

Table S1. List of excluded procedures.

Specialty	Excluded procedures
Abdominal surgery	Ascitic drain (drainage of peritoneal cavity)
	Endoscopic ultrasound
	Laparoscopic ultrasound
Breast surgery	Breast biopsy
Cardiac surgery	Insertion of cardiac pacemaker
	Percutaneous coronary intervention
	Transluminal balloon angioplasty of coronary artery
Colorectal surgery	Colonoscopy (diagnostic or therapeutic)
	Flexible sigmoidoscopy (diagnostic or therapeutic)
	Proctoscopy (diagnostic or therapeutic)
Dental procedures	Implantation of tooth
	Insertion of dental prosthesis
	Orthodontic operations
	Restoration of tooth
	Extraction of tooth
Gynaecology	Cervical biopsy
	Colposcopy (diagnostic or therapeutic)
Obstetrics	Any vaginal delivery (normal delivery, breech delivery, forceps delivery, vacuum delivery)
	Surgical termination of pregnancy
Ophthalmology	Removal of foreign body from cornea
Orthopaedics	Bone biopsy
	Injection in to joint
	Muscle biopsy
Otolaryngology	Laryngoscopy (diagnostic or therapeutic)
	Nasendoscopy (diagnostic)
	Packing of cavity of nose
Thoracic surgery	Bronchoscopy (diagnostic)
	Insertion of chest drain
Upper gastrointestinal surgery	Endoscopic retrograde cholangiopancreatography (diagnostic or therapeutic)
	Liver biopsy
	Oesophago-gastro-duodenoscopy (diagnostic or therapeutic)
Urology*	Bladder biopsy
	Extracorporeal shock-wave lithotripsy
	Flexible cystoscopy (diagnostic)
	Percutaneous nephrostomy
Vascular surgery	Endovenous laser treatment for varicose veins
	Insertion or removal of dialysis catheter
	injection into varicose vein of leg
	Transluminal (endovascular) procedures on arteries (diagnostic or therapeutic), including with open cut down to the artery
	Transluminal (endovascular) procedures on veins (diagnostic or therapeutic)
	Insertion or removal of Hickmann line
Other	Insertion of central venous catheter/ line
	Insertion of chest drain
	Lumbar (spinal) puncture
	Percutaneous tracheostomy
	Skin biopsy (including shave biopsy of skin)
	Therapeutic epidural injection
	Vacuum dressing

*Transurethral resection of the prostate, transurethral resection of bladder tumour, rigid cystoscopy under general anaesthesia, and insertion of ureteric stent should be included.

Table S2. Ranked VTE rates alongside PE and DVT rates by specialty in all patients of any SARS-CoV-2 status

	VTE		PE		DVT	
Neurosurgery	37/2848	1.3%	15/2848	0.5%	27/2848	0.9%
Thoracic surgery	21/2087	1.0%	13/2087	0.6%	8/2087	0.4%
Surgical oncology	25/2699	0.9%	11/2699	0.4%	17/2699	0.6%
Colorectal surgery	118/13,012	0.9%	71/13,012	0.5%	56/13,012	0.4%
General surgery	99/10,925	0.9%	54/10,925	0.5%	55/10,925	0.5%
Orthopaedics	175/20,815	0.8%	86/20,815	0.4%	99/20,815	0.5%
Spinal surgery	24/2940	0.8%	11/2940	0.4%	15/2940	0.5%
Cardiac surgery	20/2482	0.8%	9/2482	0.4%	12/2482	0.5%
Oesophagogastric	25/3327	0.8%	17/3327	0.5%	13/3327	0.4%
Other surgery	6/828	0.7%	1/828	0.1%	5/828	0.6%
Hepatobiliary surgery	56/10,736	0.5%	36/10,736	0.3%	23/10,736	0.2%
Head & Neck surgery	23/6515	0.4%	10/6515	0.2%	13/6515	0.2%
Gynaecology	24/7629	0.3%	12/7629	0.2%	15/7629	0.2%
Vascular surgery	25/8569	0.3%	12/8569	0.1%	16/8569	0.2%
Hernia surgery	22/7812	0.3%	17/7812	0.2%	8/7812	0.1%
Obstetrics	22/8967	0.2%	4/8967	0.0%	19/8967	0.2%
Plastic surgery	6/2971	0.2%	2/2971	0.1%	5/2971	0.2%
Breast surgery	8/5428	0.1%	5/5428	0.1%	5/5428	0.1%
Endocrine surgery	4/2800	0.1%	3/2800	0.1%	1/2800	0.0%
Ophthalmology	2/4315	0.0%	1/4315	0.0%	1/4315	0.0%
Dentistry	0/281	0.0%	0/281	0.0%	0/281	0.0%
Missing	27					

