

## Supplementary material sensitivity analysis and supplementary tables 1-4

### Sensitivity Analysis.

As a last step in the analysis, we performed a sensitivity analysis considering also missingness not at random (MNAR) for some of the key analyses. MNAR means that, even accounting for all the available observed information, the reason for observations being missing still depends on the unseen observations themselves. We performed a simple sensitivity analysis, assuming as a not ignorable missing model that depression, anxiety, hedging and avoiding are worse when the value is missing. Therefore, after multiple imputation under the MAR assumption using MICE, I increased each imputed value of depression (PHQ9) and anxiety (GAD7) by a certain number  $d$ . This number  $d$  was obtained as follows. First, a random number  $\delta$  was sampled from a normal distribution with mean the estimated standard deviation of the distribution of PHQ9/GAD7, and standard deviation the square root of this value. Then  $d = \max(\delta, 1)$ , such that  $d$  is restricted to imply an increase in PHQ9/GAD7. Therefore,  $d$  instead of  $\delta$  is added to the imputed value under missingness at random (MAR). After this, the new imputed value is rounded and bound at the maximum possible value, such that an integer number on the original scale is obtained. For hedging/avoiding, all missings were assumed to have displayed at least some hedging/avoiding behaviour. The actual score on the scale is irrelevant, because the scale is dichotomised prior to the analysis. After the imputations under MNAR are computed, analysis proceeds as usual, using Rubin's rules to combine results.

**Supplementary table 1: Sensitivity analysis for PHQ-9**

<b>Depression (PHQ-9)<sup>a</sup></b>	<b>No complaint</b> n=1780 (22.5%)	<b>Past complaint</b> n=3889 (49.1%)	<b>Recent/ current complaint</b> n=2257 (28.5%)	<b>Total</b> n=7926 (100%)	<b>Relative risk for past complaint group/ mean difference (95% CI)</b>	<b>Relative risk for recent complaint group / mean difference (95% CI)</b>
Missings	255 (14%)	1144 (29%)	214 (9%)	1613 (20%)		
<b>Complete case</b>						
Mean (SD)	3.8 (4.5)	3.4 (4.6)	5.2 (5.8)	4.1 (5.0)	-0.4 (-0.7, 0.1)	1.4 (1.1, 1.7)
Moderate to severe depression n (%)	160 (10.5%)	254 (9.3%)	363 (17.8%)	777 (12.3%)	0.88 (0.73, 1.06)	1.69 (1.42, 2.02)
<b>MI MAR</b>						
Mean (SD)	3.7 (4.3)	3.4 (4.2)	5.1 (5.6)	3.9 (4.7)	-0.3 (-0.6, -0.0)	1.4 (1.1, 1.7)
Moderate to severe depression n (%)	169 (9.5%)	303 (7.8%)	381 (16.9%)	852 (10.8%)	0.81 (0.65, 1.01)	1.77 (1.48, 2.13)
<b>MI MNAR</b>						
Mean (SD)	4.3 (4.6)	4.7 (4.8)	5.4 (5.7)	4.8 (5.1)	0.4 (0.1, 0.7)	1.1 (0.8, 1.4)
Moderate to severe depression n (%)	238 (13.4%)	593 (15.2%)	432 (19.2%)	1263 (15.9%)	1.14 (0.95, 1.35)	1.43 (1.21, 1.70)

<sup>a</sup> The PHQ-9 depression scale ranges from 0 to 27. A score below five indicates absence of depression, a score between five and nine indicates mild depression, a score between ten and fourteen indicates moderate depression, a score between fifteen and nineteen indicates moderately severe depression and a score above nineteen indicates severe depression.

**Supplementary table 2: Sensitivity analysis for GAD-7**

<b>Anxiety (GAD7)<sup>b</sup></b>	<b>No complaint</b> n=1780 (22.5%)	<b>Past complaint</b> n=3889 (49.1%)	<b>Recent/ current complaint</b> n=2257 (28.5%)	<b>Total</b> n=7926 (100%)	<b>Relative risk for past complaint group/ mean difference (95% CI)</b>	<b>Relative risk for recent complaint group / mean difference (95% CI)</b>
Missings	258 (14%)	1148 (30%)	201 (9%)	1607 (20%)		
<b>Complete case</b>						
Mean (SD)	3.2 (3.9)	3.0 (4.0)	4.7 (5.0)	3.6 (4.4)	-0.2 (-0.4, 0.1)	1.5 (1.2, 1.8)
Moderate to severe depression n (%)	123 (8.1%)	194 (7.1%)	330 (16.1%)	647 (10.2%)	0.88 (0.71, 1.09)	1.99 (1.63, 2.42)
<b>MI MAR</b>						
Mean (SD)	3.1 (3.8)	3.0 (3.8)	4.5 (4.9)	3.5 (4.2)	-0.1 (-0.4, 0.2)	1.4 (1.1, 1.7)
Moderate to severe depression n (%)	131 (7.3%)	234 (6.0%)	338 (15.0%)	703 (8.9%)	0.80 (0.57, 1.13)	2.08 (1.61, 2.68)
<b>MI MNAR</b>						
Mean (SD)	3.7 (4.1)	4.3 (4.4)	4.9 (5.0)	4.3 (4.6)	0.5 (0.2, 0.9)	1.2 (0.9, 1.5)
Moderate to severe depression n (%)	173 (9.7%)	463 (11.9%)	374 (16.6%)	1011 (12.75%)	1.22 (0.98, 1.51)	1.71 (1.35, 2.18)

<sup>b</sup>The GAD-7 anxiety scale ranges from 0 to 21. A score below five indicates minimal anxiety, a score between five and nine indicates mild anxiety, a score between ten and fourteen indicates moderate anxiety and a score of fifteen or above indicates severe anxiety.

