

**Supplementary File 1:** Mean between-group differences and 95% confidence intervals for the change in trial outcomes by intention-to-treat and per-protocol, with and without imputation for missing data and with and without adjustment for study recruitment site.

Outcome	Immediate Intervention Group (mean, standard deviation)		Delayed Intervention Group (mean, standard deviation)		Mean Difference (95% confidence interval); P value					
	Baseline	Follow-up	Baseline	Follow-up	ITT* (no imputation)	ITT (no imputation, adjusted for site)	ITT (with imputation for missing data)	ITT (with imputation missing data) adjusted for site	Per protocol	Per protocol adjusted for site
SDM† ACP‡ Engagement Survey overall score	3.7, 8	4.1, 0.6	3.6, 0.8	3.8, 0.8	0.3 (-0.1, 0.7) p=0.12	0.2 (-0.2, 0.6) p=0.31	0.2 (-0.3, 0.6) p=0.39	0.1 (-0.4, 0.6) p=0.64	0.2 (-0.2, 0.6) p=0.28	0.1 (-0.3, 0.6) p=0.60
SDM knowledge sub-scale	3.9, 0.7	4.4, 0.5	4.0, 1.0	4.3, 0.6	0.1 (-0.2, 0.4) p=0.44	0.0 (-0.3, 0.4) p=0.82	0.1 (-0.2, 0.5) p=0.40	0.1 (-0.3, 0.4) p=0.37	0.1 (-0.2, 0.4) p=0.53	0.0 (-0.3, 0.4) p=0.90
SDM completion sub-scale	4.0, 0.7	4.4, 0.4	4.2, 0.6	4.2, 0.5	0.2 (-0.1, 0.5) p=0.22	0.1 (-0.2, 0.5) p=0.36	0.2 (-0.1, 0.4) p=0.30	0.1 (-0.2, 0.4) p=0.38	0.1 (-0.2, 0.4) p=0.36	0.1 (-0.2, 0.4) p=0.59
SDM self-efficacy sub-scale	3.4, 1.2	3.6, 0.9	3.1, 1.4	3.2, 1.2	0.4 (-0.2, 1.0) p=0.21	0.3 (-0.4, 1.0) p=0.39	0.3 (-0.4, .0.9) p=0.40	0.2 (-0.5, 0.8) p=0.62	0.3 (-0.3, 1.0) p=0.34	0.2 (-0.5, 0.9) p=0.56
SDM readiness sub-scale	3.4, 1.1	3.9, 0.9	3.2, 1.1	3.4, 1.2	0.5 (-0.1, 1.1) p=0.13	0.3 (-0.3, 1.0) p=0.34	0.4 (-0.3, 1.1) p=0.22	0.3 (-0.3, 1.0) p=0.32	0.3 (-0.3, 0.9) p=0.33	0.1 (-0.5, 0.8) p=0.69
SDM action sub-scale	2.0, 1.8	3.0, 1.7	2.4, 1.6	2.6, 1.9	0.5 (-0.6, 1.6) p=0.40	0.3 (-0.9, 1.5) p=0.58	0.2 (-0.9, 1.4) p=0.68	0.1 (-1.0, 1.3) p=0.84	0.1 (-1.0, 1.2) p=0.85	-0.1 (-1.2, 1.1) p=0.92
Patient ACP Engagement Survey overall score	3.9, 0.7	4.3, 0.6	3.7, 0.7	3.9, 0.7	0.5 (0.1, 0.9) p=0.03	0.4 (-0.1, 0.8) p=0.09	0.4 (0.0, 0.8) p=0.05	0.4 (-0.1, 0.8) p=0.11	0.4 (-0.0, 0.8) p=0.05	0.3 (-0.1, 0.8) p=0.13
Patient self-efficacy sub-scale	4.6, 0.4	4.7, 0.4	4.6, 0.6	4.6, 0.7	0.1 (-0.2, 0.4) p=0.40	0.1 (-0.2, 0.5) p=0.39	0.1 (-0.2, 0.4) p=0.46	0.1 (-0.2, 0.4) p=0.50	0.1 (-0.2, 0.4) p=0.48	0.1 (-0.2, 0.5) p=0.50
Patient readiness sub-scale	3.1, 1.2	3.9, 1.0	2.8, 1.1	3.1, 1.2	0.8 (0.1, 1.4) p=0.02	0.6 (-0.1, 1.3) p=0.09	0.7 (-0.0, 1.4) p=0.06	0.6 (-0.2, 1.3) p=0.12	0.7 (0.0, 1.4) p=0.04	0.5 (-0.2, 1.2) p=0.13
Patient action sub-scale	2.1, 1.8	3.4, 2.0	1.5, 1.6	2.1, 1.9	1.2 (0.1, 2.4) p=0.04	1.0 (-0.3, 2.2) p=0.13	0.9 (-0.4, 2.2) p=0.19	0.8 (-0.6, 2.1) p=0.25	1.1 (-0.1, 2.3) p=0.08	0.9 (-0.4, 2.2) p=0.18

\* Intention-to-treat † Substitute decision-maker ‡ Advance care planning § Mean Difference