Table S3. Adjusted regression model for factors associated with venous thromboembolism (shown in Figure 3).

	Odds Ratio	[95% Conf. Interval]	p value	
SARS-CoV-2 status				
No SARS-CoV-2				
Peri-operative SARS-CoV-2	1.48	1.08	2.03	0.016
Recent SARS-CoV-2	1.96	1.16	3.33	0.012
Previous SARS-CoV-2	1.66	0.90	3.04	0.103
Pneumonia				
No				
Yes	3.73	2.98	4.68	< 0.001
Age; years				
18–49				
50–69 years	1.50	1.22	1.84	< 0.001
≥ 70	1.68	1.34	2.12	< 0.001
Sex				
Female				
Male	0.88	0.76	1.03	0.113
ASA physical status				
1–2				
3–5	2.03	1.70	2.42	< 0.001
Smoker				
No				
Yes	1.06	0.87	1.30	0.548
Respiratory comorbidities				
No				
Yes	1.15	0.93	1.42	0.197
Congestive heart failure				
No				
Yes	1.16	0.89	1.51	0.274
Cerebral vascular disease				
No				
Yes	1.15	0.87	1.52	0.320
Chronic kidney disease				
No				
Yes	1.49	1.12	1.99	0.007
Ischaemic heart disease				
No				
Yes	1.08	0.88	1.33	0.456
Indication				
Benign				
Malignancy	1.70	1.41	2.05	< 0.001
Trauma	1.59	1.29	1.95	< 0.001
Obstetric	0.62	0.38	1.00	0.050
Grade of surgery				
Minor				
Major	1.96	1.61	2.40	< 0.001
Urgency				
Elective				
Emergency	2.35	1.98	2.79	< 0.001
Anaesthetic				
Local / regional				
General	1.47	1.19	1.83	< 0.001
Country income				
High				
Upper middle	1.20	0.97	1.48	0.095
Lower middle/low	1.78	1.45	2.19	< 0.001

Peri-operative SARS-CoV-2, 7 days before to 30 days after surgery; recent SARS-CoV-2, 1–6 weeks before surgery; previous SARS-CoV-2, ≥ 7 weeks before surgery.

Table S4. Adjusted sub-group analysis for VTE in elective patients only.

