

APPENDIX 1 (Part 1 of 2): Codes from *International Classification of Diseases and Related Health Problems, 10th Revision (ICD-10)* used in study of venous thromboembolism (VTE) and anticoagulation in patients with COVID-19.

ICD-10 Code	Description	VTE Type
For VTE		
I80.1	Phlebitis and thrombophlebitis of femoral vein	DVT
SI80.2	Phlebitis and thrombophlebitis of other deep vessels of lower extremities	DVT
I80.3	Phlebitis and thrombophlebitis of lower extremities, unspecified	DVT
I81	Portal vein thrombosis	Other VTE
I82.0	Budd-Chiari syndrome	Other VTE
I82.1	Thrombophlebitis migrans	Other VTE
I82.2	Embolism and thrombosis of vena cava	Other VTE
I82.3	Embolism and thrombosis of renal vein	Other VTE
I82.8	Embolism and thrombosis of other specified veins	Other VTE
I82.9	Embolism and thrombosis of unspecified vein	Other VTE
I26.0	Pulmonary embolism with mention of acute cor pulmonale	PE
I26.9	Pulmonary embolism without mention of acute cor pulmonale	PE
I63.6	Cerebral infarction due to cerebral venous thrombosis, nonpyogenic	Other VTE
I67.6	Nonpyogenic thrombosis of intracranial venous system	Other VTE
O22.301	Deep phlebothrombosis in pregnancy, delivered	DVT
O22.303	Deep phlebothrombosis in pregnancy, antepartum	DVT
O22.309	Deep phlebothrombosis in pregnancy, unspecified outcome	DVT
O22.901	Venous complication in pregnancy, unspecified, delivered	Other VTE
O22.903	Venous complication in pregnancy, unspecified, antepartum	Other VTE
O22.909	Venous complication in pregnancy, unspecified, unspecified outcome	Other VTE
O87.102	Deep phlebothrombosis in the puerperium, delivered	DVT
O87.104	Deep phlebothrombosis in the puerperium, postpartum	DVT
O87.109	Deep phlebothrombosis in the puerperium, unspecified outcome	DVT
O88.201	Obstetric blood-clot embolism, delivered	Other VTE
O88.202	Obstetric blood-clot embolism, delivered with complication	Other VTE
O88.203	Obstetric blood-clot embolism, antepartum	Other VTE
O88.204	Obstetric blood-clot embolism, postpartum	Other VTE
O88.209	Obstetric blood-clot embolism, unspecified as to episode of care, or not applicable	Other VTE

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APPENDIX 1 (Part 2 of 2): Codes from *International Classification of Diseases and Related Health Problems, 10th Revision (ICD-10)* used in study of venous thromboembolism (VTE) and anticoagulation in patients with COVID-19.

ICD-10 Code	Description	VTE Type
For bleeding		
D62	Acute posthemorrhagic anemia	
D68.3	Hemorrhagic disorder due to circulating anticoagulants	
D69.8	Other specified hemorrhagic conditions	
D69.9	Hemorrhagic condition, unspecified	
H11.3	Conjunctival hemorrhage	
H21.0	Hyphema	
H31.3	Choroidal hemorrhage and rupture	
H35.6	Retinal hemorrhage	
H43.1	Vitreous hemorrhage	
H45.0	Vitreous hemorrhage in diseases classified elsewhere	
I60	Subarachnoid hemorrhage	
I61	Intracerebral hemorrhage	
I62.0	Nontraumatic subdural hemorrhage	
I62.1	Nontraumatic extradural hemorrhage	
I62.9	Intracranial hemorrhage (nontraumatic), unspecified	
I85.0	Esophageal varices with bleeding	
I98.3	Esophageal varices with bleeding in diseases classified elsewhere	
K22.1	Ulcer of esophagus	
K25	Gastric ulcer	
K26	Duodenal ulcer	
K27	Peptic ulcer	
K28	Gastrojejunal ulcer	
K29	Gastritis and duodenitis	
K62.5	Hemorrhage of anus and rectum	
K66.1	Hemoperitoneum	
K92.0	Hematemesis	
K92.1	Melena	
K92.2	Gastrointestinal hemorrhage, unspecified	
M25.0	Hemarthrosis	
N02	Recurrent and persistent hematuria	
N93.8	Other specified abnormal uterine and vaginal bleeding	
N93.9	Abnormal uterine and vaginal bleeding, unspecified	
N95.0	Postmenopausal bleeding	
R04.1	Hemorrhage from throat	
R04.2	Hemoptysis	
R04.8	Hemorrhage from other sites in respiratory passages	
R04.9	Hemorrhage from respiratory passages, unspecified	
R31	Unspecified hematuria	
R58	Hemorrhage, not elsewhere classified	

DVT = deep vein thrombosis, PE = pulmonary embolism.

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APPENDIX 2: Anatomic Therapeutic Chemical (ATC) codes to define medications.

Drug	ATC Code(s)
Tinzaparin	B01AB10
Enoxaparin	B01AB05
Dalteparin	B01AB04
Heparin	B01AB01, C05BA03, S01XA14
Rivaroxaban	B01AF01
Apixaban	B01AF02
Dabigatran	B01AE07
Edoxaban	B01AF03
Warfarin	B01AA03

APPENDIX 3: Doses of anticoagulants for venous thromboembolism prophylaxis.¹

Drug	Prophylaxis Dose for Medical Patients		
	Dose Not Weight-Based	Actual Body Weight (kg)	Weight-Based SC Dose ^a
Tinzaparin	4500 units SC daily	< 30	2500 units
Without weight banding		30–39.9	3500 units
With weight banding		40–100	4500 units
		100.1–120	8000 units
		120.1–150	10 000 units
		150.1–175	12 000 units
		175.1–200	14 000 units
		200.1–250	16 000 units
		> 250	75 units/kg
Enoxaparin	30 units SC bid or 40 units SC daily	40–100	30 mg
Without weight banding		100.1–150	40 mg
With weight banding		150.1–200	60 mg
		200.1–250	80 mg
		> 250	0.4 mg/kg
Dalteparin	5000 units SC daily		
Heparin	5000 units SC q8–12h (bid–tid)		
Rivaroxaban	10 mg PO daily		
Apixaban	2.5 mg PO bid		
Dabigatran	220 mg PO daily		

^aFor tinzaparin, the weight-based dose is administered once daily. For enoxaparin, the weight-based dose is administered q12h.

Reference

1. Lexi-Drugs In: Lexicomp [database on internet]. Wolters Kluwer; c1978 – [updated 2019; cited 2020 Sep 28]. Accessed through institutional subscription.

Appendix to: Schultz L, Bungard TJ, Mackay E, Gill P, Guirguis M. Prevalence of venous thromboembolism and anticoagulant use in patients with COVID-19 in Alberta, Canada. *Can J Hosp Pharm.* 2022;75(4):286-93.

APPENDIX 4: Breakdown of “higher-dose” anticoagulation.

Higher-Dose Therapy	No. of Patients Who Received Higher Dose at Least Once^a
Tinzaparin	
8 000 units	193 ^b
9 000 units	3
10 000 units	116
12 000 units	63
14 000 units	48
16 000 units	39
18 000 units	23
≥ 20 000 units	21
Enoxaparin	82
Heparin	51
Rivaroxaban	87
Apixaban	194
Dabigatran	9
Warfarin	51

^aA total of 357 patients received more than 1 type of higher-dose anticoagulation during the admission. For every patient, each type of anticoagulant was counted; therefore, the sum of values in this column is greater than 357.

^bFor 147 of the 193 people who were taking tinzaparin 8000 units, weight data were not available.

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