**Supplementary table 3: Sensitivity analysis for hedging.**

<b>Because of your / other's experiences with complaints, have you ever displayed hedging behaviour?</b>	<b>No complaint n=1780 (22.5%)</b>	<b>Past complaint n=3889 (49.1%)</b>	<b>Recent or current complaint n=2257 (28.5%)</b>	<b>Total n=7926 (100%)</b>	<b>Relative Risk for past complaint (95% CI)</b>	<b>Relative Risk for recent or current complaint (95% CI)</b>
Missings	268	1241	273	1782		
<b>Complete case</b>						
n (%)	1222 (80.8%)	2135 (80.6%)	1752 (88.3%)	5109 (83.1%)	1.00 (0.97,1.03)	1.09 (1.06,1.13)
<b>MAR</b>						
n (%)	1454 (81.7%)	3212 (82.6%)	1999 (88.6%)	6665 (84.1%)	1.01 (0.98,1.04)	1.08 (1.05,1.11)
<b>MI MNAR</b>						
n (%)	1484 (83.4%)	3369 (86.6%)	2023 (89.6%)	6876 (86.8%)	1.04 (1.01,1.06)	1.08 (1.05,1.10)

**Supplementary table 4: Sensitivity analysis for avoidance.**

<b>Because of your / other's experiences with complaints, have you ever displayed avoiding behaviour?</b>	<b>No complaint n=1780 (22.5%)</b>	<b>Past complaint n=3889 (49.1%)</b>	<b>Recent or current complaint n=2257 (28.5%)</b>	<b>Total n=7926 (100%)</b>	<b>Relative Risk for past complaint (95% CI)</b>	<b>Relative Risk for recent or current complaint (95% CI)</b>
Missings	242	1222	257	1721		
<b>Complete case</b>						
n (%)	705 (45.8%)	1137 (42.6%)	995 (49.8%)	2837 (45.7%)	0.93 (0.87,1.00)	1.09 (1.01,1.16)
<b>MAR</b>						
n (%)	820 (46.1%)	1668 (42.9%)	1124 (49.8%)	3612 (45.6%)	0.93 (0.87,1.00)	1.08 (1.00,1.17)
<b>MI MNAR</b>						
n (%)	947 (53.2%)	2359 (60.7%)	1252 (55.5%)	4558 (57.5%)	1.14 (1.08,1.20)	1.04 (0.98,1.10)

**Supplementary table 5: How doctors ranked the importance of different actions that might be taken to improve the complaints process might be improved (note these data are not imputed).**

	<b>Not at all n (%)</b>	<b>A little n (%)</b>	<b>To some extent n (%)</b>	<b>Quite a lot n (%)</b>	<b>A great deal n (%)</b>	<b>missing n</b>	<b>total n</b>
To allow the doctor to have more direct input into responses to patient complaints	245 (3.9%)	313 (5.0%)	2256 (35.8%)	1524 (24.2%)	1973 (31.3%)	3802	10113
To be given a clear written protocol for any process at the onset	217 (3.4%)	342 (5.4%)	1501 (23.8%)	1846 (29.3%)	2400 (38.1%)	3807	10113
To have strict adherence to a statutory timeframe for any complaint and investigation process	199 (3.2%)	402 (6.4%)	1599 (25.3%)	1732 (27.5%)	2379 (37.7%)	3803	10113
Brief colleagues about any complaint or investigation to ensure unambiguous internal communications	261 (4.2%)	440 (7.1%)	1816 (29.2%)	1972 (31.7%)	1733 (27.9%)	3891	10113
If a complaint from a clinical or managerial colleague was found to be vexatious then to have the option of having this investigated and possible disciplinary measures taken	152 (2.4%)	202 (3.2%)	1202 (19.3%)	1981 (31.8%)	2690 (43.2%)	3886	10113
If a complaint from a patient was found to be vexatious then to have the option to take action against that person	212 (3.4%)	434 (6.9%)	1296 (20.6%)	1528 (24.2%)	2837 (45.0%)	3806	10113
To set a limit to the time period when it is permitted to file multiple complaints relating to the same clinical incident or from the same person or persons	131 (2.1%)	260 (4.2%)	1315 (21.1%)	1855 (29.8%)	2668 (42.8%)	3884	10113
If the doctor is exonerated but has suffered financial loss during the process, then to have an avenue to make a claim for recovery of lost earnings or costs	64 (1.0%)	138 (2.2%)	785 (12.4%)	1872 (29.7%)	3455 (54.7%)	3799	10113
To have complete transparency of any management communication about the subject of a complaint by giving access to this to the doctor's representatives	59 (1.0%)	102 (2.2%)	757 (12.4%)	1770 (28.3%)	3559 (57.0%)	3866	10113
For all managers to demonstrate a full up to date knowledge of procedure in relation to complaints if they are made responsible for them	65 (1.0%)	107 (1.7%)	767 (12.3%)	1744 (28.0%)	3551 (57.0%)	3879	10113

The BMA and defence organisations should be more aggressive and less reactive to complaints in general	186 (3.0%)	447 (7.1%)	1601 (25.5%)	1465 (23.4%)	2575 (41.0%)	3839	10113
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