

This supplementary appendix (Supplementary File 3) includes:

1. A of all multi-level model outputs for specific tests outcomes (secondary analyses).

UT associations with outcomes.

Model	β [95% CI]	p	R^2	ICC	AIC BIC
Random intercepts					
Logistic models (effect size = odds ratios)					
Ordered tests: Any test ordered (yes versus no)					
Model I	0.75 [0.40-1.41]	0.18	C = 18% M = 14%	5%	498 525
Model II	0.72 [0.38-1.36]	0.16	C = 18% M = 14%	5%	496 528
Model III	0.72 [0.38-1.35]	0.16	C = 21% M = 17%	5%	491 530
Model IV	0.74 [0.40-1.36]	0.17	C = 21% M = 18%	4%	493 541
Ordered treatments: Any treatment ordered (yes versus no)					
Model I	0.88 [0.52-1.49]	0.32	C = 7% M = 6%	0.1%	515 543
Model II	0.87 [0.52-1.45]	0.30	C = - M = 9%	nil	508 539
Model III	0.90 [0.54-1.52]	0.35	C = - M = 11%	nil	506 545
Model IV	0.93 [0.55-1.59]	0.40	C = - M = 14%	nil	500 548
Ordered treatments or tests: Any treatment or test ordered (yes versus no)					
Model I	0.65 [0.29-1.47]	0.15	C = 22% M = 11%	13%	451 478
Model II	0.64 [0.29-1.43]	0.14	C = 22% M = 11%	12%	451 483
Model III	0.66 [0.30-1.46]	0.15	C = 23% M = 13%	11%	448 488
Model IV	0.71 [0.35-1.45]	0.18	C = 23% M = 18%	7%	446 494
Ordered tests: X-Ray (yes versus no)					
Model I	0.77 [0.35-1.69]	0.26	C = 15% M = 4%	12%	457 485

UT associations with outcomes.

Model	β [95% CI]	p	R^2	ICC	AIC BIC
Random intercepts					
Model II	0.74 [0.34-1.64]	0.23	C = 15% M = 4%	12%	454 486
Model III	0.71 [0.32-1.60]	0.21	C = 19% M = 8%	12%	448 487
Model IV	0.65 [0.31-1.40]	0.14	C = 19% M = 12%	8%	454 517
Ordered tests: CT scan (yes versus no)					
Model I	1.10 [0.41-2.97]	0.58	C = - M = 90%	-	199 227
Model II	1.12 [0.41-3.03]	0.59	C = - M = 90%	-	200 232
Model III	0.98 [0.35-2.77]	0.29	C = - M = 90%	-	195 234
Model IV	1.29 [0.42-3.99]	0.66	C = - M = 90%	-	197 260
Ordered tests: US scan (yes versus no) <i>Event rate too low for stable estimates</i>					
Ordered tests: MRI scan (yes versus no) <i>Event rate too low for stable estimates</i>					
Ordered tests: Blood test (any) (yes versus no)					
Model I	0.82 [0.39-1.72]	0.30	C = 15% M = 10%	6%	394 422
Model II	0.79 [0.38-1.66]	0.27	C = 16% M = 11%	6%	392 424
Model III	0.75 [0.36-1.56]	0.22	C = 17% M = 13%	4%	390 430
Model IV	0.67 [0.34-1.32]	0.12	C = 16% M = 16%	0.9%	398 461
Ordered tests: ECG (yes versus no)					
Model I	0.26 [0.07-0.90]	0.02	C = - M = 18%	-	160 187
Model II	0.26 [0.07-0.91]	0.02	C = - M = 19%	-	162 193
Model III	0.24 [0.07-0.85]	0.02	C = - M = 22%	-	163 203
Model IV	0.24 [0.06-0.92]	0.02	C = - M = 27%	-	173 237
Admittance on initial attendance (yes versus no)					

UT associations with outcomes.

Model	β [95% CI]	p	R^2	ICC	AIC BIC
Random intercepts					
Model I	1.07 [0.56-2.04]	0.85	C = - M = 41%	-	372 400
Model II	1.05 [0.53-2.09]	0.89	C = - M = 47%	-	346 378
Model III	0.99 [0.49-1.99]	0.97	C = - M = 49%	-	336 375
Model IV	0.98 [0.46-2.09]	0.97	C = - M = 51%	-	343 407
30-day re-attendance (yes versus no)					
Model I	0.95 [0.47-1.92]	0.89	C = - M = 4%	-	320 348
Model II	0.97 [0.47-2.00]	0.94	C = - M = 9%	-	312 344
Model III	0.95 [0.46-1.95]	0.88	C = - M = 13%	-	311 351
Model IV	1.05 [0.48-2.28]	0.91	C = - M = 13%	-	321 384
30-day admittance upon discharge (yes versus no)					
Model I	0.77 [0.28-2.11]	0.61	C = - M = 18%	-	191 219
Model II	0.79 [0.28-2.26]	0.66	C = - M = 24%	-	185 217
Model III	0.80 [0.28-2.30]	0.67	C = - M = 24%	-	189 229
Model IV	0.82 [0.28-2.37]	0.71	C = - M = 31%	-	196 259
24-hour stay length (yes versus no)					
Model I	0.91 [0.35-2.34]	0.43	C = - M = 99%	-	196 224
Model II	0.91 [0.35-2.34]	0.42	C = - M = 98%	-	198 230
Model III	0.97 [0.36-2.59]	0.48	C = - M = 98%	-	198 238
Model IV	1.21 [0.41-3.64]	0.73	C = - M = 98%	-	198 245
30-day death upon discharge (yes versus no)					
<i>Event rate too low for stable estimates</i>					
Linear models (effect size = unstandardised beta)					

UT associations with outcomes.

Model	β [95% CI]	p	R^2	ICC	AIC BIC
Random intercepts					
Cost index v1: Estimated total cost of all ordered tests + treatments (note to log outcomes, a constant of £182 was added - which = avg cost of attendance)					
Model I log	-0.01 [-0.06-0.05]	0.37	C = 12% M = 8%	4%	-162 -130
Model II log	-0.01 [-0.06-0.04]	0.36	C = 13% M = 9%	3%	-156 -120
Model III log	-0.01 [-0.06-0.04]	0.31	C = 16% M = 13%	3%	-150 -106
Model IV log	-0.01 [-0.06-0.04]	0.32	C = 16% M = 13%	4%	-130 -79
Cost index v2: Index v1 + estimated hospital stay length adjusted admission costs					
Model I log	0.02 [-0.24-0.28]	0.56	C = 17% M = 16%	1%	1122 1153
Model II log	-0.002 [-0.24-0.24]	0.49	C = - M = 23%	nil	1088 1123
Model III log	-0.005 [-0.24-0.23]	0.48	C = - M = 27%	nil	1082 1126
Model IV log	-0.002 [-0.23-0.23]	0.48	C = - M = 28%	nil	1094 1145
Cost index v3: Index v2 + estimated 30-day re-attendance/return admission costs					
Model I log	-0.05 [-0.34-0.24]	0.37	C = 19% M = 17%	2%	1182 1213
Model II log	-0.07 [-0.33-0.19]	0.29	C = 26% M = 25%	0.4%	1141 1177
Model III log	-0.08 [-0.33-0.17]	0.28	C = - M = 27%	nil	1146 1190
Model IV log	-0.07 [-0.32-0.18]	0.28	C = - M = 28%	nil	1156 1208