

Supplemental Table 1. The COVID cohort identification codes

ICD-10 code (ICD-9 code)

J12.82

B34.2

B97.29

J12.81 (480.3)

U07.1

LOINC

94307-6

94308-4

94309-2

94310-0

94314-2

94315-9

94316-7

94500-6

94502-2

94533-7

94534-5

94559-2

94565-9

94647-5, 94639-2

94758-0

94759-8

94760-6

94845-5

95406-5

95409-9

95608-6

96123-5

96763-8

ICD = International Classification of Diseases; LOINC =
Laboratory observation identifiers name codes

Supplemental Table 2. The influenza cohort identification codes

ICD-10 code (ICD-9 code)

J09 (488.0, 488.1, 488.8, 488.01, 488.02, 488.09, 488.19, 488.81, 488.82, 488.89)

J10 (488.11, 487.1, 488.12)

J11 (487.0, 487.1, 487.8)

LOINC

62462-7

40982-1

82170-2

76080-1

76079-3

38382-8

80588-7

34487-9

92142-9

82166-0

49531-7

76078-5

48310-7

55465-9

82168-6

77028-9

82169-4

77027-1

49523-4

49524-2

49521-8

82167-8

49520-0

77026-3

38381-0

ICD = International Classification of Diseases; LOINC = Laboratory observation
identifiers name codes

Supplemental Table 3. The non-infected cohort identification codes

Current procedural terminology

99393-99397

Supplemental Table 4. ICD Phenotype codes for chronic overlapping pain conditions (COPCs)

COPC	ICD-10 (ICD-9)
Fibromyalgia	M79.7
Irritable bowel syndrome	K58.0, K58.1, K58.2, K58.8, K58.9 (564.1)
Interstitial cystitis/Bladder pain syndrome	N30.10 (595.1), N30.30 (595.3)
Chronic prostatitis	N41.1
Vulvodynia	N94.810, N94.818, N94.819
Migraine	G43.XXX, except for G43.6- for cerebral infarct or G43.A- for cyclical vomiting
Chronic tension-type headache	G44.201, G44.209, G44.211, G44.219, G44.221 (339.12), G44.229 (339.12)
Temporomandibular disorder	M26.60 (524.60), M26.62 (524.62), M26.63 (524.63)
Temporomandibular joint disorder	S03.0XXA
Chronic low back pain	M54.5, M54.40, M54.41, M54.42, M54.89
Chronic fatigue syndrome	R53.82 (780.71)
Endometriosis with pain	N80.XXX and one or more of the following: R10.2 (608.9, 625.9, 789.09), N94.4, N94.5, N94.6 (625.3), N94.10 (625.0), N94.11, N94.12, N94.19

