

Supplemental Table 1. Prevalence of professional isolation, work-life stress, and dissatisfaction with practice on aggregate and by response to items pertaining to practice quality and QI efforts

Outcomes				
Professional Isolation	Not a problem	Slight problem	Moderate problem	Serious problem
N=1168*	643 (55%)	327 (28%)	162 (14%)	35 (3%)
Response to survey item:**				
“We are actively making changes to improve quality” ♦				
Agree or strongly agree (N=957)	547 (57%)	270 (28%)	116 (12%)	25 (3%)
Neither agree nor disagree (N=141)	70 (50%)	38 (27%)	29 (21%)	4 (3%)
Disagree or strongly disagree (N=35)	9 (26%)	12 (34%)	9 (26%)	5 (14%)
“After we make changes to improve quality, we evaluate their effectiveness” ♦				
Agree or strongly agree (N=704)	419 (60%)	189 (27%)	83 (12%)	13 (2%)
Neither agree nor disagree (N=296)	155 (52%)	86 (29%)	45 (15%)	10 (3%)
Disagree or strongly disagree (N=132)	51 (39%)	45 (34%)	27 (20%)	9 (7%)
“We have quality problems in our practice”				
Agree or strongly agree (N=369)	183 (50%)	114 (31%)	59 (16%)	13 (3%)
Neither agree nor disagree (N=316)	171 (54%)	89 (28%)	46 (15%)	10 (3%)
Disagree or strongly disagree (N=447)	268 (60%)	117 (26%)	51 (11%)	11 (3%)
“Our procedures and systems are good at preventing errors”				
Agree or strongly agree (N=507)	294 (58%)	134 (26%)	66 (13%)	11 (2%)
Neither agree nor disagree (N=421)	228 (54%)	124 (30%)	58 (14%)	11 (3%)
Disagree or strongly disagree (N=202)	97 (48%)	61 (30%)	32 (16%)	12 (6%)
Work-Life Stress	Not a problem	Slight problem	Moderate problem	Serious problem
N=1166*	146 (13%)	484 (41%)	419 (36%)	117(10%)
Response to survey item:†**				
“We are actively making changes to improve quality” ♦				
Agree or strongly agree (N=957)	121 (13%)	401 (42%)	347 (36%)	88 (9%)
Neither agree nor disagree (N=139)	18 (13%)	61 (44%)	46 (33%)	14 (10%)
Disagree or strongly disagree (N=35)	1 (3%)	9 (26%)	13 (37%)	12 (34%)
“After we make changes to improve quality, we evaluated their effectiveness” ♦				

Agree or strongly agree (N=702)	100 (14%)	305 (43%)	243 (35%)	54 (8%)
Neither agree nor disagree (N=294)	32 (11%)	118 (40%)	111 (38%)	33 (11%)
Disagree or strongly disagree (N=133)	10 (8%)	45 (34%)	51 (38%)	27 (20%)
“We have quality problems in our practice” [§]				
Agree or strongly agree (N=370)	33 (9%)	140 (38%)	147 (40%)	50 (14%)
Neither agree nor disagree (N=315)	40 (13%)	133 (42%)	114 (36%)	28 (9%)
Disagree or strongly disagree (N=446)	68 (15%)	197 (44%)	145 (32%)	36 (8%)
“Our procedures and systems are good at preventing errors” [§]				
Agree or strongly agree (N=507)	75 (15%)	218 (43%)	172 (34%)	42 (8%)
Neither agree nor disagree (N=419)	53 (13%)	171 (41%)	154 (37%)	41 (10%)
Disagree or strongly disagree (N=203)	13 (6%)	81 (40%)	78 (38%)	31 (15%)
Practice Dissatisfaction	Very Satisfied	Generally Satisfied	Somewhat Dissatisfied	Very Dissatisfied
N=1162*	256 (22%)	597 (51%)	246 (21%)	63 (5%)
Response to survey item:**				
“We are actively making changes to improve quality” ♦				
Agree or strongly agree (N=953)	229 (24%)	499 (52%)	184 (19%)	41 (4%)
Neither agree nor disagree (N=141)	19 (13%)	75 (53%)	39 (28%)	8 (6%)
Disagree or strongly disagree (N=33)	0 (0%)	10 (30%)	13 (39%)	10 (30%)
“After we make changes to improve quality, we evaluated their effectiveness” ♦				
Agree or strongly agree (N=699)	183 (26%)	368 (53%)	129 (18%)	19 (3%)
Neither agree nor disagree (N=295)	52 (18%)	157 (53%)	66 (22%)	20 (7%)
Disagree or strongly disagree (N=131)	13 (10%)	57 (44%)	42 (32%)	19 (15%)
“We have quality problems in our practice” ♦				
Agree or strongly agree (N=366)	54 (15%)	180 (49%)	105 (29%)	27 (7%)
Neither agree nor disagree (N=314)	61 (19%)	175 (56%)	65 (21%)	13 (4%)
Disagree or strongly disagree (N=446)	133 (30%)	227 (51%)	67 (15%)	19 (4%)
“Our procedures and systems are good at preventing errors” ♦				
Agree or strongly agree (N=507)	140 (28%)	266 (52%)	87 (17%)	14 (3%)
Neither agree nor disagree (N=416)	83 (20%)	219 (53%)	90 (22%)	24 (6%)

