

Supplementary information

**Symptoms and risk factors for long COVID
in non-hospitalized adults**

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Supplementary Table 1: Baseline comorbidities of patients infected with SARS CoV-2 and propensity matched comparator cohort of patients with no recorded evidence of SARS CoV-2 infection

Comorbidities	Cohort of patients infected with SARS CoV-2 (n=486,149) N (%)	Comparator cohort (n=1,944,580) N (%)	Standardised differences
Cancer	21249 (4.37)	83079 (4.27)	0.005
Arrhythmia	34811 (7.16)	136280 (7.01)	0.006
AF	9609 (1.98)	37397 (1.92)	0.004
Hypertension	73901 (15.20)	291389 (14.98)	0.006
Heart Failure	4342 (0.89)	16699 (0.86)	0.004
IHD	13654 (2.81)	53003 (2.73)	0.005
Myocardial Infarction	6761 (1.39)	26290 (1.35)	0.003
Valvular Heart Disease	6168 (1.27)	24019 (1.24)	0.003
Cardiomyopathy	1241 (0.26)	4854 (0.25)	0.001
Congenital Heart Disease	2968 (0.61)	11898 (0.61)	0.000
PVD	4622 (0.95)	18188 (0.94)	0.002
Aortic Aneurysm	966 (0.20)	3756 (0.19)	0.001
TIA	4383 (0.90)	16652 (0.86)	0.005
Ischaemic Stroke	2426 (0.50)	9353 (0.48)	0.003
Haemorrhagic Stroke	1404 (0.29)	5559 (0.29)	0.001
Stroke Unspecified	3865 (0.80)	14847 (0.76)	0.004
Eczema	94313 (19.40)	378604 (19.47)	0.002
Psoriasis	19881 (4.09)	79206 (4.07)	0.001
Autoimmune Skin Conditions	6561 (1.35)	26426 (1.36)	0.001
Acne	66474 (13.67)	267760 (13.77)	0.003
Hay Fever	87691 (18.04)	352090 (18.11)	0.002
Chronic Sinusitis	8403 (1.73)	33231 (1.71)	0.002
Deafness	5405 (1.11)	21363 (1.10)	0.001
Blindness	2263 (0.47)	8825 (0.45)	0.002
Cataract	16844 (3.46)	64397 (3.31)	0.008
Glaucoma	5132 (1.06)	19804 (1.02)	0.004
AMD	3518 (0.72)	13548 (0.70)	0.003
Diabetic Retinopathy	13029 (2.68)	51141 (2.63)	0.003
Inflammatory Eye Disease	8312 (1.71)	33090 (1.70)	0.001
Peptic Ulcer	6599 (1.36)	25960 (1.33)	0.002
Inflammatory Bowel Disease	4736 (0.97)	18880 (0.97)	0.000
Irritable Bowel Syndrome	34226 (7.04)	136963 (7.04)	0.000
Hepatitis B	1394 (0.29)	5535 (0.28)	0.000
Hepatitis C	840 (0.17)	3147 (0.16)	0.003
Alcohol related chronic liver disease	884 (0.18)	3421 (0.18)	0.001
NAFLD	6155 (1.27)	24477 (1.26)	0.001
Chronic Liver Disease	13573 (2.79)	53899 (2.77)	0.001
Diverticular Disease	14235 (2.93)	55938 (2.88)	0.003

Coeliac Disease	2125 (0.44)	8553 (0.44)	0.000
Chronic Pancreatitis	375 (0.08)	1450 (0.07)	0.001
Endometriosis	7050 (1.45)	28035 (1.44)	0.001
PCOS	11963 (2.46)	47699 (2.45)	0.001
Low Haemoglobin	26040 (5.36)	102708 (5.28)	0.003
VTE	9467 (1.95)	37297 (1.92)	0.002
Coagulopathy	5490 (1.13)	21880 (1.13)	0.000
Pernicious Anaemia	1263 (0.26)	4964 (0.26)	0.001
Depression	107392 (22.09)	428797 (22.05)	0.001
Anxiety	98849 (20.33)	395365 (20.33)	0.000
Serious Mental Illness	5420 (1.11)	21044 (1.08)	0.003
Substance Misuse	8523 (1.75)	32482 (1.67)	0.006
Alcohol Misuse	24940 (5.13)	99002 (5.09)	0.002
ADHD	2521 (0.52)	10089 (0.52)	0.000
Eating Disorder	4353 (0.90)	17365 (0.89)	0.000
Learning Disability	4449 (0.92)	17907 (0.92)	0.001
Alzheimer's	3978 (0.82)	13604 (0.70)	0.014
Parkinson's disease	1036 (0.21)	3982 (0.20)	0.002
Vascular dementia	2092 (0.43)	6617 (0.34)	0.015
Migraine	53881 (11.08)	215733 (11.09)	0.000
Multiple Sclerosis	1033 (0.21)	4203 (0.22)	0.001
Epilepsy	7718 (1.59)	30524 (1.57)	0.001
Hemiplegia	726 (0.15)	2882 (0.15)	0.000
Chronic Fatigue Syndrome	1711 (0.35)	6716 (0.35)	0.001
Fibromyalgia	5109 (1.05)	20364 (1.05)	0.000
Cluster Headache	1717 (0.35)	6847 (0.35)	0.000
Osteoarthritis	53694 (11.04)	211062 (10.85)	0.006
Back pain	6956 (1.43)	27386 (1.41)	0.002
Fragility Fracture	46608 (9.59)	186194 (9.58)	0.000
Falls	39765 (8.18)	155875 (8.02)	0.006
Polymyalgia Rheumatica	2187 (0.45)	8319 (0.43)	0.003
Rheumatoid Arthritis	4144 (0.85)	16252 (0.84)	0.002
Raynaud's Disease	5361 (1.10)	21244 (1.09)	0.001
Sjogren's Syndrome	541 (0.11)	2184 (0.11)	0.000
SLE	601 (0.12)	2386 (0.12)	0.000
Systemic Sclerosis	158 (0.03)	620 (0.03)	0.000
Ankylosing Spondylitis	780 (0.16)	3067 (0.16)	0.001
Gout	14039 (2.89)	55919 (2.88)	0.001
CKD	14526 (2.99)	56107 (2.89)	0.006
Asthma	97509 (20.06)	390401 (20.08)	0.000
COPD	10938 (2.25)	42308 (2.18)	0.005
OSA	6988 (1.44)	28024 (1.44)	0.000
Other Pulmonary Disease	2631 (0.54)	10144 (0.52)	0.003
Hypothyroidism	21065 (4.33)	83404 (4.29)	0.002
Type 1 diabetes	2831 (0.58)	11150 (0.57)	0.001
Type 2 diabetes	32457 (6.68)	128050 (6.58)	0.004

AIDS	932 (0.19)	3731 (0.19)	0.000
BPH	6765 (1.39)	26293 (1.35)	0.003
Erectile Dysfunction	21336 (4.39)	84805 (4.36)	0.001

AF= Atrial Fibrillation, IHD=Ischaemic Heart Disease, PVD=Peripheral Vascular Disease, TIA=Transient Ischaemic Attack, AMD=Age-related Macular Degeneration, NAFLD=Non-Alcoholic Fatty Liver Disease, PCOS=Poly Cystic Ovarian Syndrome, VTE=Venous Thromboembolism, ADHD=Attention Deficit Hyperactivity Disorder, SLE=Systemic Lupus Erythematosus, CKD=Chronic Kidney Disease, COPD=Chronic Obstructive Pulmonary Disease, OSA=Obstructive Sleep Apnoea, AIDS=Acquired Immune Deficiency Syndrome, BPH=Benign Prostatic Hyperplasia; standardised difference of less than 0.1 indicates a relatively small imbalance

Supplementary Table 2: Recording of symptoms between 3 and 12 months prior to index date comparing between patients infected with SARS CoV-2 and propensity matched comparator cohort of patients with no recorded evidence of SARS CoV-2 infection

Domain	Symptom	Cohort of patients infected with SARS CoV-2 (n=486,149) N (%)	Comparator cohort (n=1,944,580) N (%)	Adjusted OR (95% CI)*
Breathing	Orthopnoea	38 (0.01)	124 (0.01)	1.21 (0.84-1.75)
	Paroxysmal nocturnal dyspnoea	26 (0.01)	91 (0.00)	1.11 (0.72-1.72)
	Shortness of breath	8132 (1.67)	31420 (1.62)	1.01 (0.99-1.04)
	Shortness of breath at rest	257 (0.05)	945 (0.05)	1.05 (0.92-1.21)
	Shortness of breath on exertion	7096 (1.46)	27472 (1.41)	1.01 (0.98-1.04)
	Tachypnoea	39 (0.01)	157 (0.01)	0.98 (0.69-1.39)
	Wheezing	2122 (0.44)	8224 (0.42)	1.02 (0.97-1.07)
Pain	Chest pain	8698 (1.79)	34551 (1.78)	0.99 (0.97-1.01)
	Neuropathic pain	977 (0.20)	3943 (0.20)	0.97 (0.91-1.04)
	Pain	73174 (15.05)	290921 (14.96)	0.99 (0.98-1.00)
	Pleuritic chest pain	323 (0.07)	1245 (0.06)	1.03 (0.91-1.16)
Circulation	Cold extremities	70 (0.01)	298 (0.02)	0.92 (0.71-1.20)
	Limb swelling	3308 (0.68)	12855 (0.66)	0.99 (0.96-1.03)
	Orthostatic hypotension	445 (0.09)	1472 (0.08)	1.16 (1.04-1.29)
	Palpitations	2577 (0.53)	10195 (0.52)	1.00 (0.96-1.05)
	Presyncope	181 (0.04)	738 (0.04)	0.97 (0.83-1.15)
	Tachycardia	646 (0.13)	2576 (0.13)	0.99 (0.91-1.08)
Fatigue	Fatigue	6327 (1.30)	24977 (1.28)	1.00 (0.98-1.03)
	Post exertional fatigue	0 (0.00)	0 (0.00)	
Cognitive health	Amnesia	1087 (0.22)	4132 (0.21)	1.00 (0.93-1.07)
	Brain fog	1494 (0.31)	5873 (0.30)	1.00 (0.94-1.06)
	Difficulty understanding	7 (0.00)	22 (0.00)	1.21 (0.52-2.84)
	Dysarthria	68 (0.01)	266 (0.01)	0.98 (0.75-1.28)
	Dysphasia	34 (0.01)	142 (0.01)	0.92 (0.63-1.34)
	Reading difficulty	1 (0.00)	2 (0.00)	1.89 (0.17-20.87)
Movement	Apraxia	61 (0.01)	242 (0.01)	0.98 (0.74-1.30)
	Balance difficulty	355 (0.07)	1325 (0.07)	1.02 (0.91-1.15)
	Tremors	434 (0.09)	1669 (0.09)	1.02 (0.92-1.14)
Sleep	Excessive sleep	41 (0.01)	145 (0.01)	1.12 (0.79-1.59)
	Insomnia	3650 (0.75)	14352 (0.74)	1.00 (0.97-1.04)
Ear, nose and throat	Anosmia	609 (0.13)	2307 (0.12)	1.05 (0.96-1.14)
	Cough	18224 (3.75)	71056 (3.65)	1.00 (0.99-1.02)
	Dysguesia	480 (0.10)	1827 (0.09)	1.04 (0.94-1.15)

