

Table S2: Infection Fatality Ratio and estimated total numbers of death: sensitivity analyses

Category	Individuals in population	SARS-CoV-2 Seroprevalence (95% CI)	Confirmed COVID-19 deaths	Excess all-cause deaths	Based on confirmed COVID-19 deaths	Based on excess all-cause deaths	Based on confirmed COVID-19 deaths ²	Based on excess all-cause deaths
Total	56,286,961	5.96% (5.70%, 6.75%)	48633	53857	1.43% (1.37%, 1.49%)	1.58% (1.51%, 1.65%)	3,402,491 (3,256,312; 3,548,671)	3,407,715 (3,261,536; 3,553,895)
Gender								
Male	27,827,831	6.17% (5.76%, 6.59%)	26787	28820	1.54% (1.43%, 1.64%)	1.65% (1.54%, 1.76%)	1,744,339 (1,628,814; 1,859,863)	1,746,372 (1,630,847; 1,861,896)
Female	28,459,130	5.75% (5.42%, 6.09%)	21840	25112	1.32% (1.24%, 1.39%)	1.51% (1.42%, 1.60%)	1,659,256 (1,564,410; 1,754,102)	1,662,528 (1,567,682; 1,757,374)
Age								
15-44	21,335,397	7.20% (6.73%, 7.66%)	524	550	0.03% (0.03%, 0.04%)	0.04% (0.03%, 0.04%)	1,535,884 (1,436,941; 1,634,826)	1,535,910 (1,436,967; 1,634,852)
45-64	14,405,759	6.18% (5.78%, 6.58%)	4657	6315	0.52% (0.49%, 0.55%)	0.70% (0.66%, 0.75%)	895,238 (837,231; 953,244)	896,896 (838,889; 954,902)
65-74	5,576,066	3.16% (2.67%, 3.66%)	7105	8288	3.87% (3.29%, 4.46%)	4.49% (3.81%, 5.16%)	183,510 (155,731; 211,289)	184,693 (156,914; 212,472)
75+	4,777,650	3.30% (2.53%, 4.08%)	36341	38779	18.71% (15.13%, 22.29%)	19.72% (15.99%, 23.45%)	194,220 (157,029; 231,411)	196,658 (159,467; 233,849)

Legend: Infection fatality ratios were calculated using confirmed all COVID-19 deaths and excess all-cause deaths (note: these results include care home residents). Data on COVID-19 deaths and excess all-cause deaths were obtained from <https://fingertips.phe.org.uk/static-reports/mortality-surveillance/excess-mortality-in-england-week-ending-17-Jul-2020.html>.