

Supplementary material

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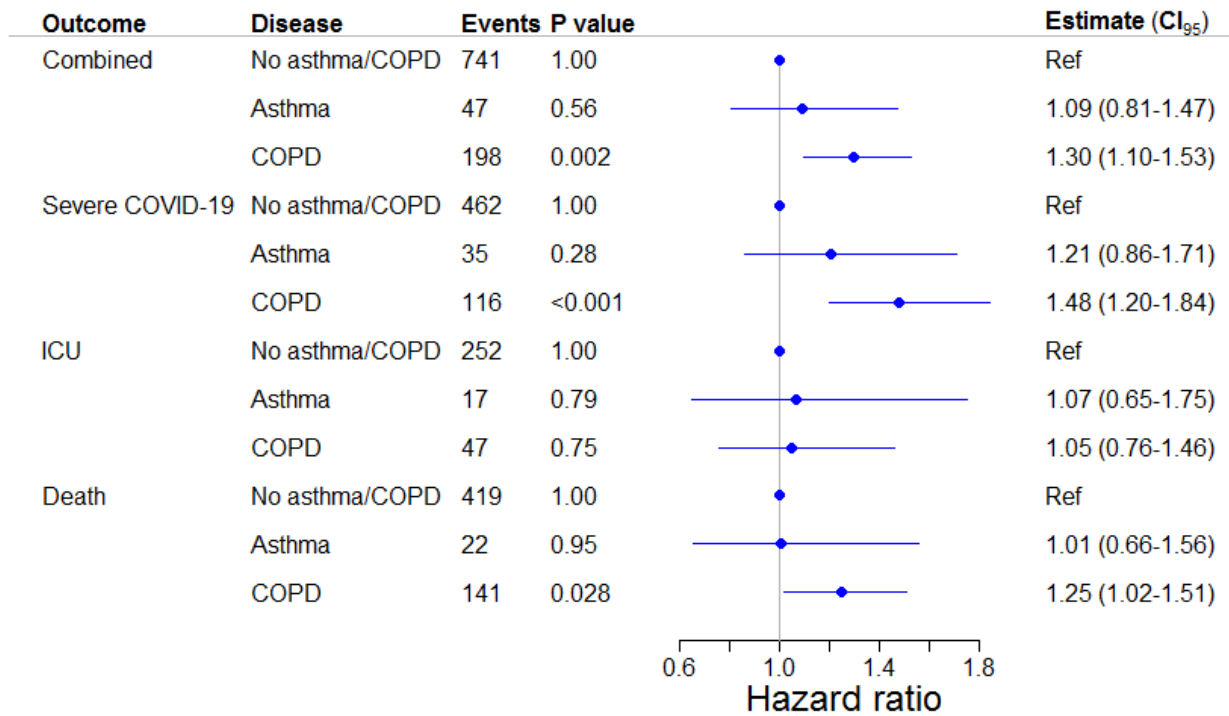
Supplementary 1: Codes used for diseases

Main diseases	
COPD	J43-44
Asthma	J45
Comorbidities	
Ischemic heart disease	I20, I24, I251, I253, I254, I255, I256, I258, I259
Previous myocardial infarction	I21, I22, I25
Heart failure	I099, I110, I130, I132, I255, I425, I426, I427, I429, I428A, P290, I43, I50
Atrial fibrillation or flutter	I48
Cerebral vascular disease	I6, G45, G46, H340
Diabetes	Determined from prescriptions of ATC-codes starting with A10
Chronic kidney disease	N03, N05, Z490, Z491, Z492, N18, N19, I120, I131, N250, Z940, Z992

Supplementary 2: ATC-codes used for medication

Respiratory drugs	R03
Antihistamines	R06
Systemic corticosteroids	H02
Diabetes drugs	A10
Biologic therapies in asthma	Opr-codes under "BOHJ" with diagnosis of action being DJ45