	Dysphagia	1296 (0.27)	4893 (0.25)	1.03 (0.96-1.09)
	Ear pain	3895 (0.80)	15527 (0.80)	1.00 (0.96-1.03)
	Hearing loss	28 (0.01)	105 (0.01)	1.04 (0.68-1.58)
	Hoarse voice	616 (0.13)	2368 (0.12)	1.02 (0.94-1.12)
	Hyperacusis	15 (0.00)	62 (0.00)	0.95 (0.54-1.67)
	Nasal congestion	2352 (0.48)	9249 (0.48)	1.01 (0.96-1.05)
	Phlegm	3535 (0.73)	13744 (0.71)	1.00 (0.97-1.04)
	Sneezing	79 (0.02)	292 (0.02)	1.07 (0.83-1.37)
	Sore throat	11196 (2.30)	42052 (2.16)	1.06 (1.04-1.09)
	Tinnitus	1869 (0.38)	7463 (0.38)	0.99 (0.94-1.04)
Stomach and digestion	Abdominal pain	12486 (2.57)	49419 (2.54)	1.00 (0.98-1.02)
	Bloating	1210 (0.25)	4637 (0.24)	1.03 (0.97-1.10)
	Bowel incontinence	765 (0.16)	2424 (0.12)	1.20 (1.10-1.30)
	Constipation	3892 (0.80)	15154 (0.78)	1.00 (0.96-1.04)
	Diarrhoea	4205 (0.86)	16273 (0.84)	1.01 (0.98-1.05)
	Gastric reflux	3961 (0.81)	15656 (0.81)	1.00 (0.97-1.04)
	gastritis	1804 (0.37)	7161 (0.37)	0.99 (0.94-1.04)
	Nausea	1389 (0.29)	5374 (0.28)	1.02 (0.97-1.09)
	Vomiting	1678 (0.35)	6552 (0.34)	1.01 (0.95-1.06)
	Weight gain	384 (0.08)	1525 (0.08)	1.00 (0.90-1.12)
	Weight loss	1071 (0.22)	4057 (0.21)	1.01 (0.94-1.08)
Muscles and joints	Asthenia	239 (0.05)	910 (0.05)	1.01 (0.88-1.17)
	Joint pain	3265 (0.67)	12820 (0.66)	1.00 (0.97-1.04)
	Joint stiffness	36 (0.01)	152 (0.01)	0.94 (0.65-1.35)
	Muscle cramping	905 (0.19)	3498 (0.18)	1.02 (0.95-1.10)
	Muscle pain	1499 (0.31)	5854 (0.30)	1.02 (0.96-1.08)
	Muscle twitch	5 (0.00)	19 (0.00)	1.02 (0.38-2.72)
	Paraesthesia	1782 (0.37)	6942 (0.36)	1.02 (0.96-1.07)
Mental health	Anhedonia	1555 (0.32)	6204 (0.32)	0.98 (0.93-1.04)
	Anorexia	891 (0.18)	3366 (0.17)	1.02 (0.95-1.10)
	Anxiety	18670 (3.84)	74351 (3.82)	1.00 (0.99-1.02)
	Anxiety and depression	8190 (1.68)	32806 (1.69)	1.00 (0.98-1.03)
	Depression	18828 (3.87)	75291 (3.87)	1.00 (0.98-1.02)
	Increased appetite	39 (0.01)	158 (0.01)	0.98 (0.69-1.39)
	loneliness	114 (0.02)	443 (0.02)	1.00 (0.81-1.23)
	Mood swings	281 (0.06)	1093 (0.06)	1.01 (0.89-1.16)
	Post-traumatic stress disorder	116 (0.02)	455 (0.02)	1.04 (0.85-1.28)
Hair, skin and nails	Dry and scaly skin	684 (0.14)	2660 (0.14)	1.00 (0.92-1.09)
	Hair loss	1254 (0.26)	4892 (0.25)	1.03 (0.96-1.09)
	Hives	1075 (0.22)	4167 (0.21)	1.02 (0.96-1.09)
	Itchy skin	1815 (0.37)	7108 (0.37)	1.00 (0.95-1.05)
	Nail changes	1636 (0.34)	6593 (0.34)	0.98 (0.93-1.04)
	Purpura	82 (0.02)	329 (0.02)	0.97 (0.76-1.24)
	Rash	7979 (1.64)	31669 (1.63)	0.99 (0.97-1.02)
Eyes	Diplopia	325 (0.07)	1225 (0.06)	1.05 (0.93-1.18)

	Dry eye	906 (0.19)	3641 (0.19)	0.97 (0.90-1.05)
	Eye pain	240 (0.05)	969 (0.05)	0.98 (0.85-1.13)
	Flashing lights and floaters	140 (0.03)	542 (0.03)	1.03 (0.86-1.24)
	Itchy eyes	128 (0.03)	444 (0.02)	1.13 (0.93-1.38)
	Photophobia	53 (0.01)	197 (0.01)	1.08 (0.80-1.47)
	Red eye	2520 (0.52)	9882 (0.51)	0.99 (0.95-1.04)
	Watery eyes	134 (0.03)	523 (0.03)	1.00 (0.83-1.21)
Reproductive health	Ejaculation difficulty	89 (0.02)	329 (0.02)	1.07 (0.84-1.35)
	Erectile dysfunction	1543 (0.32)	6152 (0.32)	0.97 (0.92-1.03)
	Menorrhagia	2623 (0.54)	10374 (0.53)	1.01 (0.97-1.06)
	Menstrual changes	2532 (0.52)	9902 (0.51)	1.03 (0.99-1.08)
	Premenstrual syndrome	255 (0.05)	1044 (0.05)	0.98 (0.86-1.13)
	Vaginal discharge	4134 (0.85)	16480 (0.85)	1.01 (0.97-1.04)
	Vaginal dryness	191 (0.04)	797 (0.04)	0.94 (0.80-1.10)
	Anorgasm	3 (0.00)	8 (0.00)	1.62 (0.43-6.10)
	Reduced libido	136 (0.03)	520 (0.03)	1.04 (0.86-1.26)
Other symptoms	Allergies	4908 (1.01)	19148 (0.98)	1.02 (0.99-1.05)
	Angioedema	517 (0.11)	1953 (0.10)	1.05 (0.95-1.15)
	Body ache	755 (0.16)	2883 (0.15)	1.03 (0.95-1.12)
	Chills and shivering	121 (0.02)	411 (0.02)	
	Dizziness	3480 (0.72)	13754 (0.71)	0.99 (0.96-1.03)
	Dry mouth	246 (0.05)	950 (0.05)	1.01 (0.87-1.16)
	Fever	3315 (0.68)	12481 (0.64)	1.04 (1.00-1.09)
	Haemoptysis	322 (0.07)	1260 (0.06)	1.00 (0.89-1.14)
	Hallucinations	243 (0.05)	928 (0.05)	1.01 (0.88-1.16)
	Headache	12361 (2.54)	48501 (2.49)	1.01 (0.99-1.03)
	Hot flushes	789 (0.16)	3182 (0.16)	0.97 (0.90-1.05)
	Mouth ulcer	628 (0.13)	2483 (0.13)	1.00 (0.91-1.09)
	Neurasthenia	19 (0.00)	66 (0.00)	1.18 (0.71-1.97)
	Polydipsia	104 (0.02)	418 (0.02)	0.98 (0.79-1.22)
	Polyuria	2783 (0.57)	10927 (0.56)	1.00 (0.96-1.04)
	Seizures	695 (0.14)	2659 (0.14)	1.03 (0.94-1.12)
	Sweating	846 (0.17)	3386 (0.17)	0.99 (0.92-1.07)
	Swelling of lymph nodes	1406 (0.29)	5489 (0.28)	1.02 (0.97-1.09)
	Urinary incontinence	2190 (0.45)	8004 (0.41)	1.05 (1.00-1.11)
	Urinary retention	442 (0.09)	1719 (0.09)	0.98 (0.89-1.09)
Vertigo	2220 (0.46)	8715 (0.45)	1.00 (0.96-1.05)	

*Adjusted for age, sex, body mass index, smoking status, ethnicity and socioeconomic deprivation

Supplementary Table 3A: Recording of symptoms after twelve weeks from index date comparing between patients infected with SARS CoV-2 and propensity matched comparator cohort of patients with no recorded evidence of SARS CoV-2 infection

Domain	Symptom	Cohort of patients infected with SARS CoV-2 (n=384,137) N (%)	Comparator cohort (n=1,501,689) N (%)	Adjusted HR (95% CI)*
Composite Symptom outcome	Composite of symptoms in the definition for Long COVID from WHO report	20864 (5.43)	65293 (4.35)	1.26 (1.25-1.28)
	Composite of symptoms that were significantly associated with COVID-19 exposure after twelve weeks from index date	35705 (9.29)	110737 (7.37)	1.29 (1.28-1.31)
Breathing	Orthopnoea	10 (0.00)	41 (0.00)	1.07 (0.54-2.15)
	Paroxysmal nocturnal dyspnoea	3 (0.00)	23 (0.00)	0.60 (0.18-1.99)
	Shortness of breath	1615 (0.42)	5398 (0.36)	1.31 (1.24-1.38)
	Shortness of breath at rest	51 (0.01)	105 (0.01)	2.20 (1.57-3.08)
	Shortness of breath on exertion	1406 (0.37)	4905 (0.33)	1.26 (1.18-1.33)
	Tachypnoea	4 (0.00)	16 (0.00)	1.00 (0.33-2.99)
	Wheezing	410 (0.11)	1164 (0.08)	1.42 (1.27-1.59)
Pain	Chest pain	1821 (0.47)	5096 (0.34)	1.42 (1.35-1.50)
	Neuropathic pain	76 (0.02)	345 (0.02)	0.86 (0.67-1.11)
	Pain	14958 (3.89)	47694 (3.18)	1.25 (1.23-1.27)
	Pleuritic chest pain	73 (0.02)	157 (0.01)	1.86 (1.41-2.46)
Circulation	Cold extremities	30 (0.01)	87 (0.01)	1.40 (0.92-2.12)
	Limb swelling	674 (0.18)	2398 (0.16)	1.25 (1.15-1.36)
	Orthostatic hypotension	95 (0.02)	342 (0.02)	1.24 (0.99-1.56)
	Palpitations	682 (0.18)	1738 (0.12)	1.53 (1.40-1.67)
	Presyncope	27 (0.01)	169 (0.01)	0.70 (0.47-1.06)
	Tachycardia	172 (0.04)	481 (0.03)	1.44 (1.21-1.72)
Fatigue	Fatigue	1754 (0.46)	3559 (0.24)	1.92 (1.81-2.03)
	Post exertional fatigue	0 (0.00)	0 (0.00)	
Cognitive health	Amnesia	201 (0.05)	839 (0.06)	1.05 (0.90-1.22)
	Brain fog	221 (0.06)	627 (0.04)	1.37 (1.17-1.59)
	Difficulty understanding	4 (0.00)	12 (0.00)	1.27 (0.41-3.94)
	Dysarthria	19 (0.00)	67 (0.00)	1.28 (0.77-2.13)
	Dysphasia	11 (0.00)	33 (0.00)	1.43 (0.72-2.85)
	Reading difficulty	0 (0.00)	0 (0.00)	
Movement	Apraxia	15 (0.00)	55 (0.00)	1.12 (0.63-1.99)

	Balance difficulty	61 (0.02)	262 (0.02)	1.05 (0.80-1.39)
	Tremors	104 (0.03)	395 (0.03)	1.12 (0.90-1.39)
Sleep	Excessive sleep	6 (0.00)	37 (0.00)	0.65 (0.27-1.54)
	Insomnia	746 (0.19)	2190 (0.15)	1.34 (1.23-1.46)
Ear, nose and throat	Anosmia	153 (0.04)	95 (0.01)	6.49 (5.02-8.39)
	Cough	2127 (0.55)	6126 (0.41)	1.44 (1.37-1.51)
	Dysgeusia	42 (0.01)	180 (0.01)	0.97 (0.69-1.36)
	Dysphagia	334 (0.09)	864 (0.06)	1.60 (1.41-1.82)
	Ear pain	606 (0.16)	2044 (0.14)	1.16 (1.06-1.27)
	Hearing loss	11 (0.00)	33 (0.00)	1.52 (0.77-3.02)
	Hoarse voice	125 (0.03)	295 (0.02)	1.78 (1.44-2.20)
	Hyperacusis	2 (0.00)	11 (0.00)	0.67 (0.15-3.05)
	Nasal congestion	396 (0.10)	1165 (0.08)	1.34 (1.20-1.50)
	Phlegm	429 (0.11)	1390 (0.09)	1.33 (1.19-1.48)
	Sneezing	14 (0.00)	20 (0.00)	2.77 (1.40-5.50)
	Sore throat	359 (0.09)	1365 (0.09)	1.02 (0.91-1.15)
	Tinnitus	195 (0.05)	824 (0.05)	0.92 (0.78-1.07)
Stomach and digestion	Abdominal pain	2442 (0.64)	7818 (0.52)	1.21 (1.16-1.27)
	Bloating	270 (0.07)	814 (0.05)	1.31 (1.14-1.50)
	Bowel incontinence	185 (0.05)	432 (0.03)	1.58 (1.33-1.88)
	Constipation	829 (0.22)	2856 (0.19)	1.20 (1.11-1.30)
	Diarrhoea	693 (0.18)	2240 (0.15)	1.29 (1.19-1.41)
	Gastric reflux	736 (0.19)	2778 (0.18)	1.05 (0.96-1.13)
	gastritis	333 (0.09)	1112 (0.07)	1.20 (1.07-1.36)
	Nausea	309 (0.08)	891 (0.06)	1.37 (1.20-1.56)
	Vomiting	369 (0.10)	995 (0.07)	1.48 (1.31-1.67)
	Weight gain	96 (0.02)	292 (0.02)	1.27 (1.01-1.61)
	Weight loss	278 (0.07)	854 (0.06)	1.34 (1.17-1.53)
Muscles and joints	Asthenia	57 (0.01)	163 (0.01)	1.45 (1.07-1.96)
	Joint pain	659 (0.17)	2133 (0.14)	1.23 (1.13-1.35)
	Joint stiffness	10 (0.00)	28 (0.00)	1.51 (0.73-3.12)
	Muscle cramping	152 (0.04)	574 (0.04)	1.08 (0.90-1.29)
	Muscle pain	310 (0.08)	1082 (0.07)	1.13 (0.99-1.28)
	Muscle twitch	3 (0.00)	3 (0.00)	3.37 (0.68-16.82)
	Paraesthesia	418 (0.11)	1241 (0.08)	1.34 (1.20-1.50)
Mental health	Anhedonia	209 (0.05)	598 (0.04)	1.36 (1.16-1.59)
	Anorexia	174 (0.05)	566 (0.04)	1.28 (1.08-1.52)
	Anxiety	3732 (0.97)	12583 (0.84)	1.12 (1.08-1.16)
	Anxiety and depression	1705 (0.44)	6182 (0.41)	1.05 (1.00-1.11)
	Depression	3441 (0.90)	12117 (0.81)	1.09 (1.05-1.13)
	Increased appetite	5 (0.00)	30 (0.00)	0.68 (0.26-1.75)
	loneliness	7 (0.00)	59 (0.00)	0.49 (0.22-1.06)
	Mood swings	60 (0.02)	199 (0.01)	1.14 (0.86-1.53)
	Post-traumatic stress disorder	27 (0.01)	137 (0.01)	0.76 (0.50-1.15)
	Dry and scaly skin	186 (0.05)	577 (0.04)	1.30 (1.10-1.53)