Supplemental Table 5. ICD Phenotype codes for long COVID features

Long COVID features	ICD-10 (ICD-9)
Cognitive Symptoms	F01 (290.4, 290.40, 290.41, 290.42, 290.43), F02 (294.1, 294.10, 294.11), F03 (290, 290.0, 290.10, 290.11, 290.12, 290.13, 290.20, 290.21, 290.3, 290.8, 290.9, 294.2, 294.20, 294.21), F05 (290.12, 290.20, 290.3, 293.0, 293.1), F06.0 (293.82, 294.8), G30 (331.0), G31.83, G31.84 (331.83), G93.40 (348.30)
Breathing difficulties	R06 (786, 786.0, 786.00, 786.01, 786.02, 786.03, 786.04, 786.05, 786.06, 786.07, 786.09, 786.1, 784, 784.9, 784.99, 786.8, 786.9)
Pain in throat and chest	R07 (784.1, 786.5, 786.50, 786.51, 786.52, 786.59)
Abdominal symptoms	R10 (789.0, 789.00, 789.01, 789.02, 789.03, 789.04, 789.05, 789.06, 789.07, 789.09, 789.6, 789.60, 789.61, 789.62, 789.63, 789.64, 789.65, 789.66, 789.67, 789.69, 789.7, 608, 608.9, 625, 625.9), R19.4 (787.99), R19.7 (787.91), R40 (780.0, 780.01, 780.02, 780.03, 780.09), R41 (780.93, 780.97, 781.8, 797, 799.5, 799.51, 799.52, 799.53, 799.54, 799.55, 799.59), R48 (315.01, 784.6, 784.60, 784.61, 784.69, 368.16)
Fatigue	G93.3 (780.79), R53 (780.72, 780.79, 799.3, 780.71, 780.7)
Anxiety	F41 (300.0, 300.00, 300.01, 300.02, 300.09)
Depression	F32 (296.2, 296.20, 296.21, 296.22, 296.23, 296.24, 298.0, 296.25, 296.26, 296.82, 311), F33 (296.3, 296.30, 296.31, 296.32, 296.33, 296.34, 296.35, 296.36, 298.0)
Pain	G89 (338, 338.0, 338.11, 338.12, 338.18, 338.2, 338.21, 338.22, 338.28, 338.29, 338.3, 338.4), R52 (338.1, 338.19, 780.96)
Headache	G43 (346, 346.0, 346.00, 346.01, 346.02, 346.03, 346.1, 346.10, 346.11, 346.12, 346.13, 346.2, 346.20, 346.21, 346.22, 346.23, 346.3, 346.30, 346.31, 346.32, 346.33, 346.4, 346.40, 346.41, 346.42, 346.43, 346.5, 346.50, 346.51, 346.52, 346.53, 346.6, 346.60, 346.61, 346.62, 346.63, 346.7, 346.70, 346.71, 346.72, 346.73, 346.8, 346.80, 346.81, 346.82, 346.83, 346.9, 346.90, 346.91, 346.92, 346.93), G44 (339, 339.0, 339.00, 339.01, 339.02, 339.03, 339.04, 339.05, 339.09, 339.1, 339.10, 339.11, 339.12, 339.2, 339.20, 339.21, 339.22, 339.3, 339.4, 339.41, 339.42, 339.43, 339.44, 339.8, 339.81, 339.82, 339.83, 339.84, 339.85, 339.89, 784.0, 307.81), R51 (784.0)
Myalgia	M60 (728.0, 728.81, 728.82, 729.1), M79.1 (729.1)

Supplemental Table 6. Set of covariates for the propensity score match

Variable	Definition	Code Type	Code
Age	Time of diagnosis	HCO defined	year_of_birth
Sex	Female	HL-7	F
	Male		M
	Unknown		U
Race	White	HL-7	2106-3
	Black/African American		2054-5
	American Indian/Alaska Native		1002-5
	Asian		2028-9
	Native Hawaiian/Pacific Islander		2076-8
	Unknown race		2131-1
	Ethnicity		Hispanic/Latino
Not Hispanic/Latino		2186-5	
Unknown Ethnicity			
Socioeconomic status	Problems related to housing and economic circumstances	ICD-10 (ICD-9)	Z59 (V60.8, V60, V60.9, V60.89, V60.2, V60.6, V60.1, V60.0)
Diabetes mellitus	Type 1 diabetes mellitus	ICD-10 (ICD-9)	E10 (250.11, 250.13, 250.31, 250.33, 250.43, 250.41, 250.51, 250.53, 366.41, 250.61, 250.63, 357.2, 250.73, 250.71, 250.81, 250.03, 250.23, 250.83, 250.01, 250.91, 250.93, 250.21)
	Type 2 diabetes mellitus		E11 (250.00, 250.90, 250.92, 250.82, 250.80, 250.12, 250.10, 250.62, 250.52, 250.72, 250.70, 250.42, 250.32, 250.22, 250.12, 250.02, 250.30, 357.2, 250.60, 362.0, 250.50, 366.41, 362.02, 362.06, 362.05, 362.04, 362.03, 362.01, 362.07, 250.40, 250.20)
Chronic lower respiratory diseases	Bronchitis, not specified as acute or chronic	ICD-10 (ICD-9)	J40 (490)
	Simple and mucopurulent chronic bronchitis		J41 (491.0, 491.1, 491.8)
	Unspecified chronic bronchitis		J42 (491, 491.9)
	Emphysema		J43 (492, 492.0, 492.8)