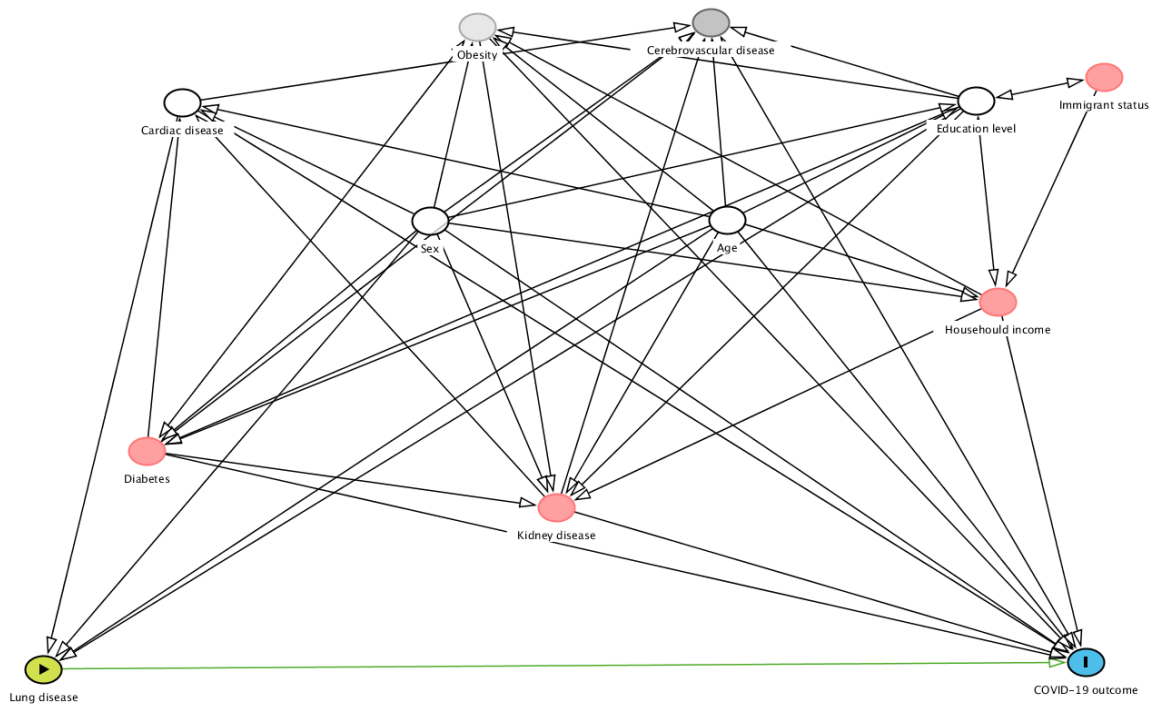
Supplementary 3: Hazard ratios from adjusted Cox's regression model used for risk estimation



Adjusted hazard ratios for the severe combined outcome of COVID-19 from a multivariable Cox's regression model.

Abbreviations: COPD, chronic obstructive pulmonary disease; ICU, Intensive care unit; COVID-19, coronavirus disease.

Supplementary 4: Directed acyclic graph



Directed acyclic graph used for assessment of covariates. Minimal required adjustment for model included cardiac disease, age, sex and education level.

Abbreviations: COVID-19, coronavirus disease.

Supplementary 5: Tables of risk estimates at specific ages in the age standardized analysis

Table of standardized risk for the components of the combined endpoint by age for patients with asthma

Age	Severe COVID-19 % (95% CI)	ICU % (95%CI)	Death % (95%CI)
30 years	2.9 (0.1-5.6)	1.1 (0.0-2.1)	0.4 (0.0-0.7)
50 years	13.8 (5.0-22.5)	12.5 (3.1-21.8)	15.2 (1.0-29.4)
70 years	50.8 (10.4-91.2)	46.1 (9.6-82.5)	51.9 (3.7-100.0)

Table of standardized risk for the components of the combined endpoint by age for patients with COPD

Age	Severe COVID-19 % (95% CI)	ICU % (95%CI)	Death % (95%CI)
30 years	10.0 (0.5-19.6)	14.2 (12.3-27.2)	2.8 (0.2-5.4)
50 years	14.3 (4.1-24.4)	12.3 (4.5-20.1)	5.7 (1.6-9.8)
70 years	18.1 (11.7-24.4)	7.3 (3.6-11.0)	17.4 (10.4-24.3)

Table of standardized risk for the components of the combined endpoint by age for patients without asthma or COPD

Age	Severe COVID-19 % (95% CI)	ICU % (95%CI)	Death % (95%CI)
30 years	2.5 (1.5-3.6)	0.7 (0.2-1.2)	0.0 (0.0-0.7)
50 years	10.8 (9.0-12.7)	8.5 (6.9-10.1)	1.3 (0.8-1.8)
70 years	28.6 (20.1-37.1)	38.6 (21.2-55.9)	55.2 (18.8-91.6)