Hair, skin and nails	Hair loss	869 (0.23)	825 (0.05)	3.99 (3.63-4.39)
	Hives	168 (0.04)	545 (0.04)	1.18 (0.99-1.40)
	Itchy skin	358 (0.09)	1098 (0.07)	1.34 (1.19-1.51)
	Nail changes	298 (0.08)	970 (0.06)	1.20 (1.05-1.37)
	Purpura	15 (0.00)	57 (0.00)	1.06 (0.60-1.87)
	Rash	1495 (0.39)	4790 (0.32)	1.24 (1.17-1.32)
Eyes	Diplopia	77 (0.02)	244 (0.02)	1.29 (1.00-1.67)
	Dry eye	217 (0.06)	700 (0.05)	1.28 (1.10-1.49)
	Eye pain	49 (0.01)	157 (0.01)	1.22 (0.88-1.68)
	Flashing lights and floaters	35 (0.01)	140 (0.01)	1.02 (0.70-1.48)
	Itchy eyes	21 (0.01)	50 (0.00)	1.68 (1.01-2.79)
	Photophobia	12 (0.00)	22 (0.00)	2.07 (1.02-4.19)
	Red eye	358 (0.09)	1089 (0.07)	1.34 (1.19-1.51)
	Watery eyes	16 (0.00)	53 (0.00)	1.25 (0.71-2.18)
Reproductive health	Ejaculation difficulty	28 (0.01)	39 (0.00)	2.63 (1.61-4.28)
	Erectile dysfunction	284 (0.07)	921 (0.06)	1.26 (1.10-1.44)
	Menorrhagia	490 (0.13)	1527 (0.10)	1.18 (1.07-1.31)
	Menstrual changes	525 (0.14)	1916 (0.13)	0.99 (0.90-1.09)
	Premenstrual syndrome	43 (0.01)	182 (0.01)	0.86 (0.61-1.19)
	Vaginal discharge	987 (0.26)	2894 (0.19)	1.26 (1.17-1.35)
	Vaginal dryness	34 (0.01)	133 (0.01)	1.03 (0.71-1.51)
	Anorgasm	0 (0.00)	2 (0.00)	
	Reduced libido	42 (0.01)	69 (0.00)	2.36 (1.61-3.47)
Other symptoms	Allergies	694 (0.18)	2042 (0.14)	1.30 (1.19-1.42)
	Angioedema	89 (0.02)	305 (0.02)	1.15 (0.91-1.46)
	Body ache	162 (0.04)	431 (0.03)	1.46 (1.22-1.75)
	Chills and shivering	15 (0.00)	46 (0.00)	1.36 (0.76-2.44)
	Dizziness	753 (0.20)	2527 (0.17)	1.23 (1.13-1.33)
	Dry mouth	67 (0.02)	179 (0.01)	1.56 (1.18-2.07)
	Fever	357 (0.09)	839 (0.06)	1.75 (1.54-1.98)
	Haemoptysis	64 (0.02)	192 (0.01)	1.39 (1.05-1.85)
	Hallucinations	44 (0.01)	181 (0.01)	1.01 (0.72-1.40)
	Headache	2654 (0.69)	7812 (0.52)	1.30 (1.24-1.35)
	Hot flushes	153 (0.04)	407 (0.03)	1.52 (1.27-1.84)
	Mouth ulcer	140 (0.04)	335 (0.02)	1.60 (1.32-1.95)
	Neurasthenia	2 (0.00)	25 (0.00)	0.30 (0.07-1.28)
	Polydipsia	27 (0.01)	77 (0.01)	1.36 (0.88-2.11)
	Polyuria	512 (0.13)	1664 (0.11)	1.27 (1.15-1.40)
	Seizures	132 (0.03)	484 (0.03)	1.05 (0.87-1.28)
	Sweating	158 (0.04)	562 (0.04)	1.09 (0.91-1.30)
	Swelling of lymph nodes	135 (0.04)	429 (0.03)	1.18 (0.97-1.44)
	Urinary incontinence	505 (0.13)	1520 (0.10)	1.37 (1.24-1.52)
	Urinary retention	113 (0.03)	312 (0.02)	1.59 (1.28-1.97)
Vertigo	428 (0.11)	1536 (0.10)	1.15 (1.03-1.28)	

*Adjusted for age, sex, body mass index, smoking status, ethnicity, socioeconomic deprivation and symptom recorded at baseline between 3 and 12 months prior to index date

Supplementary Table 3B: Number of recorded of symptoms after twelve weeks from the index date comparing patients infected with SARS CoV-2 and propensity matched comparator cohort of patients with no recorded evidence of SARS CoV-2 infection

Number of recorded symptoms after twelve weeks from the index date	Cohort of patients infected with SARS CoV-2 (n=384,137) N (%)	Comparator cohort (n=1,501,689) N (%)
0	330,044 (85.92)	1,328,051 (88.44)
1	21,473 (5.59)	70,562 (4.70)
2	13,808 (3.59)	43,334 (2.89)
3	10,367 (2.70)	32,652 (2.17)
4	5,378 (1.40)	17,693 (1.18)
5	1,752 (0.46)	5,541 (0.37)
6 or more	1,315 (0.34)	3,856 (0.26)

Supplementary Table 4: Recording of symptoms during the first four weeks after index date comparing between patients infected with SARS CoV-2 and propensity matched comparator cohort of patients no recorded evidence of SARS CoV-2 infection

Domain	Symptom	Cohort of patients infected with SARS CoV-2 (n=486,149) N (%)	Comparator cohort (n=1,944,580) N (%)	Adjusted HR (95% CI)*
Breathing	Orthopnoea	11 (0.00)	23 (0.00)	1.50 (0.69-3.28)
	Paroxysmal nocturnal dyspnoea	3 (0.00)	2 (0.00)	6.20 (1.03-37.18)
	Shortness of breath	5564 (1.14)	3245 (0.17)	6.03 (5.76-6.31)
	Shortness of breath at rest	440 (0.09)	78 (0.00)	19.75 (15.35-25.40)
	Shortness of breath on exertion	4507 (0.93)	2899 (0.15)	5.41 (5.15-5.68)
	Tachypnoea	23 (0.00)	11 (0.00)	6.91 (3.28-14.53)
	Wheezing	352 (0.07)	827 (0.04)	1.56 (1.37-1.78)
Pain	Chest pain	2657 (0.55)	3400 (0.17)	2.91 (2.76-3.07)
	Neuropathic pain	85 (0.02)	325 (0.02)	1.04 (0.81-1.33)
	Pain	16645 (3.42)	37941 (1.95)	1.63 (1.60-1.66)
	Pleuritic chest pain	224 (0.05)	113 (0.01)	7.36 (5.82-9.31)
Circulation	Cold extremities	14 (0.00)	53 (0.00)	1.05 (0.57-1.93)
	Limb swelling	341 (0.07)	1274 (0.07)	1.05 (0.92-1.18)
	Orthostatic hypotension	163 (0.03)	167 (0.01)	2.84 (2.24-3.60)
	Palpitations	523 (0.11)	1301 (0.07)	1.58 (1.42-1.76)
	Presyncope	33 (0.01)	103 (0.01)	1.20 (0.79-1.82)
	Tachycardia	262 (0.05)	260 (0.01)	3.86 (3.23-4.61)
Fatigue	Fatigue	3410 (0.70)	2274 (0.12)	5.65 (5.35-5.97)
	Post exertional fatigue	0 (0.00)	0 (0.00)	
Cognitive health	Amnesia	123 (0.03)	390 (0.02)	1.14 (0.92-1.41)
	Brain fog	134 (0.03)	503 (0.03)	1.05 (0.87-1.28)
	Difficulty understanding	3 (0.00)	4 (0.00)	2.95 (0.66-13.25)
	Dysarthria	18 (0.00)	28 (0.00)	1.27 (0.60-2.70)
	Dysphasia	5 (0.00)	18 (0.00)	0.42 (0.10-1.84)
	Reading difficulty	0 (0.00)	0 (0.00)	
Movement	Apraxia	10 (0.00)	41 (0.00)	0.96 (0.48-1.92)
	Balance difficulty	35 (0.01)	129 (0.01)	0.91 (0.61-1.35)
	Tremors	75 (0.02)	254 (0.01)	1.12 (0.86-1.47)
Sleep	Excessive sleep	2 (0.00)	15 (0.00)	0.55 (0.13-2.42)
	Insomnia	617 (0.13)	1775 (0.09)	1.38 (1.26-1.52)
Ear, nose and throat	Anosmia	3303 (0.68)	106 (0.01)	107.42 (88.16-130.89)
	Cough	11999 (2.47)	4179 (0.21)	9.96 (9.60-10.33)
	Dysgeusia	2726 (0.56)	90 (0.00)	111.13 (89.05-138.70)

	Dysphagia	243 (0.05)	532 (0.03)	1.64 (1.39-1.92)
	Ear pain	610 (0.13)	1617 (0.08)	1.46 (1.32-1.60)
	Hearing loss	0 (0.00)	14 (0.00)	
	Hoarse voice	63 (0.01)	158 (0.01)	1.41 (1.03-1.93)
	Hyperacusis	2 (0.00)	5 (0.00)	1.64 (0.32-8.45)
	Nasal congestion	333 (0.07)	772 (0.04)	1.65 (1.45-1.89)
	Phlegm	2260 (0.46)	891 (0.05)	8.64 (7.96-9.37)
	Sneezing	7 (0.00)	21 (0.00)	1.33 (0.56-3.12)
	Sore throat	2441 (0.50)	1852 (0.10)	4.66 (4.36-4.97)
	Tinnitus	138 (0.03)	636 (0.03)	0.84 (0.70-1.02)
Stomach and digestion	Abdominal pain	1602 (0.33)	6057 (0.31)	0.99 (0.94-1.05)
	Bloating	109 (0.02)	573 (0.03)	0.73 (0.59-0.90)
	Bowel incontinence	83 (0.02)	239 (0.01)	1.15 (0.88-1.49)
	Constipation	759 (0.16)	1808 (0.09)	1.55 (1.42-1.70)
	Diarrhoea	1245 (0.26)	1582 (0.08)	2.95 (2.73-3.19)
	Gastric reflux	564 (0.12)	2003 (0.10)	1.10 (1.00-1.21)
	gastritis	273 (0.06)	788 (0.04)	1.30 (1.12-1.50)
	Nausea	612 (0.13)	662 (0.03)	3.58 (3.19-4.01)
	Vomiting	573 (0.12)	682 (0.04)	2.99 (2.66-3.36)
	Weight gain	37 (0.01)	200 (0.01)	0.78 (0.55-1.11)
	Weight loss	229 (0.05)	520 (0.03)	1.66 (1.41-1.95)
Muscles and joints	Asthenia	123 (0.03)	79 (0.00)	5.47 (4.08-7.34)
	Joint pain	274 (0.06)	1381 (0.07)	0.79 (0.69-0.90)
	Joint stiffness	0 (0.00)	22 (0.00)	
	Muscle cramping	82 (0.02)	384 (0.02)	0.81 (0.64-1.04)
	Muscle pain	1430 (0.29)	859 (0.04)	6.14 (5.62-6.70)
	Muscle twitch	0 (0.00)	2 (0.00)	
	Paraesthesia	205 (0.04)	798 (0.04)	1.03 (0.88-1.21)
Mental health	Anhedonia	123 (0.03)	487 (0.03)	1.02 (0.83-1.24)
	Anorexia	461 (0.09)	358 (0.02)	4.48 (3.88-5.18)
	Anxiety	3264 (0.67)	13138 (0.68)	0.97 (0.93-1.00)
	Anxiety and depression	1464 (0.30)	6833 (0.35)	0.84 (0.79-0.89)
	Depression	2844 (0.59)	12740 (0.66)	0.87 (0.84-0.91)
	Increased appetite	3 (0.00)	18 (0.00)	0.67 (0.20-2.26)
	loneliness	13 (0.00)	49 (0.00)	1.18 (0.64-2.18)
	Mood swings	18 (0.00)	125 (0.01)	0.52 (0.31-0.87)
	Post-traumatic stress disorder	26 (0.01)	126 (0.01)	0.75 (0.48-1.18)
Hair, skin and nails	Dry and scaly skin	81 (0.02)	287 (0.01)	1.14 (0.88-1.46)
	Hair loss	136 (0.03)	579 (0.03)	0.91 (0.75-1.10)
	Hives	183 (0.04)	458 (0.02)	1.49 (1.25-1.78)
	Itchy skin	228 (0.05)	764 (0.04)	1.19 (1.02-1.39)
	Nail changes	133 (0.03)	623 (0.03)	0.84 (0.69-1.01)
	Purpura	10 (0.00)	34 (0.00)	1.38 (0.67-2.83)
	Rash	1121 (0.23)	3226 (0.17)	1.37 (1.27-1.47)
Eyes	Diplopia	51 (0.01)	127 (0.01)	1.56 (1.12-2.18)