	VTE	%	Odds Ratio	[95% Conf. Interval]	p value
SARS-CoV-2 status					
No SARS-CoV-2	316 / 87,117	0.4%			
Peri-operative SARS-CoV-2	20 / 965	2.1%	2.10	1.27 3.48	0.004
Recent SARS-CoV-2	10 / 604	1.7%	2.93	1.52 5.64	0.001
Previous SARS-CoV-2	5 / 857	0.6%	1.51	0.62 3.68	0.366
Pneumonia					
No	302 / 88,297	0.3%			
Yes	49 / 1246	3.9%	5.54	3.92 7.83	< 0.001
Age; years					
18–49	75 / 35,989	0.2%			
50–69 years	152 / 33,642	0.5%	1.71	1.27 2.31	< 0.001
≥ 70	124 / 19,911	0.6%	2.18	1.56 3.06	< 0.001
Sex					
Female	181 / 48,889	0.4%			
Male	170 / 40,651	0.4%	0.95	0.76 1.18	0.616
ASA physical status					
1–2	185 / 67,143	0.3%			
3–5	166 / 22,365	0.7%	1.60	1.25 2.06	< 0.001
Smoker					
No	292 / 75,485	0.4%			
Yes	58 / 13,811	0.4%	1.11	0.82 1.48	0.504
Respiratory comorbidities					
No	296 / 80,616	0.4%			
Yes	55 / 8860	0.6%	1.16	0.85 1.57	0.351
Congestive heart failure					
No	320 / 86,134	0.4%			
Yes	31 / 3385	0.9%	1.28	0.86 1.90	0.225
Cerebral vascular disease					
No	325 / 86,581	0.4%			
Yes	26 / 2938	0.9%	1.33	0.88 2.03	0.177
Chronic kidney disease					
No	333 / 87,616	0.4%			
Yes	18 / 1903	1.0%	1.60	0.97 2.62	0.064
Ischaemic heart disease					
No	289 / 81,605	0.4%			
Yes	62 / 7914	0.8%	1.09	0.80 1.48	0.593
Indication					
Benign	166 / 58,777	0.3%			
Malignancy	153 / 22,262	0.7%	1.63	1.29 2.05	< 0.001
Trauma	27 / 4646	0.6%	2.22	1.45 3.40	< 0.001
Obstetric	5 / 3855	0.1%	0.75	0.29 1.94	0.555
Grade					
Minor	58 / 34,452	0.2%			
Major	293 / 55,074	0.5%	2.25	1.67 3.03	< 0.001
Anaesthetic					
Local / regional	47 / 23,720	0.2%			
General	304 / 65,791	0.5%	1.53	1.09 2.16	0.015
Country income					
High	218 / 61,230	0.4%			
Upper middle	71 / 15,356	0.5%	1.41	1.06 1.86	0.017
Lower middle/low	62 / 12,957	0.5%	1.88	1.39 2.55	< 0.001

Peri-operative SARS-CoV-2, 7 days before to 30 days after surgery; recent SARS-CoV-2, 1–6 weeks before surgery; previous SARS-CoV-2, ≥ 7 weeks before surgery.

Table S5. Adjusted sub-group analysis for VTE in emergency patients only.

	VTE	%	Odds Ratio	[95% Conf. Interval]	p value
SARS-CoV-2 status					
No SARS-CoV-2	350 / 36,471	1.0%			
Peri-operative SARS-CoV-2	30 / 1352	2.2%	1.26	0.84 1.88	0.267
Recent SARS-CoV-2	5 / 349	1.4%	1.15	0.47 2.84	0.761
Previous SARS-CoV-2	6 / 291	2.1%	1.85	0.81 4.24	0.146
Pneumonia					
No	323 / 37,037	0.9%			
Yes	68 / 1426	4.8%	2.94	2.20 3.94	< 0.001
Age; years					
18–49	117 / 21,568	0.5%			
50–69 years	127 / 9488	1.3%	1.34	1.01 1.79	0.044
≥ 70	147 / 7406	1.0%	1.37	0.99 1.88	0.054
Sex					
Female	199 / 19,935	1.0%			
Male	192 / 18,527	1.0%	0.81	0.65 1.00	0.051
ASA physical status					
1–2	138 / 26,874	0.5%			
3–5	253 / 11,581	2.2%	2.56	1.99 3.29	< 0.001
Smoker					
No	324 / 31,707	1.0%			
Yes	66 / 6621	1.0%	1.01	0.76 1.33	0.961
Respiratory comorbidities					
No	329 / 35,070	0.9%			
Yes	62 / 3362	1.8%	1.13	0.84 1.51	0.411
Congestive heart failure					
No	350 / 36,825	1.0%			
Yes	41 / 1634	2.5%	1.09	0.77 1.55	0.632
Cerebral vascular disease					
No	357 / 36,880	1.0%			
Yes	34 / 1579	2.2%	1.02	0.70 1.48	0.918
Chronic kidney disease					
No	353 / 37,025	1.0%			
Yes	38 / 1434	2.7%	1.46	1.02 2.08	0.038
Ischaemic heart disease					
No	319 / 35,171	0.9%			
Yes	72 / 3288	2.2%	1.07	0.80 1.42	0.644
Indication					
Benign	183 / 19,940	0.9%			
Malignancy	46 / 1851	2.5%	1.75	1.25 2.46	0.001
Trauma	143 / 10,590	1.4%	1.44	1.14 1.83	0.003
Obstetric	19 / 6082	0.3%	0.52	0.30 0.93	0.026
Grade					
Minor	74 / 14,142	0.5%			
Major	317 / 24,313	1.3%	1.78	1.36 2.34	< 0.001
Anaesthetic					
Local / regional	78 / 11,997	0.7%			
General	313 / 26,445	1.2%	1.37	1.03 1.82	0.029
Country income					
High	266 / 23,821	1.1%			
Upper middle	47 / 6214	0.8%	0.94	0.68 1.29	0.690
Lower middle/low	78 / 8428	0.9%	1.59	1.20 2.11	0.001