	Other chronic obstructive pulmonary disease		J44 (491.2, 493.2, 491.22, 493.21, 491.21, 493.22, 491.20, 493.20, 496)
	Asthma		J45 (493, 493.00, 493.10, 493.02, 493.12, 493.01, 493.11, 493.0, 493.1, 493.92, 493.91, 493.90, 493.81, 493.82, 493.8, 493.9)
	Bronchiectasis		J47 (494, 494.0, 494.1)
Nicotine dependence	Nicotine dependence	ICD-10 (ICD-9)	F17.2 (305.1, 292.89, 292.8)
Substance use disorder	Mental and behavioral disorders due to psychoactive substance abuse	ICD-10 (ICD-9)	F10-F19 ^a
Heart disease	Ischemic heart disease	ICD-10 (ICD-9)	I20-I25 ^b
	Other forms of heart disease		I30-I-52 ^c
Chronic kidney disease	Chronic kidney disease	ICD-10 (ICD-9)	N18 (585, 585.9, 585.6, 585.5, 585.4, 585.3, 585.2, 585.1)
	Hypertensive chronic kidney disease		I12 (403, 403.0, 403.00, 403.1, 403.01, 403.10, 403.11, 403.9, 403.90, 403.91)
Chronic liver disease	Alcoholic liver disease	ICD-10 (ICD-9)	K70 (571.3, 571.2, 571.1, 571.0)
	Hepatic failure, not elsewhere classified		K72 (572.2, 572.8, 570)
	Chronic hepatitis, not elsewhere classified		K73 (571.4, 571.40, 571.49, 571.41)
	Fibrosis and cirrhosis of liver		K74 (571, 571.5, 571.6, 571.9)
	Fatty (change of) liver, not elsewhere classified		K76.0 (571.8)
	Chronic passive congestion of liver		K76.1 (573.0, 573.8)
	Portal hypertension		K76.6 (572.3)
	Other specified diseases of liver		K76.8 (573.5, 571.8, 573.8)
Stroke	Cerebral infarction	ICD-10 (ICD-9)	I63: (433.31, 433.81, 434.91, 434.11, 433.11, 434.01, 433.01, 433.21, 433.91)
Dementia	Vascular dementia	ICD-10 (ICD-9)	F01 (290.4, 290.40, 290.41, 290.42, 290.43)
	Dementia in other diseases classified elsewhere		F02 (294.1, 294.10, 294.11)

	Unspecified dementia		F03 (290, 290.0, 290.10, 290.11, 290.12, 290.13, 290.20, 290.21, 290.3, 290.8, 290.9 294.2, 294.20, 294.21)
	Alzheimer's disease		G30 (331.0)
	Frontotemporal dementia		G31.0 (331.11, 331.19, 331.1)
	Dementia with Lewy bodies		G31.83 (331.82)
Cancer and hematological cancer	Neoplasms	ICD-10 (ICD-9)	C00-D49 (140-239)
	Malignant neoplasms of lymphoid, hematopoietic and related tissue		C81-C96 ^d
Organ transplant	Renal transplantation procedures	CPT	1008098
	Liver transplantation procedures		1007811
Rheumatoid arthritis	Rheumatoid arthritis with rheumatoid factor	ICD-10 (ICD-9)	M05 (714.1, 714.2, 714.81)
	Other rheumatoid arthritis	ICD-10 (ICD-9)	M06 (714, 714.8, 714.0, 714.89, 714.9, 714.2)
Lupus	Lupus	ICD-10 (ICD-9)	M32 (710.0)
Psoriasis	Psoriasis	ICD-10 (ICD-9)	L40 (694.3, 696, 696.0, 696.1)
Disorders involving an immune mechanism	Certain disorders involving the immune mechanism	ICD-10 (ICD-9)	D80-D89
			D80: (279.0, 279.1, 279.00, 279.01, 279.02, 279.03, 279.04, 279.05, 279.09, 279.19) D81: (279.2, 279.13) D82: (279.11, 279.12) D83: (279.06, 279.10) D84: (277.6, 279.8, 279.3) D86: (135) D89: (273.0, 273.2, 289.89, 279.5, 279.50, 279.51, 279.52, 279.53, 279.41, 279.49, 279.8, 279.4, 279.9, 279, 289.8)