	Dry eye	73 (0.02)	420 (0.02)	0.70 (0.54-0.89)
	Eye pain	34 (0.01)	97 (0.00)	1.30 (0.87-1.95)
	Flashing lights and floaters	17 (0.00)	66 (0.00)	0.99 (0.57-1.71)
	Itchy eyes	11 (0.00)	35 (0.00)	1.32 (0.67-2.62)
	Photophobia	15 (0.00)	22 (0.00)	2.61 (1.33-5.14)
	Red eye	258 (0.05)	729 (0.04)	1.36 (1.18-1.58)
	Watery eyes	5 (0.00)	33 (0.00)	0.66 (0.25-1.69)
Reproductive health	Ejaculation difficulty	14 (0.00)	33 (0.00)	1.55 (0.81-2.96)
	Erectile dysfunction	142 (0.03)	594 (0.03)	0.90 (0.75-1.09)
	Menorrhagia	280 (0.06)	1147 (0.06)	0.94 (0.82-1.07)
	Menstrual changes	323 (0.07)	1443 (0.07)	0.89 (0.79-1.00)
	Premenstrual syndrome	23 (0.00)	141 (0.01)	0.64 (0.41-1.01)
	Vaginal discharge	381 (0.08)	2027 (0.10)	0.77 (0.69-0.86)
	Vaginal dryness	18 (0.00)	74 (0.00)	1.03 (0.61-1.72)
	Anorgasm	0 (0.00)	2 (0.00)	0.39 (0.09-1.68)
	Reduced libido	10 (0.00)	46 (0.00)	0.87 (0.44-1.72)
Other symptoms	Allergies	284 (0.06)	1044 (0.05)	1.06 (0.92-1.21)
	Angioedema	63 (0.01)	207 (0.01)	1.20 (0.90-1.59)
	Body ache	203 (0.04)	277 (0.01)	2.64 (2.18-3.19)
	Chills and shivering	85 (0.02)	20 (0.00)	
	Dizziness	626 (0.13)	1628 (0.08)	1.48 (1.34-1.63)
	Dry mouth	60 (0.01)	110 (0.01)	2.14 (1.55-2.96)
	Fever	4795 (0.99)	508 (0.03)	30.22 (27.49-33.22)
	Haemoptysis	287 (0.06)	119 (0.01)	7.76 (6.21-9.69)
	Hallucinations	30 (0.01)	124 (0.01)	0.85 (0.55-1.31)
	Headache	9463 (1.95)	5799 (0.30)	5.65 (5.46-5.85)
	Hot flushes	43 (0.01)	311 (0.02)	0.55 (0.40-0.77)
	Mouth ulcer	104 (0.02)	222 (0.01)	1.86 (1.46-2.36)
	Neurasthenia	2 (0.00)	10 (0.00)	0.61 (0.12-3.21)
	Polydipsia	18 (0.00)	37 (0.00)	2.01 (1.12-3.60)
	Polyuria	391 (0.08)	1122 (0.06)	1.33 (1.18-1.49)
	Seizures	148 (0.03)	357 (0.02)	1.38 (1.12-1.69)
	Sweating	111 (0.02)	351 (0.02)	1.18 (0.95-1.48)
	Swelling of lymph nodes	124 (0.03)	327 (0.02)	1.33 (1.07-1.67)
	Urinary incontinence	267 (0.05)	875 (0.04)	1.14 (0.99-1.32)
	Urinary retention	148 (0.03)	162 (0.01)	2.28 (1.76-2.95)
	Vertigo	287 (0.06)	988 (0.05)	1.14 (1.00-1.31)

*Adjusted for age, sex, body mass index, smoking status, ethnicity, socioeconomic deprivation and symptom recorded at baseline between 3 and 12 months prior to index date

Supplementary Table 5: Recording of symptoms between four and twelve weeks after index date comparing between patients infected with SARS CoV-2 and propensity matched comparator cohort of patients no recorded evidence of SARS CoV-2 infection

Domain	Symptom	Cohort of patients infected with SARS CoV-2 (n=472,660) N (%)	Comparator cohort (n=1,888,003) N (%)	Adjusted HR (95% CI)*
Breathing	Orthopnoea	14 (0.00)	44 (0.00)	1.33 (0.73-2.44)
	Paroxysmal nocturnal dyspnoea	8 (0.00)	17 (0.00)	1.89 (0.81-4.39)
	Shortness of breath	2203 (0.47)	5633 (0.30)	1.64 (1.56-1.73)
	Shortness of breath at rest	76 (0.02)	139 (0.01)	2.26 (1.71-2.99)
	Shortness of breath on exertion	1881 (0.40)	5035 (0.27)	1.58 (1.50-1.67)
	Tachypnoea	16 (0.00)	22 (0.00)	2.94 (1.54-5.61)
	Wheezing	505 (0.11)	1398 (0.07)	1.45 (1.31-1.61)
Pain	Chest pain	2636 (0.56)	6092 (0.32)	1.73 (1.65-1.81)
	Neuropathic pain	142 (0.03)	565 (0.03)	1.00 (0.83-1.21)
	Pain	19413 (4.11)	64582 (3.42)	1.21 (1.19-1.23)
	Pleuritic chest pain	126 (0.03)	166 (0.01)	3.04 (2.41-3.83)
Circulation	Cold extremities	33 (0.01)	94 (0.00)	1.43 (0.96-2.12)
	Limb swelling	808 (0.17)	2420 (0.13)	1.41 (1.30-1.53)
	Orthostatic hypotension	126 (0.03)	322 (0.02)	1.62 (1.32-1.99)
	Palpitations	942 (0.20)	2282 (0.12)	1.65 (1.53-1.78)
	Presyncope	41 (0.01)	143 (0.01)	1.19 (0.84-1.68)
	Tachycardia	259 (0.05)	564 (0.03)	1.85 (1.60-2.15)
Fatigue	Fatigue	2264 (0.48)	4268 (0.23)	2.12 (2.02-2.23)
	Post exertional fatigue	0 (0.00)	1 (0.00)	
Cognitive health	Amnesia	255 (0.05)	762 (0.04)	1.36 (1.18-1.57)
	Brain fog	329 (0.07)	932 (0.05)	1.38 (1.21-1.56)
	Difficulty understanding	2 (0.00)	18 (0.00)	0.45 (0.10-1.94)
	Dysarthria	18 (0.00)	68 (0.00)	1.12 (0.66-1.88)
	Dysphasia	10 (0.00)	28 (0.00)	1.56 (0.76-3.22)
	Reading difficulty	0 (0.00)	0 (0.00)	
Movement	Apraxia	18 (0.00)	65 (0.00)	1.14 (0.68-1.93)
	Balance difficulty	67 (0.01)	228 (0.01)	1.20 (0.91-1.57)
	Tremors	129 (0.03)	448 (0.02)	1.18 (0.97-1.44)
Sleep	Excessive sleep	10 (0.00)	45 (0.00)	0.87 (0.44-1.74)
	Insomnia	1097 (0.23)	3168 (0.17)	1.37 (1.28-1.47)
Ear, nose and throat	Anosmia	192 (0.04)	128 (0.01)	5.96 (4.77-7.46)
	Cough	3363 (0.71)	7000 (0.37)	1.95 (1.88-2.04)
	Dysgeusia	106 (0.02)	96 (0.01)	4.36 (3.31-5.75)

	Dysphagia	355 (0.08)	976 (0.05)	1.46 (1.29-1.65)
	Ear pain	758 (0.16)	2765 (0.15)	1.09 (1.00-1.18)
	Hearing loss	6 (0.00)	20 (0.00)	1.14 (0.46-2.85)
	Hoarse voice	114 (0.02)	354 (0.02)	1.32 (1.07-1.63)
	Hyperacusis	3 (0.00)	16 (0.00)	0.68 (0.20-2.37)
	Nasal congestion	447 (0.09)	1437 (0.08)	1.24 (1.12-1.38)
	Phlegm	590 (0.12)	1424 (0.08)	1.71 (1.55-1.88)
	Sneezing	11 (0.00)	27 (0.00)	1.61 (0.80-3.25)
	Sore throat	771 (0.16)	3139 (0.17)	0.92 (0.85-1.00)
	Tinnitus	357 (0.08)	1176 (0.06)	1.22 (1.08-1.37)
Stomach and digestion	Abdominal pain	2882 (0.61)	10267 (0.54)	1.11 (1.07-1.16)
	Bloating	276 (0.06)	987 (0.05)	1.12 (0.98-1.28)
	Bowel incontinence	180 (0.04)	463 (0.02)	1.43 (1.20-1.70)
	Constipation	1059 (0.22)	3225 (0.17)	1.33 (1.24-1.43)
	Diarrhoea	801 (0.17)	2610 (0.14)	1.25 (1.15-1.35)
	Gastric reflux	975 (0.21)	3328 (0.18)	1.17 (1.09-1.25)
	gastritis	462 (0.10)	1309 (0.07)	1.40 (1.26-1.56)
	Nausea	346 (0.07)	1125 (0.06)	1.23 (1.09-1.39)
	Vomiting	404 (0.09)	1169 (0.06)	1.39 (1.24-1.55)
	Weight gain	82 (0.02)	357 (0.02)	0.91 (0.72-1.16)
	Weight loss	399 (0.08)	976 (0.05)	1.63 (1.45-1.83)
Muscles and joints	Asthenia	79 (0.02)	166 (0.01)	1.90 (1.46-2.49)
	Joint pain	755 (0.16)	2560 (0.14)	1.18 (1.09-1.28)
	Joint stiffness	11 (0.00)	43 (0.00)	1.02 (0.53-1.99)
	Muscle cramping	187 (0.04)	690 (0.04)	1.08 (0.92-1.27)
	Muscle pain	487 (0.10)	1385 (0.07)	1.40 (1.26-1.55)
	Muscle twitch	0 (0.00)	2 (0.00)	
	Paraesthesia	461 (0.10)	1488 (0.08)	1.24 (1.12-1.38)
Mental health	Anhedonia	344 (0.07)	923 (0.05)	1.45 (1.28-1.64)
	Anorexia	196 (0.04)	590 (0.03)	1.34 (1.14-1.57)
	Anxiety	5483 (1.16)	19550 (1.04)	1.10 (1.07-1.13)
	Anxiety and depression	2584 (0.55)	9962 (0.53)	1.02 (0.98-1.07)
	Depression	5042 (1.07)	19020 (1.01)	1.05 (1.02-1.08)
	Increased appetite	15 (0.00)	41 (0.00)	1.47 (0.82-2.67)
	loneliness	8 (0.00)	48 (0.00)	0.77 (0.36-1.63)
	Mood swings	72 (0.02)	264 (0.01)	1.08 (0.83-1.40)
	Post-traumatic stress disorder	38 (0.01)	188 (0.01)	0.80 (0.57-1.14)
Hair, skin and nails	Dry and scaly skin	199 (0.04)	535 (0.03)	1.50 (1.27-1.76)
	Hair loss	609 (0.13)	1066 (0.06)	2.26 (2.05-2.50)
	Hives	210 (0.04)	717 (0.04)	1.16 (0.99-1.35)
	Itchy skin	424 (0.09)	1280 (0.07)	1.34 (1.20-1.49)
	Nail changes	368 (0.08)	1118 (0.06)	1.31 (1.17-1.48)
	Purpura	16 (0.00)	61 (0.00)	1.10 (0.63-1.91)
	Rash	1717 (0.36)	5768 (0.31)	1.20 (1.14-1.26)
Eyes	Diplopia	65 (0.01)	249 (0.01)	1.05 (0.80-1.38)

	Dry eye	194 (0.04)	735 (0.04)	1.08 (0.92-1.26)
	Eye pain	53 (0.01)	163 (0.01)	1.28 (0.94-1.74)
	Flashing lights and floaters	45 (0.01)	146 (0.01)	1.26 (0.90-1.76)
	Itchy eyes	32 (0.01)	53 (0.00)	2.43 (1.56-3.77)
	Photophobia	12 (0.00)	39 (0.00)	1.21 (0.63-2.32)
	Red eye	392 (0.08)	1216 (0.06)	1.30 (1.16-1.46)
	Watery eyes	23 (0.00)	77 (0.00)	1.20 (0.75-1.92)
Reproductive health	Ejaculation difficulty	23 (0.00)	53 (0.00)	1.65 (1.01-2.69)
	Erectile dysfunction	381 (0.08)	1069 (0.06)	1.41 (1.26-1.59)
	Menorrhagia	593 (0.13)	2132 (0.11)	1.09 (0.99-1.19)
	Menstrual changes	732 (0.15)	2603 (0.14)	1.10 (1.01-1.19)
	Premenstrual syndrome	55 (0.01)	220 (0.01)	0.98 (0.73-1.31)
	Vaginal discharge	1254 (0.27)	3829 (0.20)	1.28 (1.20-1.37)
	Vaginal dryness	39 (0.01)	134 (0.01)	1.20 (0.84-1.72)
	Anorgasm	0 (0.00)	7 (0.00)	
	Reduced libido	46 (0.01)	107 (0.01)	1.69 (1.20-2.39)
Other symptoms	Allergies	670 (0.14)	2333 (0.12)	1.16 (1.06-1.26)
	Angioedema	116 (0.02)	369 (0.02)	1.26 (1.02-1.55)
	Body ache	200 (0.04)	516 (0.03)	1.52 (1.29-1.79)
	Chills and shivering	16 (0.00)	60 (0.00)	1.07 (0.62-1.86)
	Dizziness	840 (0.18)	2905 (0.15)	1.18 (1.09-1.27)
	Dry mouth	73 (0.02)	198 (0.01)	1.52 (1.16-1.98)
	Fever	497 (0.11)	944 (0.05)	2.12 (1.90-2.37)
	Haemoptysis	105 (0.02)	243 (0.01)	1.73 (1.38-2.17)
	Hallucinations	60 (0.01)	187 (0.01)	1.31 (0.98-1.75)
	Headache	3118 (0.66)	10031 (0.53)	1.23 (1.18-1.28)
	Hot flushes	150 (0.03)	500 (0.03)	1.21 (1.01-1.46)
	Mouth ulcer	141 (0.03)	393 (0.02)	1.43 (1.18-1.74)
	Neurasthenia	3 (0.00)	20 (0.00)	0.60 (0.18-2.01)
	Polydipsia	22 (0.00)	91 (0.00)	0.96 (0.61-1.54)
	Polyuria	632 (0.13)	2001 (0.11)	1.28 (1.17-1.40)
	Seizures	183 (0.04)	583 (0.03)	1.25 (1.06-1.48)
	Sweating	201 (0.04)	679 (0.04)	1.18 (1.01-1.38)
	Swelling of lymph nodes	192 (0.04)	586 (0.03)	1.28 (1.09-1.51)
	Urinary incontinence	567 (0.12)	1686 (0.09)	1.36 (1.24-1.49)
	Urinary retention	128 (0.03)	361 (0.02)	1.44 (1.17-1.76)
Vertigo	482 (0.10)	1768 (0.09)	1.11 (1.00-1.23)	