Peri-operative SARS-CoV-2, 7 days before to 30 days after surgery; recent SARS-CoV-2, 1–6 weeks before surgery; previous SARS-CoV-2, ≥ 7 weeks before surgery.

Table S6. Adjusted sub-group analysis for VTE in major surgery patients only.

	VTE	%	Odds Ratio	[95% Conf. Interval]	p value
SARS-CoV-2 status					
No SARS-CoV-2	545 / 76,391	0.7%			
Peri-operative SARS-CoV-2	42 / 1622	2.6%	1.55	1.10 2.18	0.013
Recent SARS-CoV-2	12 / 668	1.8%	1.92	1.07 3.46	0.030
Previous SARS-CoV-2	11 / 709	1.6%	2.04	1.11 3.75	0.022
Pneumonia					
No	515 / 77,192	0.7%			
Yes	95 / 2199	4.3%	3.33	2.60 4.27	< 0.001
Age; years					
18–49	149 / 34,667	0.4%			
50–69 years	233 / 27,029	0.9%	1.54	1.22 1.93	< 0.001
≥ 70	228 / 17,694	1.3%	1.74	1.34 2.24	< 0.001
Sex					
Female	317 / 47,115	0.7%			
Male	293 / 32,273	0.9%	0.94	0.79 1.11	0.452
ASA physical status					
1–2	265 / 54,948	0.5%			
3–5	345 / 24,424	1.4%	1.84	1.51 2.22	< 0.001
Smoker					
No	512 / 67,483	0.8%			
Yes	96 / 11,649	0.8%	1.01	0.80 1.27	0.933
Respiratory comorbidities					
No	513 / 71,485	0.7%			
Yes	97 / 7848	1.2%	1.19	0.95 1.50	0.137
Congestive heart failure					
No	559 / 75,824	0.7%			
Yes	51 / 3556	1.4%	0.96	0.71 1.31	0.807
Cerebral vascular disease					
No	555 / 76,244	0.7%			
Yes	55 / 3136	1.8%	1.31	0.98 1.75	0.073
Chronic kidney disease					
No	570 / 77,388	0.7%			
Yes	40 / 1992	2.0%	1.34	0.96 1.89	0.090
Ischaemic heart disease					
No	503 / 71,676	0.7%			
Yes	107 / 7704	1.4%	1.03	0.82 1.30	0.784
Indication					
Benign	264 / 41,865	0.6%			
Malignancy	183 / 17,730	1.0%	1.77	1.45 2.17	< 0.001
Trauma	140 / 10,733	1.3%	1.39	1.10 1.76	0.005
Obstetric	23 / 9061	0.3%	0.53	0.32 0.89	0.016
Urgency					
Elective	293 / 55,074	0.5%			
Emergency	317 / 24,313	1.3%	2.43	2.00 2.94	< 0.001
Anaesthetic					
Local / regional	94 / 17,605	0.5%			
General	516 / 61,747	0.8%	1.29	1.00 1.66	0.053
Country income					
High	393 / 51,205	0.8%			
Upper middle	99 / 13,758	0.7%	1.20	0.95 1.51	0.125
Lower middle/low	118 / 14,428	0.8%	1.76	1.40 2.20	< 0.001

