73</b>	0.42	0.31
PLAN3	68	<b>0.76</b>	0.35	0.36
PLAN4	79	<b>0.69</b>	0.31	0.36
PLAN5	63	<b>0.68</b>	0.28	0.35
MI1	54	0.49	<b>0.95</b>	0.33
MI2	47	0.46	<b>0.95</b>	0.32
ORG1	25	0.29	0.28	<b>0.6</b>
ORG2	83	0.34	0.16	<b>0.54</b>
ORG3	34	0.25	0.22	<b>0.64</b>
ORG4	41	0.38	0.29	<b>0.67</b>
ORG5	24	0.34	0.25	<b>0.66</b>
ORG6	76	0.16	0.05	<b>0.51</b>

\*PLAN = Patient planning and goal setting practices, MI = Motivational interviewing techniques, ORG = Organizational strategies to promote self-management (ORG). See Table 1 for subscale items.

**Supplemental Table 4.** Patient characteristics of clinics in top versus bottom quartile for each PE subscale

Variable (%)	Patient planning		Motivational interviewing		Organizational strategies		Total sample (N=2478)
	Top	Bottom	Top	Bottom	Top	Bottom	
	quartile (N=397)	quartile (N= 518)	quartile (N=374)	quartile (N= 290)	quartile (N=509)	quartile (N= 214)	
<i>Clinic and workload characteristics<sup>†</sup></i>							
Age, mean (sd)	68.9 (3.6)	68.7 (2.8)	69.2 (3.4)*	68.7 (2.9)	68.8 (3.3)	68.5 (2.9)	68.7 (2.8)
Race (% non- white)	23	25	24	24	25*	22	25
Marital status (% married)	61*	58	56*	61	58	59	58
Income category, %							
Lowest tertile (<\$26,913/yr)	25*	30	31	29	34	36	33
Middle tertile (\$26,913-35,340/yr)	36*	39	32	32	24	32	33
Highest tertile (>\$35,340/yr)	39*	31	37	39	41	32	34
Comorbidity score, mean (sd) <sup>‡</sup>	0.66 (.33)	0.74 (.32)	0.77 (.39)*	0.64 (.32)	0.71 (.32)	0.75 (.37)	0.76 (0.33)
Self-reported health status, %							
Excellent-very good	24	25	24	24	24	25	24
Good	35*	37	35	36	36	36	36
Fair-poor	41*	38	41	40	40	39	40
PCP continuity of care (MMCI), %							
Good (0.75<=MMCI<=1)	8	8	10	8	8	5	9
Fair (0.5<= MMCI <.0.75)	78	80	75	75	80	86	85
Poor (MMCI <0.5)	14	12	15	17	12	9	6

Proportion of PCPs with panels over capacity, %	70	73	70	73	72	71	82
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*Abbreviations:* PE=patient engagement, PACT=patient-aligned care team, IQR=interquartile range, CBOC=community-based outpatient clinic, MMCI=modified, modified continuity index, PCP=primary care provider.

\*  $p \leq .05$ , based on bivariable logistic regression models using GEE to account for clustering by clinic facility. Note that the top and bottom quartiles are unequal because of discontinuity in the distribution of PE subscale scores (across the range of possible scores).

† Results shown are clinic-level characteristics of the participating respondents.

‡ Medical comorbidity was calculated using the average Gagne score, a validated comorbidity score that captures the conditions in the Charlson and Elixhauser measures to predict short- and long-term mortality.