*Adjusted for age, sex, body mass index, smoking status, ethnicity, socioeconomic deprivation and symptom recorded at baseline between 3 and 12 months prior to index date

Supplementary Table 6: Comorbidity related risk factors associated with the development of Long COVID (WHO definition)

Risk factor	Sample size [N = 384,137]	Long COVID symptoms [N=29,869] (7.78) n (%)	Unadjusted HR (95% CI)	Adjusted HR* (95% CI)
Comorbidities at baseline				
COPD	8040	1741 (21.65)	2.71 (2.58-2.85)	1.55 (1.47-1.64)
BPH	4961	596 (12.01)	1.39 (1.28-1.51)	1.39 (1.28-1.52)
Fibromyalgia	4031	900 (22.33)	3.17 (2.97-3.39)	1.37 (1.28-1.47)
Anxiety	77753	10481 (13.48)	2.17 (2.12-2.23)	1.35 (1.31-1.39)
Erectile Dysfunction	16678	1551 (9.30)	1.15 (1.09-1.21)	1.33 (1.26-1.41)
Depression	83903	11222 (13.37)	2.22 (2.17-2.27)	1.31 (1.27-1.34)
Migraine	43043	5597 (13.00)	1.88 (1.83-1.94)	1.26 (1.22-1.30)
Multiple Sclerosis	791	98 (12.39)	1.52 (1.25-1.85)	1.26 (1.03-1.53)
Coeliac Disease	1669	207 (12.40)	1.58 (1.38-1.81)	1.25 (1.09-1.43)
Learning Disability	3283	295 (8.99)	1.22 (1.09-1.37)	1.24 (1.11-1.40)
SLE	485	68 (14.02)	1.94 (1.53-2.46)	1.24 (0.97-1.58)
Chronic Pancreatitis	276	50 (18.12)	2.07 (1.57-2.73)	1.23 (0.93-1.63)
IBS	27492	3691 (13.43)	1.84 (1.78-1.91)	1.20 (1.15-1.24)
Endometriosis	5727	800 (13.97)	1.92 (1.79-2.06)	1.19 (1.11-1.28)
Low Hb	20039	2683 (13.39)	1.78 (1.71-1.85)	1.18 (1.13-1.23)
Ankylosing Spondylitis	630	63 (10.00)	1.31 (1.03-1.68)	1.18 (0.92-1.51)
Deafness	3767	514 (13.64)	1.53 (1.40-1.67)	1.16 (1.06-1.27)
Hepatitis C	633	74 (11.69)	1.43 (1.14-1.80)	1.16 (0.92-1.46)
Eating disorder	3488	504 (14.45)	1.92 (1.75-2.09)	1.16 (1.06-1.27)
Substance Misuse	6449	775 (12.02)	1.69 (1.58-1.82)	1.15 (1.07-1.23)
Back pain	5483	718 (13.10)	1.76 (1.64-1.90)	1.15 (1.07-1.24)
Asthma	76946	8527 (11.08)	1.59 (1.55-1.63)	1.15 (1.12-1.18)
Chronic Sinusitis	6838	873 (12.77)	1.63 (1.52-1.74)	1.14 (1.07-1.22)
PCOS	9599	1166 (12.15)	1.73 (1.63-1.84)	1.14 (1.07-1.21)
Coagulopathy	4336	505 (11.65)	1.49 (1.36-1.63)	1.14 (1.04-1.25)
Hemiplegia	512	62 (12.11)	1.25 (0.97-1.60)	1.14 (0.88-1.46)
Falls	28946	3811 (13.17)	1.59 (1.53-1.64)	1.14 (1.09-1.18)
Raynaud's	4241	501 (11.81)	1.53 (1.40-1.67)	1.14 (1.03-1.27)
Systemic Sclerosis	116	15 (12.93)	1.75 (1.06-2.91)	1.14 (0.68-1.90)
AIDS	708	62 (8.76)	1.12 (0.87-1.43)	1.14 (0.89-1.47)
IHD	9837	1372 (13.95)	1.60 (1.52-1.69)	1.13 (1.06-1.21)
Cardiomyopathy	925	107 (11.57)	1.44 (1.20-1.75)	1.12 (0.92-1.36)
Inflammatory Bowel Disease	3799	414 (10.90)	1.37 (1.24-1.51)	1.12 (1.02-1.23)
All Chronic Liver Disease	10624	1322 (12.44)	1.65 (1.56-1.75)	1.12 (1.03-1.21)
Diverticular Disease	10610	1441 (13.58)	1.60 (1.52-1.69)	1.12 (1.06-1.19)

ADHD	1935	165 (8.53)	1.23 (1.05-1.43)	1.12 (0.96-1.30)
Polymyalgia Rheumatica	1499	237 (15.81)	1.79 (1.57-2.03)	1.12 (0.99-1.28)
Hay fever	70648	6879 (9.74)	1.36 (1.33-1.40)	1.11 (1.08-1.14)
Peptic Ulcer	4968	670 (13.49)	1.54 (1.43-1.67)	1.11 (1.02-1.20)
NAFLD	4837	632 (13.07)	1.80 (1.66-1.94)	1.11 (0.99-1.24)
Parkinson's	638	84 (13.17)	1.25 (1.01-1.54)	1.10 (0.89-1.37)
Unspecified Stroke	2576	384 (14.91)	1.49 (1.35-1.65)	1.09 (0.98-1.22)
Autoimmune Skin Conditions	5200	482 (9.27)	1.22 (1.11-1.33)	1.09 (0.99-1.19)
Cataract	11608	1571 (13.53)	1.47 (1.40-1.55)	1.09 (1.02-1.16)
VTE	7035	925 (13.15)	1.52 (1.42-1.62)	1.09 (1.02-1.17)
Cluster Headache	1359	166 (12.21)	1.63 (1.40-1.90)	1.09 (0.93-1.27)
Myocardial Infarction	4795	624 (13.01)	1.47 (1.35-1.59)	1.08 (0.99-1.18)
Chronic Fatigue Syndrome	1365	224 (16.41)	2.07 (1.82-2.36)	1.08 (0.95-1.24)
Osteoarthritis	41007	4848 (11.82)	1.47 (1.42-1.51)	1.08 (1.04-1.12)
Arrhythmia	24962	3151 (12.62)	1.42 (1.36-1.47)	1.07 (1.02-1.13)
TIA	3052	452 (14.81)	1.56 (1.42-1.71)	1.07 (0.97-1.18)
OSA	5538	628 (11.34)	1.47 (1.36-1.59)	1.07 (0.99-1.17)
Acne	53994	4841 (8.97)	1.18 (1.15-1.22)	1.06 (1.03-1.10)
Alcohol Misuse	19593	1925 (9.82)	1.24 (1.19-1.30)	1.06 (1.01-1.11)
AF	6557	880 (13.42)	1.38 (1.29-1.47)	1.05 (0.97-1.14)
AMD	2347	347 (14.78)	1.50 (1.35-1.66)	1.05 (0.94-1.17)
Epilepsy	5842	586 (10.03)	1.25 (1.15-1.35)	1.05 (0.96-1.14)
Valvular Heart Disease	4451	584 (13.12)	1.45 (1.33-1.57)	1.04 (0.96-1.14)
Eczema	75272	6942 (9.22)	1.23 (1.20-1.26)	1.04 (1.01-1.07)
Psoriasis	15764	1487 (9.43)	1.23 (1.17-1.30)	1.04 (0.99-1.10)
Hypertension	56002	5696 (10.17)	1.25 (1.22-1.29)	1.03 (0.99-1.06)
Congenital Heart Disease	2374	223 (9.39)	1.19 (1.05-1.36)	1.03 (0.90-1.17)
Aortic Aneurysm	657	86 (13.09)	1.36 (1.10-1.68)	1.03 (0.83-1.28)
Inflammatory Eye Disease	6528	636 (9.74)	1.19 (1.10-1.29)	1.02 (0.94-1.10)
Heart failure	2930	461 (15.73)	1.61 (1.47-1.77)	1.01 (0.92-1.12)
Alcoholic Liver disease	655	87 (13.28)	1.62 (1.31-2.00)	1.01 (0.80-1.26)
Haemorrhagic Stroke	985	109 (11.07)	1.17 (0.97-1.42)	1.00 (0.82-1.20)
Blindness	1512	202 (13.36)	1.40 (1.22-1.61)	1.00 (0.86-1.15)
Fragility Fracture	35823	3254 (9.08)	1.09 (1.05-1.13)	1.00 (0.96-1.04)
Gout	10838	949 (8.76)	1.02 (0.96-1.09)	1.00 (0.94-1.07)
Type 1 diabetes	2234	198 (8.86)	1.08 (0.94-1.25)	1.00 (0.87-1.16)
Cancer	15856	1671 (10.54)	1.21 (1.16-1.28)	0.99 (0.94-1.05)
Ischaemic Stroke	1624	218 (13.42)	1.34 (1.17-1.53)	0.99 (0.86-1.14)

Other Pulmonary Disease	1888	310 (16.42)	1.84 (1.64-2.06)	0.99 (0.88-1.11)
Hypothyroidism	16202	1822 (11.25)	1.42 (1.35-1.49)	0.99 (0.94-1.04)
Type 2 diabetes	24500	2547 (10.40)	1.26 (1.21-1.31)	0.99 (0.94-1.05)
Glaucoma	3694	402 (10.88)	1.20 (1.09-1.32)	0.98 (0.88-1.08)
Hepatitis B	1124	83 (7.38)	1.05 (0.84-1.30)	0.98 (0.79-1.22)
Hyperthyroidism	4039	435 (10.77)	1.35 (1.23-1.48)	0.98 (0.89-1.08)
CKD	9820	1288 (13.12)	1.34 (1.26-1.41)	0.97 (0.91-1.03)
Serious Mental Illness	3891	518 (13.31)	1.51 (1.39-1.65)	0.96 (0.88-1.05)
PVD	3426	418 (12.20)	1.47 (1.33-1.62)	0.94 (0.84-1.06)
Sjogren's Syndrome	433	60 (13.86)	1.71 (1.33-2.20)	0.94 (0.73-1.22)
Rheumatoid Arthritis	3180	379 (11.92)	1.39 (1.26-1.54)	0.92 (0.83-1.02)
Diabetic Retinopathy	9778	992 (10.15)	1.18 (1.11-1.25)	0.91 (0.84-0.98)
Pernicious Anaemia	974	137 (14.07)	1.63 (1.38-1.93)	0.91 (0.77-1.09)
Vascular Dementia	1148	148 (12.89)	1.00 (0.85-1.17)	0.91 (0.75-1.10)
Alzheimer's disease	2214	250 (11.29)	0.93 (0.82-1.06)	0.88 (0.74-1.04)
Dementia Unspecified	4901	574 (11.71)	0.98 (0.90-1.06)	0.76 (0.67-0.86)

*Adjusted hazard ratios estimated using a Cox proportional hazards model, adjusting for age, sex, ethnic group, socioeconomic status, index year, vaccination status, symptoms recorded before COVID-19, and comorbidities.