Disagree or strongly disagree (N=202)	23 (11%)	98 (49%)	60 (30%)	21 (10%)
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†As work-life stress is the average of scores for responses to items about personal or professional stress, working long hours and demoralization (see Text Box 1) the average was rounded to the nearest integer to correlate the composite score back to the original scale.

*N for responses to each QI or quality question may not sum to total N because of non-response for individual items.

**p-values are for the Chi-Square test.

§p-value < 0.05

◆p-value ≤ 0.001

Supplemental Table 2. Standardized regression coefficients for the relationship between all available covariates and stress, overwork, and demoralization, and the work-life stress composite endpoint (see final column) †

	Stressed (n=993)	Overworked (n=993)	Demoralized (n=993)	Work-life Stress (n=991)
Practice Quality and QI Activities*				
“We are actively doing things to improve quality of care”	-0.07	-0.03	-0.04	-0.05
“After we make changes to improve quality, we evaluate their effectiveness”	-0.12 [§]	-0.09 [§]	-0.07	-0.11[§]
“We have quality problems in our practice”	0.09 [§]	0.10 [§]	0.09 [§]	0.12[♦]
“Our procedures and systems are good at preventing errors”	-0.04	-0.04	-0.01	-0.04
Physician Characteristics				
Gender (Male vs. Female)	-0.07 [§]	-0.03	-0.01	-0.04
Race (White vs. Non-White)	0.07 [§]	0.05	0.005	0.05
Owner (Owner vs. Non-Owner)	-0.006	0.11 [§]	0.04	0.06
Specialty (Primary Care vs. Other or N/A)**	-0.008	0.003	0.004	-0.003
Age (>50 vs. ≤ 50)	0.002	0.01	0.04	0.02
Visits Per Week ^{††}	0.07 [§]	0.12 [♦]	0.03	0.09[§]
Practice Characteristics				
EHR (Yes vs. No)	0.07 [§]	0.06	-0.01	0.05
Type (Solo vs. Group)	-0.01	-0.02	-0.04	-0.03
Location (Rural vs. Non-Rural)	0.07 [§]	0.02	0.09 [§]	0.07[§]
Teach (Teaching vs. No Teaching)	0.06	0.10 [§]	0.03	0.08[§]
Resources ^{††}	-0.06	-0.03	-0.17 [♦]	-0.11[♦]

† The standardized coefficient shows how many standard deviations of change occur in the outcome for each standard deviation of change in the predictor. Therefore, they allow for comparison of the strength of association even for different types of predictors.

†† Visits per week and practice resources were considered as continuous variables in these models.

*The degree of agreement with the quality improvement items was considered as agreement, non-agreement, or disagreement for the purposes of all models.

**For modeling purposes, there are 457 respondents who indicated they are part of primary care practices, while 524 indicated they are in specialty practice and 174 are in mixed practices. These last two groups were combined.

§ p-value < 0.05

♦ p-value ≤ 0.001