

Appendix A: Characteristics and risk factors selected for the development of the sCOVID prediction model

Type of data	Characteristic	ICPC/ Diagnostic code/ ATC
Demographic	Age in years (continuous)	
	Sex	
	NDS (Area postal level)	
	Postal code (4 – digits)	
Lifestyle		
<i>Obesity</i>	Obesity (BMI \geq 30 kg/m ²)	T82
	BMI \geq 30 kg/m ² in the last 2 years	1272
COVID-19 (Information extracted from questionnaire)		
<i>Current Status</i>	Clinical suspicion (not tested)	
	COVID-19 test positive (any)	
<i>Severity</i>	Hospitalisation	
	Institutionalisation	
	Deceased	
<i>Time period</i>	First wave (March - August 2020)	
	Second wave (September-December 2020)	
Chronic Diseases (CMS: score 0- 9)*		
<i>Cardiovascular</i>	Ischaemic heart disease with angina	K74
	Unstable angina	K74.01
	Stable angina	K74.02
	Acute myocardial infarction	K75
	Ischaemic heart disease without angina	K76
	Coronary sclerosis	K76.01
	Old heart attack	K76.02
	Heart failure	K77
	Acute heart failure	K77.01
	Chronic heart failure	K77.02
	Atrial fibrillation/flutter	K78
	Transient cerebral ischaemia	K89
	Stroke/cerebrovascular accident	K90
	Subarachnoid hemorrhage	K90.01
	Intracerebral haemorrhage	K90.02
	Cerebral Infarction	K90.03
	Cerebrovascular disease	K91
	Hypertension uncomplicated	K86
	Hypertension complicated	K87
	Paroxysmal tachycardia	K79
Supraventricular tachycardia	K79.01	

	Ventricular tachycardia	K79.02
	Congenital anomaly cardiovascular	K73
	Atrial septal defect	K73.01
	Ventricular septal defect	K73.02
	Heart disease other	K84
	Wolff-Parkinson-White (WPW) syndrome	K84.01
	Atrioventricular block	K84.02
	Cardiomyopathy	K84.03
	Long QT syndrome	K84.07
	Atherosclerosis/peripheral vascular disease	K92
	Intermittent claudication	K92.01
	Raynaud syndrome	K92.02
	Buerger's disease	K92.03
	Cardiac arrhythmia NOS	K80
	Supraventricular extrasystoles	K80.01
	Ventricular extrasystoles	K80.02
	Sick sinus syndrome	K80.03
	Pulmonary heart disease	K82
<i>Diabetes</i>	Diabetes non-insulin dependent	T90
	Diabetes mellitus type 1	T90.01
	Diabetes mellitus type 2	T90.02
<i>Neurological</i>	Dementia	P70
	Parkinsonism	N87
	Parkinson's disease	N87.01
	Epilepsy	N88
	Multiple sclerosis	N86
	Neurological disease other	N99
	ALS	N99.01
	Myasthenia	N99.02
	Other neuron muscle diseases	N99.03
<i>Heart valve</i>	Rheumatic fever/heart disease	K71
	Rheumatic and heart disease	K71.02
	Heart valve disease NOS	K83
	Stenosis of aorta	K83.01
	Mitral insufficiency	K83.02
<i>Liver</i>	Liver disease NOS	D97
	Cirrhosis	D97.04
	Liver steatosis (< 5 years)	D97.05
	Viral hepatitis	D72
	Viral hepatitis A (< 6 month)	D72.01
	Viral hepatitis B (< 6 month)	D72.02
	Viral hepatitis C (< 6 month)	D72.03
	Carrier Hepatitis B	D72.04
	Carrier Hepatitis C	D72.05