COPD=chronic obstructive pulmonary disease, BPH=benign prostatic hyperplasia, SLE=systemic lupus erythematosus, IBS = irritable bowel syndrome, AIDS= acquired immune deficiency syndrome, IHD=ischaemic heart disease, PCOS=poly cystic ovarian syndrome, NAFLD=non-alcoholic fatty liver disease, VTE = venous thromboembolism, ADHD= attention deficit hyperactivity disorder, TIA=transient ischaemic attack, OSA=obstructive sleep apnoea, AF=atrial fibrillation, AMD=age-related macular degeneration, CKD=chronic kidney disease, PVD=peripheral vascular disease

Supplementary Table 7: Risk factors associated with the development of Long COVID (definition based on a composite of significantly different symptoms between patients infected with SARS CoV-2 and propensity matched comparator cohort of patients no recorded evidence of SARS CoV-2 infection)

Risk factor	Sample size [N=384,137]	Long COVID symptoms [n=50,832] (7.78) n (%)	Unadjusted HR (95% CI)	Adjusted HR* (95% CI)
Sex				
<i>Men</i>	171593	16477 (9.60)	Ref	Ref
<i>Women</i>	212544	34355 (16.16)	1.72 (1.69-1.76)	1.47 (1.44-1.50)
Age (years)				
<i>18-29</i>	95969	10937 (11.40)	Ref	Ref
<i>30 - 39</i>	78302	9495 (12.13)	1.18 (1.15-1.21)	0.99 (0.96-1.02)
<i>40 - 49</i>	75349	9716 (12.89)	1.22 (1.19-1.25)	0.98 (0.95-1.01)
<i>50 - 59</i>	73262	9900 (13.51)	1.25 (1.22-1.28)	0.94 (0.91-0.97)
<i>60 - 69</i>	35932	5239 (14.58)	1.33 (1.29-1.37)	0.91 (0.87-0.94)
<i>≥70</i>	25323	5545 (21.90)	1.70 (1.65-1.76)	0.94 (0.89-0.99)
Ethnicity				
<i>White</i>	246717	34488 (13.98)	Ref	Ref
<i>Asians</i>	47788	6437 (13.47)	0.91 (0.84-0.98)	0.97 (0.90-1.05)
<i>Black</i>	15846	1883 (11.88)	1.05 (0.97-1.13)	1.23 (1.14-1.33)
<i>Mixed</i>	5976	695 (11.63)	1.04 (0.99-1.09)	1.10 (1.05-1.16)
<i>Other</i>	5438	711 (13.07)	0.98 (0.96-1.01)	1.09 (1.06-1.13)
<i>Missing</i>	62372	6618 (10.61)	0.74 (0.72-0.76)	0.91 (0.89-0.94)
Body mass index (kg/m²)				
<i><18.5</i>	10312	1260 (12.22)	0.91 (0.86-0.97)	0.94 (0.89-1.00)
<i>18.5-25</i>	117630	14878 (12.65)	Ref	Ref
<i>25-30</i>	109707	14837 (13.52)	1.09 (1.06-1.11)	1.07 (1.04-1.09)
<i>>30</i>	95799	15725 (16.41)	1.33 (1.30-1.36)	1.12 (1.10-1.15)
<i>Missing</i>	50689	4132 (8.15)	0.63 (0.61-0.65)	0.90 (0.87-0.94)
Smoking status				
<i>Non-Smoker</i>	141967	16786 (11.82)	Ref	Ref
<i>Ex-Smoker</i>	139294	21076 (15.13)	1.31 (1.28-1.34)	1.06 (1.04-1.09)
<i>Current Smoker</i>	85765	11742 (13.69)	1.26 (1.23-1.29)	1.08 (1.06-1.11)
<i>Missing</i>	17111	1228 (7.18)	0.59 (0.55-0.62)	0.89 (0.84-0.95)
Socioeconomic status quintile (IMD)				
<i>1 (least deprived)</i>	66564	7801 (11.72)	Ref	Ref
<i>2</i>	68657	8478 (12.35)	1.05 (1.02-1.08)	3.71 (3.60-3.82)
<i>3</i>	70699	9220 (13.04)	1.13 (1.10-1.16)	1.00 (1.00-1.00)
<i>4</i>	84002	11176 (13.30)	1.16 (1.13-1.20)	1.02 (0.99-1.05)
<i>5 (most deprived)</i>	87270	13045 (14.95)	1.25 (1.22-1.29)	1.05 (1.02-1.08)
<i>Missing</i>	6945	1112 (16.01)	1.30 (1.22-1.38)	1.05 (1.02-1.08)

Symptoms recorded before COVID-19	78880	19735 (25.02)	2.41 (2.37-2.45)	1.76 (1.73-1.79)
Comorbidities				
Systemic Sclerosis	116	26 (22.41)	2.05 (1.40-3.01)	1.47 (1.00-2.16)
Anxiety	77753	16684 (21.46)	2.01 (1.98-2.05)	1.38 (1.35-1.41)
Erectile Dysfunction	16678	2832 (16.98)	1.26 (1.21-1.31)	1.34 (1.28-1.40)
Back pain	5483	1334 (24.33)	2.00 (1.90-2.12)	1.31 (1.24-1.39)
BPH	4961	1031 (20.78)	1.47 (1.38-1.56)	1.30 (1.22-1.39)
COPD	8040	2380 (29.60)	2.22 (2.13-2.32)	1.25 (1.19-1.30)
Learning Disability	3283	509 (15.50)	1.27 (1.16-1.39)	1.24 (1.13-1.36)
Ankylosing Spondylitis	630	113 (17.94)	1.42 (1.18-1.71)	1.24 (1.03-1.49)
Migraine	43043	8714 (20.24)	1.71 (1.67-1.75)	1.21 (1.18-1.24)
IBS	27492	5924 (21.55)	1.76 (1.71-1.80)	1.19 (1.16-1.22)
Fibromyalgia	4031	1249 (30.98)	2.62 (2.47-2.77)	1.19 (1.12-1.26)
Chronic Sinusitis	6838	1462 (21.38)	1.64 (1.55-1.72)	1.18 (1.12-1.24)
Endometriosis	5727	1272 (22.21)	1.84 (1.74-1.94)	1.18 (1.12-1.25)
Depression	83903	17428 (20.77)	1.97 (1.93-2.00)	1.18 (1.15-1.21)
Osteoarthritis	41007	8832 (21.54)	1.66 (1.63-1.70)	1.18 (1.15-1.21)
Hepatitis C	633	125 (19.75)	1.48 (1.24-1.76)	1.17 (0.98-1.39)
All Chronic Liver Disease	10624	2248 (21.16)	1.70 (1.63-1.77)	1.17 (1.10-1.25)
Falls	28946	6556 (22.65)	1.69 (1.65-1.73)	1.17 (1.14-1.21)
Coeliac Disease	1669	323 (19.35)	1.45 (1.30-1.62)	1.16 (1.04-1.30)
Autoimmune Skin Conditions	5200	845 (16.25)	1.26 (1.18-1.35)	1.15 (1.07-1.23)
Low Hb	20039	4365 (21.78)	1.74 (1.68-1.79)	1.15 (1.11-1.18)
Substance Misuse	6449	1227 (19.03)	1.59 (1.51-1.69)	1.15 (1.08-1.22)
Multiple Sclerosis	791	154 (19.47)	1.43 (1.22-1.68)	1.15 (0.98-1.35)
Hemiplegia	512	108 (21.09)	1.37 (1.13-1.65)	1.15 (0.95-1.40)
PCOS	9599	1842 (19.19)	1.62 (1.54-1.69)	1.14 (1.09-1.20)
ADHD	1935	266 (13.75)	1.16 (1.03-1.30)	1.14 (1.01-1.28)
Cluster Headache	1359	277 (20.38)	1.62 (1.44-1.83)	1.14 (1.01-1.29)
AIDS	708	105 (14.83)	1.13 (0.93-1.37)	1.14 (0.94-1.38)
VTE	7035	1586 (22.54)	1.60 (1.52-1.68)	1.13 (1.07-1.19)
Hay fever	70648	11440 (16.19)	1.33 (1.30-1.36)	1.12 (1.10-1.15)
Coagulopathy	4336	830 (19.14)	1.47 (1.38-1.58)	1.12 (1.05-1.20)
Eating disorder	3488	737 (21.13)	1.67 (1.55-1.79)	1.12 (1.04-1.21)
SLE	485	105 (21.65)	1.77 (1.46-2.14)	1.12 (0.92-1.36)
Chronic Pancreatitis	276	73 (26.45)	1.84 (1.46-2.31)	1.11 (0.88-1.40)
Arrhythmia	24962	5490 (21.99)	1.53 (1.49-1.57)	1.10 (1.07-1.14)
Haemorrhagic Stroke	985	203 (20.61)	1.37 (1.19-1.57)	1.10 (0.96-1.26)
Deafness	3767	857 (22.75)	1.58 (1.47-1.69)	1.10 (1.02-1.18)
Diverticular Disease	10610	2452 (23.11)	1.67 (1.60-1.73)	1.10 (1.06-1.15)

Polymyalgia Rheumatica	1499	402 (26.82)	1.87 (1.69-2.06)	1.10 (0.99-1.21)
Asthma	76946	13430 (17.45)	1.44 (1.42-1.47)	1.10 (1.08-1.13)
Acne	53994	7902 (14.63)	1.12 (1.10-1.15)	1.09 (1.06-1.12)
Peptic Ulcer	4968	1114 (22.42)	1.57 (1.48-1.67)	1.09 (1.03-1.16)
Inflammatory Bowel Disease	3799	669 (17.61)	1.32 (1.22-1.43)	1.09 (1.01-1.18)
OSA	5538	1071 (19.34)	1.51 (1.43-1.61)	1.09 (1.02-1.15)
Blindness	1512	371 (24.54)	1.62 (1.46-1.79)	1.08 (0.97-1.20)
Inflammatory Eye Disease	6528	1162 (17.80)	1.31 (1.23-1.38)	1.08 (1.02-1.14)
Eczema	75272	11698 (15.54)	1.22 (1.20-1.25)	1.07 (1.04-1.09)
Alcohol Misuse	19593	3264 (16.66)	1.25 (1.20-1.29)	1.07 (1.03-1.11)
Raynaud's	4241	801 (18.89)	1.45 (1.35-1.55)	1.07 (0.98-1.17)
Valvular Heart Disease	4451	997 (22.40)	1.53 (1.44-1.63)	1.06 (1.00-1.14)
TIA	3052	759 (24.87)	1.65 (1.53-1.77)	1.06 (0.98-1.14)
Chronic Fatigue Syndrome	1365	333 (24.40)	1.83 (1.65-2.04)	1.06 (0.95-1.19)
IHD	9837	2245 (22.82)	1.60 (1.53-1.67)	1.05 (1.00-1.11)
Ischaemic Stroke	1624	398 (24.51)	1.56 (1.42-1.73)	1.05 (0.95-1.17)
Psoriasis	15764	2520 (15.99)	1.23 (1.19-1.28)	1.05 (1.00-1.09)
AMD	2347	603 (25.69)	1.64 (1.51-1.78)	1.05 (0.96-1.14)
Parkinson's disease	638	147 (23.04)	1.37 (1.17-1.61)	1.05 (0.89-1.23)
Gout	10838	1769 (16.32)	1.15 (1.09-1.20)	1.05 (1.00-1.10)
Cardiomyopathy	925	174 (18.81)	1.41 (1.21-1.63)	1.04 (0.89-1.21)
Cataract	11608	2712 (23.36)	1.59 (1.53-1.65)	1.04 (0.99-1.09)
Serious Mental Illness	3891	895 (23.00)	1.61 (1.50-1.72)	1.04 (0.98-1.12)
Epilepsy	5842	984 (16.84)	1.26 (1.19-1.35)	1.04 (0.98-1.11)
Type 2 diabetes	24500	4688 (19.13)	1.42 (1.38-1.46)	1.04 (1.00-1.08)
Hypertension	56002	10151 (18.13)	1.37 (1.34-1.40)	1.03 (1.00-1.06)
Hypothyroidism	16202	3204 (19.78)	1.51 (1.46-1.57)	1.03 (0.99-1.07)
Heart failure	2930	783 (26.72)	1.70 (1.58-1.82)	1.02 (0.95-1.11)
Myocardial Infarction	4795	1007 (21.00)	1.43 (1.35-1.52)	1.02 (0.95-1.10)
NAFLD	4837	1039 (21.48)	1.77 (1.67-1.89)	1.02 (0.94-1.11)
AF	6557	1523 (23.23)	1.48 (1.41-1.56)	1.01 (0.95-1.07)
PVD	3426	715 (20.87)	1.53 (1.42-1.64)	1.01 (0.92-1.10)
Unspecified Stroke	2576	629 (24.42)	1.52 (1.41-1.65)	1.01 (0.93-1.10)
Fragility Fracture	35823	5510 (15.38)	1.10 (1.07-1.14)	1.01 (0.98-1.04)
Cancer	15856	2943 (18.56)	1.30 (1.25-1.35)	1.00 (0.97-1.04)
Congenital Heart Disease	2374	363 (15.29)	1.14 (1.03-1.27)	1.00 (0.90-1.12)
Alcoholic Liver disease	655	153 (23.36)	1.70 (1.45-1.99)	1.00 (0.84-1.19)
Alzheimer's disease	2214	542 (24.48)	1.31 (1.21-1.43)	1.00 (0.89-1.12)
Hyperthyroidism	4039	753 (18.64)	1.39 (1.29-1.49)	1.00 (0.93-1.07)

Glaucoma	3694	739 (20.01)	1.37 (1.27-1.47)	0.99 (0.92-1.07)
Vascular Dementia	1148	308 (26.83)	1.35 (1.20-1.51)	0.99 (0.86-1.13)
Chronic Kidney Disease	9820	2319 (23.62)	1.51 (1.45-1.58)	0.99 (0.95-1.04)
Other Pulmonary Disease	1888	477 (25.26)	1.73 (1.58-1.90)	0.99 (0.90-1.09)
Rheumatoid Arthritis	3180	665 (20.91)	1.50 (1.39-1.62)	0.98 (0.90-1.05)
Type 1 diabetes	2234	341 (15.26)	1.12 (1.00-1.24)	0.98 (0.88-1.10)
Diabetic Retinopathy	9778	1893 (19.36)	1.38 (1.32-1.45)	0.97 (0.91-1.03)
Aortic Aneurysm	657	139 (21.16)	1.34 (1.13-1.58)	0.96 (0.81-1.13)
Pernicious Anaemia	974	236 (24.23)	1.70 (1.50-1.94)	0.95 (0.83-1.08)
Hepatitis B	1124	143 (12.72)	1.06 (0.90-1.25)	0.93 (0.79-1.10)
Sjogren's Syndrome	433	95 (21.94)	1.68 (1.37-2.05)	0.90 (0.73-1.10)
Dementia Unspecified	4901	1174 (23.95)	1.29 (1.21-1.36)	0.83 (0.76-0.92)

*Adjusted hazard ratios estimated using a Cox proportional hazards model, adjusting for age, sex, ethnic group, socioeconomic status, index year, vaccination status, symptoms recorded before COVID-19, and comorbidities.