^aF10: 305.0, 305.00, 305.01, 305.02, 305.03, 291.89, 291.8, 291.82, 303.90, 303.91, 303.92, 303.93, 303.0, 303.00, 303.01, 303.02, 303.03, 291.0, 291.81, 291.89, 291.8, 291.2, 291.89, 291.82, 303.9, 291.4, 291.5, 291.3, 291.89, 291.8, 291.1, 291.89, 291.82, 291.8, 291.9, 291, 303
F11: 305.5, 305.50, 305.51, 305.52, 305.53, 292.89, 292.8, 292.85, 304.00, 304.01, 304.02, 304.03, 292.89, 292.8, 292.85, 304.0, 292.89, 292.8
F12: 305.20, 305.21, 305.22, 305.23, 292.89, 292.8, 304.30, 304.31, 304.32, 304.33, 292.89, 292.8, 304.3, 305.21, 305.22, 305.23, 305.2
F13: 305.4, 305.40, 305.41, 305.42, 305.43, 292.89, 292.8, 292.85, 304.10, 304.11, 304.12, 304.13, 304.1
F14: 305.6, 305.60, 305.61, 305.62, 305.63, 292.89, 292.8, 292.85, 304.20, 304.21, 304.22, 304.23, 304.2
F15: 305.7, 305.70, 305.71, 305.72, 305.73, 292.89, 292.8, 292.85, 304.40, 304.41, 304.42, 304.43, 304.4, 292.2
F16: 305.3, 305.30, 305.31, 305.32, 305.33, 292.89, 292.8, 304.50, 304.51, 304.52, 304.53, 304.5
F17: 305.1, 292.89, 292.8
F18: 305.9, 305.90, 305.91, 305.92, 305.93, 292.89, 292.8, 305
F19: 304, 305.80, 305.81, 305.82, 305.83, 292.89, 292.8, 292.85, 304.60, 304.61, 304.62, 304.70, 304.71, 304.72, 304.80, 304.81, 304.82, 304.90, 304.91, 304.92, 304.63, 304.73, 304.83, 304.93, 304.6, 304.7, 304.8, 304.9, 292.81, 292.0, 292.84, 292.11, 292.12, 292.1, 292.83, 292.82, 292.9, 292
^bI20-I25: 411, 413, 413.9, 413.0, 413.1, 411.1, 410, 410.7, 410.70, 410.71, 410.72, 410.9, 410.90, 410.91, 410.92, 410.82, 410.81, 410.80, 410.8, 410.62, 410.61, 410.60, 410.6, 410.52, 410.51, 410.50, 410.5, 410.42, 410.41, 410.40, 410.4, 410.22, 410.21, 410.20, 410.2, 410.32, 410.31, 410.30, 410.3, 410.12, 410.11, 410.10, 410.1, 410.02, 410.01, 410.00, 410.0, 429.79, 429.7, 411.81, 411.0, 411.89, 411.8, 414.9, 414.1, 414.0, 414, 414.8, 414.4, 414.3, 414.2, 414.07, 414.06, 414.02, 414.03, 414.04, 414.05, 414.8, 414.12, 414.11, 414.19, 414.10, 412, 429.2, 414.01, 414.00
^cI30-I-52: 420.91, 420.99, 420.90, 420, 420.9, 423.1, 423.2, 423.0, 423.3, 423.8, 423.9, 423, 420.0, 421.0, 421.9, 421, 424.0, 424.1, 424.2, 424.3, 424, 424.9, 424.90, 424.99, 424.91, 421.1, 115.94, 115.14, 115.04, 422.9, 422, 422.90, 422.93, 422.99, 422.91, 422.92, 422.0, 425.11, 425.18, 425.0, 425.3, 425.4, 425.5, 425.9, 425.2, 425.4, 425, 425.1, 425.7, 425.8, 426.1, 426.3, 426.2, 426.50, 426.10, 426.0, 426.13, 426.12, 426.11, 426, 426.9, 426.8, 426.89, 426.82, 426.81, 426.7, 426.6, 426.50, 426.54, 426.53, 426.52, 426.51, 426.4, 427.5, 427.0, 427.1, 427.2, 427.31, 427.32, 427.3, 427, 427.6, 427.8, 427.9, 427.89, 427.81, 427.6, 427.69, 427.60, 427.61, 427.4, 427.42, 427.41, 428, 428.0, 428.9, 428.4, 428.43, 428.42, 428.41, 428.40, 428.3, 428.33, 428.32, 428.31, 428.30, 428.2, 428.23, 428.22, 428.21, 428.20, 428.1, 429, 429.8, 429.9, 429.8, 429.81, 429.82, 429.89, 429.8, 429.83, 429.3, 429.1, 429.0, 429.89, 429.6, 429.5, 429.71

