Supplementary Appendix A: Selection of Predictors for Multilevel Model

Model Evaluated	Fixed effect removed	-2 Log Likelihood	Number of Parameters	Likelihood ratio test	Include in final model
Fixed intercept, Random intercept (participant), Complexity, CDS, Omission error, Commission error, Complexity * CDS, Complexity * Omission error, Complexity * Commission error, CDS * Omission error, CDS * Commission error, Omission error * Commission error		2969.117	17		
Fixed intercept, Random intercept (participant), Complexity, CDS, Omission error, Commission error, Complexity * CDS, Complexity * Omission error, CDS * Omission error, CDS * Commission error, Omission error * Commission error	Complexity * Commission error	2969.118	16	$\chi^2(1)$=.001 p=.975	Exclude
Fixed intercept, Random intercept (participant), Complexity, CDS, Omission error, Commission error, Complexity * CDS, Complexity * Omission error, CDS * Commission error, Omission error * Commission error	CDS * Omission error	2969.282	14	$\chi^2(2)$=.164 p=.921	Exclude
Fixed intercept, Random intercept (participant), Complexity, CDS, Omission error, Commission error, Complexity * Omission error, CDS * Commission error, Omission error * Commission error	Complexity * CDS	2969.829	12	$\chi^2(2)$=.547 p=.761	Exclude
Fixed intercept, Random intercept (participant), Complexity, CDS, Omission error, Commission error, CDS * Commission error, Omission error * Commission error	Complexity * Omission error	2969.847	11	$\chi^2(1)$=.018 p=.893	Exclude
Fixed intercept, Random intercept (participant), Complexity, CDS, Omission error, Commission error, CDS * Commission error	Omission error * Commission error	2970.154	10	$\chi^2(1)$=.307 p=.580	Exclude
Fixed intercept, Random intercept (participant), Complexity, CDS, Omission error, Commission error	CDS * Commission error	2976.517	8	$\chi^2(2)$=6.363 p=.042	Include
Fixed intercept, Random intercept (participant), Complexity, CDS, Omission error	Commission error	2978.200	7	$\chi^2(1)$=1.683 p=.195	Exclude
Fixed intercept, Random intercept (participant), Complexity, CDS	Omission error	2983.210	6	$\chi^2(1)$=5.010 p=.025	Include
Fixed intercept, Random intercept (participant), Complexity	CDS	3029.940	4	$\chi^2(2)$=46.730 p<.001	Include
[Intercepts only model] Fixed intercept, Random intercept (participant)	Complexity	3103.021	3	$\chi^2(1)$=73.081 p<.001	Include
Fixed intercept	Random intercept (participant)	3114.720	2	$\chi^2(1)$=11.699 p=.001	Include
[Null model]	Fixed intercept	3567.464	1	$\chi^2(1)$=452.744 p<.001	Include

Final model

Intercept for fixed effects, Random intercept: Participant (Covariance structure: Variance components), Task complexity (low, high), Quality of clinical decision support (correct, incorrect, control), Omission error (no, yes), Quality of clinical decision support * Commission error (no, yes), Residual.

10 parameters, -2 Log likelihood = 2970.154

Supplementary Appendix B: Multilevel Model Coefficients

	Coefficient	Std. Error	df	t	Sig.	95% Confidence Interval Lower Bound	Upper Bound
Intercept	29.81	5.048	356.884	5.905	.000	19.88	39.74
Low task complexity	14.17	1.380	302.436	10.266	.000	11.45	16.89
High task complexity	.	.	.	.	.	.	.
Correct CDS	-20.42	7.071	343.683	-2.888	.004	-34.33	-6.51
Incorrect CDS	-15.18	5.202	340.806	-2.918	.004	-25.41	-4.95
Control (No CDS)	.	.	.	.	.	.	.
No omission error	3.69	1.742	361.914	2.121	.035	.27	7.12
Omission error	.	.	.	.	.	.	.
Correct CDS * No commission error	-.16	5.346	339.548	-.029	.977	-10.67	10.36
Correct CDS * Commission error	.	.	.	.	.	.	.
Incorrect CDS * No commission error	6.00	2.520	353.936	2.381	.018	1.04	10.96
Incorrect CDS * Commission error	.	.	.	.	.	.	.
Control (No CDS) * No commission error	-7.87	5.047	345.557	-1.560	.120	-17.80	2.05
Control (No CDS) * Commission error	.	.	.	.	.	.	.

. = parameter is redundant.