Peri-operative SARS-CoV-2, 7 days before to 30 days after surgery; recent SARS-CoV-2, 1–6 weeks before surgery; previous SARS-CoV-2, ≥ 7 weeks before surgery.

Table S7. Adjusted sub-group analysis for VTE in minor surgery patients only.

	VTE	%	Odds Ratio	[95% Conf. Interval]	p value
SARS-CoV-2 status					
No SARS-CoV-2	121 / 47,178	0.3%			
Peri-operative SARS-CoV-2	8 / 695	1.2%	1.10	0.48 2.48	0.828
Recent SARS-CoV-2	3 / 285	1.1%	1.69	0.50 5.72	0.398
Previous SARS-CoV-2	0 / 439	0	No events		
Pneumonia					
No	110 / 48,125	0.2%			
Yes	22 / 472	4.7%	7.56	4.36 13.10	< 0.001
Age; years					
18–49	43 / 22,877	0.2%			
50–69 years	46 / 16,095	0.3%	1.28	0.81 2.02	0.296
≥ 70	43 / 9624	0.5%	1.48	0.87 2.52	0.148
Sex					
Female	63 / 21,697	0.3%			
Male	69 / 26,899	0.3%	0.71	0.50 1.02	0.062
ASA physical status					
1–2	58 / 39,055	0.2%			
3–5	74 / 9518	0.8%	3.16	2.05 4.86	< 0.001
Smoker					
No	104 / 39,697	0.3%			
Yes	28 / 8777	0.3%	1.35	0.87 2.09	0.181
Respiratory comorbidities					
No	112 / 44,183	0.3%			
Yes	20 / 4374	0.5%	0.98	0.59 1.62	0.925
Congestive heart failure					
No	111 / 47,118	0.2%			
Yes	21 / 1462	1.4%	2.18	1.28 3.73	0.004
Cerebral vascular disease					
No	127 / 47,200	0.3%			
Yes	5 / 1380	0.4%	0.47	0.18 1.19	0.110
Chronic kidney disease					
No	116 / 47,235	0.3%			
Yes	16 / 1345	1.2%	1.91	1.08 3.39	0.026
Ischaemic heart disease					
No	105 / 45,083	0.2%			
Yes	27 / 3497	0.8%	1.34	0.83 2.18	0.232
Indication					
Benign	85 / 36,839	0.2%			
Malignancy	16 / 6382	0.3%	1.08	0.61 1.90	0.801
Trauma	30 / 4501	0.7%	2.50	1.61 3.89	< 0.001
Obstetric	1 / 874	0.1%	0.69	0.09 5.10	0.718
Urgency					
Elective	58 / 34,452	0.2%			
Emergency	74 / 14,142	0.5%	2.06	1.40 3.04	< 0.001
Anaesthetic					
Local / regional	31 / 18,111	0.2%			
General	101 / 30,472	0.3%	1.82	1.19 2.77	0.005
Country income					
High	91 / 33,843	0.3%			
Upper middle	19 / 7798	0.3%	1.16	0.69 1.95	0.572
Lower middle/low	22 / 6956	0.3%	1.85	1.12 3.05	0.016

Peri-operative SARS-CoV-2, 7 days before to 30 days after surgery; recent SARS-CoV-2, 1–6 weeks before surgery; previous SARS-CoV-2, ≥ 7 weeks before surgery.