IMD=Index of Multiple Deprivation, BPH=benign prostatic hyperplasia, COPD=chronic obstructive pulmonary disease, IBS = irritable bowel syndrome, PCOS=poly cystic ovarian syndrome, ADHD=attention deficit hyperactivity disorder, AIDS= acquired immune deficiency syndrome, VTE = venous thromboembolism, SLE=systemic lupus erythematosus, OSA=obstructive sleep apnoea, TIA=transient ischaemic attack, IHD=ischaemic heart disease, AMD=age-related macular degeneration, NAFLD=non-alcoholic fatty liver disease, AF=atrial fibrillation, PVD=peripheral vascular disease, CKD=chronic kidney disease

Supplementary Table 8: Consolidation of 115 symptoms into 50 symptoms to be included as indicators in latent class analysis

Consolidation of symptom codes were performed as follows

Step 1: Restriction to symptoms that were significantly associated with a history of SARS CoV-2 infection after 12 weeks of infection

Step 2: Consolidation of symptoms by combining or including symptoms:

- (a) that are likely to fall under a single umbrella of symptom,
- (b) that have mutually inclusive Snomed CT code lists,
- (c) that are likely to be presented similarly and thereby potentially misclassified

Symptom	Consolidated Symptom
Shortness of breath	Shortness of breath (1)
Shortness of breath at rest	
Shortness of breath on exertion	
Tachypnoea	
Wheezing	Wheezing (2)
Chest pain	Chest pain (3)
Pleuritic chest pain	
Limb swelling	Limb swelling (4)
Palpitations	Palpitations / Tachycardia (5)
Tachycardia	
Presyncope	Presyncope / dizziness (6)
Dizziness	
Fatigue	Fatigue / asthenia (7)
Post exertional fatigue	
Asthenia	
Neurasthenia	
Amnesia	Cognitive problems (8)
Brain fog	
Difficulty understanding	
Reading difficulty	
Insomnia	Insomnia (9)
Anosmia	Anosmia (10)
Cough	Cough (11)
Dysphagia	Dysphagia (12)
Ear pain	Ear pain (13)
Hoarse voice	Hoarse voice (14)
Nasal congestion	Nasal congestion / Sneezing (15)
Sneezing	
Phlegm	Phlegm (16)
Abdominal pain	Abdominal pain (17)
Bloating	Bloating (18)
Bowel incontinence	Bowel incontinence (19)
Constipation	Constipation (20)

Diarrhoea	Diarrhoea (21)
Gastric reflux	Gastric reflux (22)
gastritis	
Nausea	Nausea / Vomiting (23)
Vomiting	
Weight loss	Weight loss (24)
Joint pain	Joint pain (25)
Paraesthesia	Paraesthesia (26)
Anorexia	Anorexia (27)
Anhedonia	Anxiety / depression (28)
Anxiety	
Anxiety and depression	
Depression	
Dry and scaly skin	Dry and scaly skin (29)
Hair loss	Hair loss (30)
Hives	Hives / Itchy skin (31)
Itchy skin	
Nail changes	Nail changes (32)
Purpura	Purpura / rash (33)
Rash	
Dry eye	Dry eye (34)
Red eye	Red/ watery eye (35)
Watery eyes	
Ejaculation difficulty	Sexual dysfunction (36)
Erectile dysfunction	
Anorgasm	
Reduced libido	
Menorrhagia	Menorrhagia (37)
Vaginal discharge	Vaginal discharge (38)
Allergies	Allergies / angioedema (39)
Angioedema	
Body ache	Body ache (40)
Chills and shivering	Chills and fever (41)
Fever	
Dry mouth	Dry mouth (42)
Haemoptysis	Haemoptysis (43)
Headache	Headache (44)
Hot flushes	Hot flushes (45)
Mouth ulcer	Mouth ulcer (46)
Polyuria	Polyuria (47)
Urinary incontinence	Urinary incontinence (48)
Urinary retention	Urinary retention (49)
Vertigo	Vertigo (0)

Supplementary Table 9A: Predicted latent class membership (model posterior probability)

Class	Dominant symptoms within the class	Predicted class membership
Class 1	Broad spectrum of symptoms including pain, fatigue and rash	80.0%
Class 2	Cough, shortness of breath and phlegm	5.8%
Class 3	Anxiety, depression and brain fog	14.2%

Supplementary Table 9B: item-response probabilities (ρ) of the symptom items conditional on latent class membership

Symptoms (Items)	Rho (ρ): item-response probabilities conditional on latent class membership		
	Class 1	Class 2	Class 3
Shortness of breath	0.0308	0.2881	0.0034
Wheezing	0.0033	0.1409	0.0000
Chest pain	0.0564	0.0351	0.0081
Limb swelling	0.0221	0.0197	0.0010
Palpitations	0.0268	0.0069	0.0057
Presyncope/dizziness	0.0247	0.0107	0.0036
Fatigue	0.0585	0.0318	0.0190
Cognitive problems	0.0038	0.0054	0.0443
Insomnia	0.0149	0.0065	0.0571
Anosmia	0.0044	0.0072	0.0007
Cough	0.0211	0.7103	0.0043
Dysphagia	0.0100	0.0074	0.0006
Ear pain	0.0196	0.0049	0.0040
Hoarse voice	0.0036	0.0055	0.0004
Nasal congestion/sneezing	0.0129	0.0152	0.0014
Phlegm	0.0001	0.1989	0.0000
Abdominal pain	0.0818	0.0145	0.0093
Bloating	0.0090	0.0013	0.0006
Bowel incontinence	0.0053	0.0013	0.0000
Constipation	0.0252	0.0110	0.0037
Diarrhoea	0.0222	0.0126	0.0045
Gastric reflux	0.0193	0.0168	0.0070
Nausea/vomiting	0.0179	0.0105	0.0030
Weight loss	0.0088	0.0034	0.0025
Joint pain	0.0227	0.0032	0.0039
Paraesthesia	0.0139	0.0047	0.0011
Anxiety/depression	0.0470	0.0459	1.0000

Anorexia	0.0040	0.0052	0.0066
Dry/scaly skin	0.0062	0.0000	0.0002
Hair loss	0.0303	0.0026	0.0039
Hives/itchy skin	0.0136	0.0099	0.0020
Nail changes	0.0105	0.0019	0.0006
Purpura/rash	0.0500	0.0154	0.0046
Dry eye	0.0065	0.0010	0.0004
Red/watery eye	0.0116	0.0014	0.0001
Sexual dysfunction	0.0118	0.0008	0.0022
Menorrhagia	0.0174	0.0027	0.0036
Vaginal discharge	0.0319	0.0077	0.0030
Allergies/angioedema	0.0282	0.0204	0.0033
Body ache	0.0055	0.0018	0.0007
Fever/Chills	0.0096	0.0231	0.0007
Dry mouth	0.0020	0.0018	0.0005
Haemoptysis	0.0015	0.0078	0.0003
Headache	0.0861	0.0465	0.0170
Hot flushes	0.0049	0.0008	0.0019
Mouth ulcer	0.0041	0.0009	0.0009
Polyuria	0.0166	0.0070	0.0015
Urinary incontinence	0.0150	0.0076	0.0016
Urinary retention	0.0035	0.0000	0.0004
Vertigo	0.0143	0.0022	0.0001

Supplementary Table 10: Baseline characteristics of patients with SARS CoV-2 infection, without persistent symptoms and with persistent symptoms and membership to three latent classes

	Patients without persistent symptoms	Latent Classes among those with persistent symptoms associated with SARS CoV-2 infection (n=50,832)		
		Class 1 (Broad spectrum of symptoms including pain, fatigue and rash)	Class 2 (Cough, shortness of breath and phlegm)	Class 3 (Anxiety, depression, insomnia & brain fog)
Number of patients	(n=333,305)	(n=40,676) (80.0%)	(n=2,928) (5.8%)	(n=7,228) (14.2%)
Age at index (years)				
Mean (SD)	43.1 (16.2)	47.3 (17.9)	53.5 (18.8)	38.2 (15.1)
Median (IQR)	41.0 (29.0 ; 54.0)	46.0 (33.0 ; 58.0)	53.0 (39.0 ; 65.0)	35.0 (25.0 ; 48.0)
Categories, n (%)				
18-29	85032 (25.5)	7932 (19.5)	378 (12.9)	2627 (36.3)
30-39	68807 (20.6)	7465 (18.3)	412 (14.1)	1618 (22.4)
40-49	65633 (19.7)	7874 (19.4)	497 (17.0)	1345 (18.6)
50-59	63362 (19.0)	8222 (20.2)	649 (22.2)	1029 (14.2)
60-69	30693 (9.2)	4447 (10.9)	413 (14.1)	379 (5.2)
70+	19778 (5.9)	4736 (11.6)	579 (19.8)	230 (3.2)
Sex, n (%)				
Female	178189 (53.46)	27446 (67.5)	1817 (62.1)	5092 (70.4)
Male	155116 (46.54)	13230 (32.5)	1111 (37.9)	2136 (29.6)
Ethnicity, n (%)				
White	212229 (63.7)	27138 (66.7)	2108 (72.0)	5242 (72.5)
Asians	41351 (12.4)	5574 (13.7)	347 (11.8)	516 (7.1)

Black	13963 (4.2)	1629 (4.0)	67 (2.3)	187 (2.6)
Mixed	5281 (1.6)	557 (1.4)	32 (1.1)	106 (1.5)
Others	4727 (1.4)	625 (1.5)	25 (0.8)	61 (0.8)
Missing	55754 (16.7)	5153 (12.7)	349 (11.9)	1116 (15.4)
Socio-economic status IMD				
quintile, n (%)				
Quintile 1 (Least deprived)	58763 (17.6)	6398 (15.7)	392 (13.4)	1011 (14.0)
Quintile 2	60179 (18.1)	6812 (16.7)	444 (15.2)	1222 (16.9)
Quintile 3	61479 (18.4)	7341 (18.1)	579 (19.8)	1300 (18.0)
Quintile 4	72826 (21.9)	8873 (21.8)	649 (22.2)	1654 (22.9)
Quintile 5 (Most deprived)	74225 (22.3)	10323 (25.4)	803 (27.4)	1919 (26.5)
Missing	5833 (1.7)	929 (2.3)	61 (2.0)	122 (1.7)
Body mass index (kg/m2), n (%)				
<18.5	9052 (2.7)	965 (2.4)	75 (2.6)	220 (3.0)
18.5-24	102752 (30.8)	11824 (29.1)	730 (24.9)	2324 (32.1)
25-29	94870 (28.5)	12114 (29.8)	881 (30.1)	1842 (25.5)
30+	80074 (24.0)	12639 (31.1)	1068 (36.5)	2018 (27.9)
Missing	46557 (14.0)	3134 (7.7)	174 (5.9)	824 (11.4)
Smoking status				
Never smoked	125181 (37.6)	13632 (33.5)	758 (25.9)	2396 (33.1)
Ex-smoker	118218 (35.5)	17076 (42.0)	1358 (46.4)	2642 (36.6)
Current smoker	74023 (22.2)	9060 (22.3)	769 (26.3)	1913 (26.5)
Missing	15883 (4.8)	908 (2.2)	43 (1.5)	277 (3.8)

Supplementary Table 11: Results of the multinomial logistic regression model for the polytomous class membership outcome

	Patients without persistent symptoms	Adjusted OR (95% CI) for each of the latent classes		
		Class 1 (Broad spectrum of symptoms including pain, fatigue and rash)	Class 2 (Cough, shortness of breath and phlegm)	Class 3 (Anxiety, depression, insomnia & brain fog)
Number of patients	(n=333,305)	(n=40,676)	(n=2,928)	(n=7,228)
Age at index (years)				
18-29		Ref	Ref	Ref
30-39		1.01 (0.97-1.04)	1.11 (0.96-1.28)	0.67 (0.63-0.72)
40-49		1.09 (1.05-1.13)	1.37 (1.19-1.57)	0.58 (0.54-0.63)
50-59		1.17 (1.13-1.22)	1.81 (1.58-2.07)	0.44 (0.41-0.48)
60-69		1.31 (1.26-1.37)	2.32 (2-2.69)	0.34 (0.3-0.38)
70+		2.16 (2.07-2.25)	5.12 (4.46-5.88)	0.3 (0.27-0.35)
Sex				
Male		Ref	Ref	Ref
Female		1.76 (1.72-1.8)	1.41 (1.3-1.52)	1.93 (1.83-2.04)
Ethnicity				
White		Ref	Ref	Ref
Asians		1.15 (1.12-1.19)	1 (0.89-1.13)	0.49 (0.45-0.54)
Black		0.9 (0.85-0.95)	0.48 (0.38-0.62)	0.48 (0.41-0.55)
Mixed		0.89 (0.82-0.98)	0.75 (0.53-1.07)	0.69 (0.57-0.84)
Others		1.15 (1.06-1.25)	0.65 (0.44-0.97)	0.49 (0.38-0.64)
Missing		0.89 (0.86-0.92)	0.87 (0.78-0.98)	0.83 (0.77-0.89)
Socio-economic status IMD quintile				
Quintile 1 (Least deprived)		Ref	Ref	Ref
Quintile 2	Ref	1.03 (0.99-1.06)	1.09 (0.95-1.25)	1.15 (1.06-1.25)