<i>Lung</i>	Chronic obstructive pulmonary disease	R95
	Astma	R96
	Allergic astma	R96.02
	Chronic bronchitis	R91
	Chronic bronchitis	R91.01
	Bronchiectasis	R91.02
	Pulmonary embolism	K93
	Tuberculosis	R70
	Pleurisy/pleural effusion	R82
	Congenital anomaly respiratory	R89
	Respiratory disease other	R99
	Pneumoconiosis	R99.06
	Cystic fibrosis	T99.10
	GOLD classification (<24 month)	2209
	Nr of exacerbations (<12 month)	3549
	Prednisolone (<24 month)	H02AB06
	Prednisone (<24 month)	H02AB07
<i>Cancer</i>	Malignant neoplasm breast female	X76
	Malignant Adenocarcinoma	X76.01
	Malignant neoplasm male genital other	Y78
	Malignant carcinoma penis	Y78.01
	Malignant carcinoma testis	Y78.02
	Malignant carcinoma breast	Y78.03
	Malignant neoplasm nervous system	N74
	Malignant neoplasm of bladder	U76
	Malignant neoplasm thyroid	T71
	Malignant neoplasm pancreas	D76
	Malignant neoplasm stomach	D74
	Malignant neoplasm related to pregnancy	W72
	Malignant neoplasm urinary tract other	U77
	Malignant neoplasm of kidney	U75
	Malignant neoplasm colon/rectum	D75
	Malignancy NOS	A79
	Malignant neoplasm cervix	X75
	Malignant neoplasm bronchus/lung	R84
	Malignant neoplasm blood other	B74
	Multiple myeloma	B74.01
	Malignant neoplasm genital female other	X77
	Endometrial carcinoma	X77.01
	Malignant ovary carcinoma	X77.02
	Malignant neoplasm of skin	S77
	Basal cell carcinoma	S77.01
	Spinocellular carcinoma	S77.02
	Malignant melanoma	S77.03

	Kaposi's sarcoma	S77.04
	Malignant neoplasm respiratory other	R85
	Benign neoplasm respiratory	R86
	Hodgkin Lymphoma	B72
	Hodgkin Lymphoma	B72.01
	Non-hodgkin Lymphoma	B72.02
	Leukaemia	B73
<i>Kidney</i>	Congenital anomaly urinary tract	U85
	Polycystic kidney disease	U85.01
	Glomerulonephritis/nephrosis	U88
	Urinary disease other	U99
	Chronic kidney disease	U99.01
	Renal hypoplasia	U99.02
	Hydronephrosis	U99.03
	Creatin clearance (CKD-EPI) <30 (< 12 months)	3583
	Creatin clearance (MDRD) <30 (< 12 months) or	1919
	Creatin clearance (COCKCROFT) <30 (< 12 months) or	1918
	Creatin clearance (< 12 months)	524
<i>Immune system</i>	HIV-infection/AIDS	B90
	Seropositive without symptoms	B90.01
	HIV	B90.02
	Immunodeficiencies	T99.01
	Prednison/prednisolon (< 6 months)	H02A*
	Oncolytics (< 6 months)	L01*
	Immunosuppressants (< 6 months)	L04A*
	TNF-Alpha (< 6 months)	L04AB01
	Interleukine inhibitors (< 6 months)	L04AC
Indication for influenza vaccination (score 0-1)		
	Diabetes	
	Cardiovascular disease	
	Lung disease	
	Kidney disease	
	Immunosuppressive disease/immunosuppressants	
	Heart valve disease	
	Cirrhosis	D97.04
	Liver disease NOS	D97
	Congenital anomaly NOS/multiple	A90
	Down syndrome	A90.01
	Ruptured spleen traumatic	B76
	Hereditary hemolytic anemia	B78
	Sikkelcell anemia	B78.02
	Congenital anomaly musculoskeletal	L82
	Acquired deformity of the spine	L85

Scoliosis	L85.01
Endocrine/metabolic/nutritional disease other	T99
Cushing syndrome	T99.08
Addison syndrome	T99.09
Adrenal insufficiency	T99.12
Adreno-genital syndrome	T99.13

**A patient with dementia, epilepsy and diabetes generates a score of 3*