Quintile 3	1.07 (1.03-1.11)	1.41 (1.24-1.6)	1.2 (1.11-1.31)
Quintile 4	1.1 (1.06-1.13)	1.38 (1.21-1.56)	1.29 (1.19-1.39)
Quintile 5 (Most deprived)	1.24 (1.2-1.28)	1.68 (1.48-1.9)	1.45 (1.34-1.57)
Missing	1.42 (1.32-1.53)	1.6 (1.22-2.1)	1.18 (0.98-1.43)
Body mass index (kg/m2)			
<18.5	1 (0.93-1.07)	1.34 (1.05-1.7)	0.99 (0.86-1.14)
18.5-24	Ref	Ref	Ref
25-29	1.11 (1.08-1.15)	1.16 (1.05-1.29)	1.07 (1.01-1.14)
30+	1.31 (1.27-1.34)	1.59 (1.44-1.75)	1.29 (1.21-1.37)
Missing	0.82 (0.79-0.86)	0.84 (0.71-1.01)	0.88 (0.8-0.96)
Smoking Status			
Never smoked	Ref	Ref	Ref
Ex-smoker	1.18 (1.15-1.21)	1.43 (1.3-1.57)	1.25 (1.18-1.32)
Current smoker	1.11 (1.08-1.14)	1.56 (1.41-1.73)	1.35 (1.27-1.43)
Missing	0.8 (0.75-0.87)	0.83 (0.6-1.15)	0.89 (0.77-1.02)

Supplementary Table 12A: Snomed CT codes for confirmed COVID-19

DESCRIPTION	SNOMED CT CODE
Detection of 2019 novel coronavirus using polymerase chain reaction technique	1240511000000100
Detection of 2019-nCoV (novel coronavirus) using polymerase chain reaction technique	1240511000000100
Detection of SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2) using polymerase chain reaction technique	1240511000000100
Detection of Wuhan 2019-nCoV (novel coronavirus) using polymerase chain reaction technique	1240511000000100
Wuhan 2019-nCoV (novel coronavirus) detected	1240581000000100
2019-nCoV (novel coronavirus) detected	1240581000000100
2019 novel coronavirus detected	1240581000000100
SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2) detected	1240581000000100
SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2) detection result positive	1240581000000100
SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2) RNA (ribonucleic acid) detection result positive	1240581000000100
COVID-19 detected	1240581000000100
COVID-19 confirmed by laboratory test	1300721000000100
SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2) RNA (ribonucleic acid) qualitative existence in specimen	1321301000000100
SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2) antigen detection result positive	1322781000000100
2019-nCoV (novel coronavirus) antigen detection result positive	1322781000000100
SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2) RNA (ribonucleic acid) detection result positive	1324601000000100
2019-nCoV (novel coronavirus) ribonucleic acid detected	1324601000000100
SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2) RNA (ribonucleic acid) detection result positive at the limit of detection	1324881000000100
2019-nCoV (novel coronavirus) detection result positive at the limit of detection	1324881000000100
Detection of SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2) antigen	871553007
Detection of ribonucleic acid of 2019 novel coronavirus in nasopharyngeal swab	871556004
Detection of RNA (ribonucleic acid) of SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2) in nasopharyngeal swab	871556004
Detection of RNA (ribonucleic acid) of SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2) in oropharyngeal swab	871557008
Detection of RNA (ribonucleic acid) of SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2) using polymerase chain reaction	871560001
Detection of ribonucleic acid of COVID-19 using polymerase chain reaction	871560001

Supplementary Table 12B: Snomed CT codes for suspected COVID-19

DESCRIPTION	SNOMED CT CODE
Suspected disease caused by Wuhan 2019-nCoV (novel coronavirus)	1240761000000100
Myocarditis caused by 2019 novel coronavirus	1240531000000100
Disease caused by 2019 novel coronavirus	1240751000000100
Otitis media caused by Wuhan 2019-nCoV (novel coronavirus)	1240521000000100
Upper respiratory tract infection caused by 2019-nCoV (novel coronavirus)	1240541000000100
Otitis media caused by 2019 novel coronavirus	1240521000000100
Disease caused by Wuhan 2019-nCoV (novel coronavirus)	1240751000000100
Pneumonia caused by 2019 novel coronavirus	1240551000000100
Telephone consultation for suspected 2019-nCoV (novel coronavirus)	1240451000000100
Gastroenteritis caused by Wuhan 2019-nCoV (novel coronavirus)	1240571000000100
Telephone consultation for suspected Wuhan 2019-nCoV (novel coronavirus)	1240451000000100
Upper respiratory tract infection caused by Wuhan 2019-nCoV (novel coronavirus)	1240541000000100
Encephalopathy caused by Wuhan 2019-nCoV (novel coronavirus)	1240561000000100
Myocarditis caused by 2019-nCoV (novel coronavirus)	1240531000000100
Pneumonia caused by Wuhan 2019-nCoV (novel coronavirus)	1240551000000100
Encephalopathy caused by 2019-nCoV (novel coronavirus)	1240561000000100
Confirmed 2019-nCoV (novel coronavirus) infection	12802201000006100
Pneumonia caused by SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2)	1240551000000100
Gastroenteritis caused by SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2)	1240571000000100
Possible COVID-19	1240761000000100
Probable COVID-19 confirmed using clinical diagnostic criteria	1300731000000100
Myocarditis caused by SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2)	1240531000000100
Suspected COVID-19 caused by SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2)	1240761000000100
Telephone consultation for suspected SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2)	1240451000000100
COVID-19 confirmed clinically	1300731000000100
Otitis media caused by SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2)	1240521000000100
Upper respiratory tract infection caused by SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2)	1240541000000100
Telephone consultation for suspected 2019 novel coronavirus	1240451000000100
Disease caused by 2019-nCoV (novel coronavirus)	1240751000000100
COVID-19 severity score	1300631000000100
COVID-19 confirmed using clinical diagnostic criteria	1300731000000100
Myocarditis caused by Wuhan 2019-nCoV (novel coronavirus)	1240531000000100
Suspected disease caused by 2019-nCoV (novel coronavirus)	1240761000000100
Infection of upper respiratory tract caused by 2019 novel coronavirus	1240541000000100
Gastroenteritis caused by 2019 novel coronavirus	1240571000000100
Suspected COVID-19	1240761000000100
Signposting to CHMS (COVID-19 Home Management Service)	1321231000000100

COVID-19	1240751000000100
Encephalopathy caused by SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2)	1240561000000100
SARS-CoV infection	398447004
Otitis media caused by 2019-nCoV (novel coronavirus)	1240521000000100
Gastroenteritis caused by 2019-nCoV (novel coronavirus)	1240571000000100
Suspected disease caused by 2019 novel coronavirus	1240761000000100
Pneumonia caused by 2019-nCoV (novel coronavirus)	1240551000000100
Encephalopathy caused by 2019 novel coronavirus	1240561000000100
Suspected 2019-nCoV (novel coronavirus) infection	12802181000006100
COVID-19 caused by SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2)	1240751000000100
2019-nCoV (novel coronavirus) IgG detected	1321541000000100
2019-nCoV (novel coronavirus) IgA detected	1321761000000100
2019-nCoV (novel coronavirus) antibody detection result positive	1322871000000100
SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2) antibody detection result positive	1322871000000100
SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2) IgA detection result positive	1321761000000100
Serotype SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2)	1240421000000100
Pneumonia caused by SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2)	882784691000119000
Disease caused by 2019-nCoV	840539006
Pneumonia caused by 2019 novel coronavirus	882784691000119000
Infection of upper respiratory tract caused by 2019 novel coronavirus	1240541000000100
Encephalopathy due to COVID-19	1240561000000100
Myocarditis due to disease caused by SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2)	1240531000000100
Otitis media due to COVID-19	1240521000000100
Encephalopathy due to disease caused by SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2)	1240561000000100
Detection of SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2)	871562009
Lymphopenia due to COVID-19	866151004
Suspected COVID-19	840544004
COVID-19 lower respiratory infection	880529761000119000
Fever caused by SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2)	119751000146104
Lymphocytopenia due to SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2)	866151004
Acute respiratory distress syndrome due to disease caused by SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2)	674814021000119000
Detection of SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2) antibody	871552002
SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2) IgG detection result positive	1321541000000100
Myocarditis due to COVID-19	1240531000000100
Pneumonia caused by 2019-nCoV (novel coronavirus)	882784691000119000
Disease caused by 2019 novel coronavirus	840539006
COVID-19 pneumonia	882784691000119000

Dyspnoea caused by SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2)	119981000146107
Detection of COVID-19	871562009
Signposting to Your COVID Recovery	1325021000000100
Serotype 2019-nCoV (novel coronavirus)	1240421000000100
Suspected disease caused by 2019-nCoV (novel coronavirus)	840544004
Suspected disease caused by 2019 novel coronavirus	840544004
Sepsis due to disease caused by COVID-19	870588003
COVID-19 acute bronchitis	138389411000119000
Detection of 2019 novel coronavirus antibody	871552002
COVID-19	840539006
Acute COVID-19 infection	1325171000000100
Sepsis due to disease caused by SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2)	870588003
Lower respiratory infection caused by SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2)	880529761000119000
COVID-19 acute respiratory distress syndrome	674814021000119000
Ongoing symptomatic COVID-19	1325181000000100
Asymptomatic SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2) infection	189486241000119000
Suspected disease caused by SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2)	840544004
SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2) IgG qualitative existence in specimen	1321321000000100
SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2) IgM detection result positive	1321551000000100
Cardiomyopathy due to disease caused by SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2)	119731000146105
Acute hypoxemic respiratory failure due to disease caused by SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2)	870590002
Asymptomatic COVID-19	189486241000119000
Anti-SARS-CoV-2 IgG	870361009
Antibody to SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2)	1240401000000100
Otitis media due to disease caused by SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2)	1240521000000100
Post-COVID-19 syndrome	1325161000000100
Acute kidney injury due to disease caused by SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2)	870589006
Acute bronchitis caused by SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2)	138389411000119000
Possible COVID-19	840544004

Supplementary Table 13: List of symptoms outcomes considered

Domain	Symptom	Component of the primary outcome: WHO case definition for Long COVID	Component of the secondary outcome: significantly reported higher among patients with COVID-19
Breathing	Orthopnoea		
	Paroxysmal nocturnal dyspnoea		
	Shortness of breath	X	X
	Shortness of breath at rest		X
	Shortness of breath on exertion		X
	Tachypnoea		
	Wheezing		X
Pain	Chest pain	X	X
	Neuropathic pain		
	Pain		X
	Pleuritic chest pain		X
Circulation	Cold extremities		
	Limb swelling		X
	Orthostatic hypotension		
	Palpitations	X	X
	Presyncope		
	Tachycardia		X
Fatigue	Fatigue	X	X
	Post exertional fatigue	X	
Cognitive health	Amnesia	X	
	Brain fog	X	X
	Difficulty understanding		
	Dysarthria		
	Dysphasia		
	Reading difficulty		
Movement	Apraxia		
	Balance difficulty		
	Tremors		
Sleep	Excessive sleep	X	
	Insomnia	X	X
Ear, nose and throat	Anosmia	X	X
	Cough	X	X
	Dysgeusia	X	
	Dysphagia		X
	Ear pain		X
	Hearing loss	X	
	Hoarse voice		X
	Hyperacusis	X	
	Nasal congestion		X
	Phlegm		X

	Sneezing		X
	Sore throat		
	Tinnitus		
Stomach and digestion	Abdominal pain	X	X
	Bloating		X
	Bowel incontinence		X
	Constipation	X	X
	Diarrhoea	X	X
	Gastric reflux	X	
	gastritis	X	X
	Nausea		X
	Vomiting		X
	Weight gain		
	Weight loss		X
	Muscles and joints	Asthenia	
Joint pain		X	X
Joint stiffness			
Muscle cramping		X	
Muscle pain		X	
Muscle twitch			
Paraesthesia		X	X
Mental health	Anhedonia		X
	Anorexia		X
	Anxiety		X
	Anxiety and depression	X	
	Depression	X	X
	Increased appetite		
	loneliness		
	Mood swings		
	Post-traumatic stress disorder		
Hair, skin and nails	Dry and scaly skin		X
	Hair loss		X
	Hives		
	Itchy skin		X
	Nail changes		X
	Purpura		
	Rash		X
Eyes	Diplopia	X	
	Dry eye		X
	Eye pain		
	Flashing lights and floaters		
	Itchy eyes		
	Photophobia		
	Red eye		X
	Watery eyes		
	Ejaculation difficulty		X

Reproductive health	Erectile dysfunction		X
	Menorrhagia	X	X
	Menstrual changes	X	
	Premenstrual syndrome	X	
	Vaginal discharge		X
	Vaginal dryness		
	Anorgasm		
	Reduced libido		X
Other symptoms	Allergies	X	X
	Angioedema		
	Body ache		X
	Chills and shivering		
	Dizziness	X	X
	Dry mouth		X
	Fever	X	X
	Haemoptysis		X
	Hallucinations		
	Headache	X	X
	Hot flushes		X
	Mouth ulcer		X
	Neurasthenia		
	Polydipsia		
	Polyuria		X
	Seizures		
	Sweating		
	Swelling of lymph nodes		
	Urinary incontinence		X
	Urinary retention		X
Vertigo		X	