^dC81: 201, 201.0, 201.00, 201.01, 201.02, 201.03, 201.04, 201.05, 201.06, 201.08, 201.1, 201.10, 201.11, 201.12, 201.13, 201.14, 201.15, 201.17, 201.18, 201.2, 201.20, 201.21, 201.22, 201.23, 201.24, 201.25, 201.26, 201.27, 201.28, 201.4, 201.40, 201.41, 201.42, 201.43, 201.44, 201.45, 201.46, 201.47, 201.48, 201.5, 201.50, 201.51, 201.52, 201.53, 201.54, 201.55, 201.56, 201.57, 201.58, 201.6, 201.60, 201.61, 201.62, 201.63, 201.64, 201.65, 201.66, 201.67, 201.68, 201.7, 201.70, 201.71, 201.72, 201.73, 201.74, 201.75, 201.76, 201.77, 201.78, 201.9, 201.90, 201.91, 201.93, 201.94, 201.95, 201.96, 201.97, 201.98
C82: 202.0, 202.00, 202.01, 202.02, 202.03, 202.04, 202.05, 202.06, 202.07, 202.08
C83: 200.0, 200.1, 200.00, 200.01, 200.02, 200.03, 200.05, 200.06, 200.07, 200.08, 200.10, 200.11, 200.12, 200.14, 200.15, 200.16, 200.17, 200.18, 200.20, 200.21, 200.22, 200.23, 200.24, 200.25, 200.26, 200.27, 200.28, 200.3, 200.30, 200.31, 200.32, 200.33, 200.34, 200.35, 200.36, 200.37, 200.38, 200.4, 200.40, 200.41, 200.42, 200.43, 200.44, 200.45, 200.46, 200.47, 200.48, 200.5, 200.50, 200.51, 200.52, 200.53, 200.54, 200.55, 200.56, 200.57, 200.58, 200.7, 200.70, 200.71, 200.72, 200.73, 200.75, 200.76, 200.77, 200.78, 200.8, 200.80, 200.81, 200.82, 200.83, 200.84, 200.85, 200.86, 200.87, 200.88
C84: 200.6, 200.60, 200.61, 200.62, 200.63, 200.64, 200.65, 200.66, 200.67, 200.68, 202.1, 202.10, 202.11, 202.12, 202.13, 202.14, 202.15, 202.16, 202.17, 202.18, 202.2, 202.20, 202.20, 202.21, 202.22, 202.23, 202.24, 202.25, 202.26, 202.27, 202.28, 202.7, 202.70, 202.71, 202.72, 202.73, 202.74, 202.75, 202.76, 202.77, 202.78, 202.83
C85: 202.80, 202.81, 202.82, 202.83, 202.84, 202.85, 202.86, 202.87, 202.88
C86: -
C88: 273.3, 203.80, 203.82
C90: 203.0, 203.00, 203.01, 203.02, 203.1, 203.10, 203.11, 203.12, 203.80, 203.81, 203.82
C91: 202.4, 202.40, 202.41, 202.42, 202.43, 202.45, 202.46, 202.47, 202.48, 204, 204.0, 204.00, 204.01, 204.02, 204.1, 204.10, 204.11, 204.12, 204.2, 204.20, 204.21, 204.22, 204.8, 204.80, 204.81, 204.82, 204.9, 204.90, 204.91, 204.92
C92: 205, 205.0, 205.00, 205.01, 205.02, 205.10, 205.11, 205.12, 205.1, 205.2, 205.20, 205.21, 205.22, 205.3, 205.30, 205.31, 205.32, 205.8, 205.80, 205.81, 205.82, 205.9, 205.90, 205.91, 205.92
C93: 206, 206.0, 206.00, 206.01, 206.02, 206.1, 206.10, 206.11, 206.12, 206.2, 206.20, 206.21, 206.22, 206.8, 206.80, 206.81, 206.82, 206.9, 206.90, 206.91, 206.92
C94: 207, 207.0, 207.00, 207.01, 207.02, 207.2, 207.20, 207.21, 207.22, 207.8, 207.80, 207.81, 207.82, 238.7, 238.79
C95: 208, 208.0, 208.00, 208.01, 208.02, 208.1, 208.10, 208.11, 208.12, 208.2, 208.20, 208.21, 208.22, 208.8, 208.80, 208.81, 208.82, 208.9, 208.90, 208.91, 208.92
C96: 202.5, 202.50, 202.51, 202.52, 202.53, 202.54, 202.55, 202.57, 202.58, 202.6, 202.60, 202.61, 202.62, 202.63, 202.64, 202.65, 202.66, 202.67, 202.68, 202.90, 202.91, 202.92, 202.93, 202.94, 202.95, 202.96, 202.97, 202.98, 202.3, 202.30, 202.31, 202.32, 202.33, 202.34, 202.35, 202.36, 202.37, 202.38, 202, 202.9, 277.8, 277.89
^eI30-I-52: 420.91, 420.99, 420.90, 420, 420.9, 423.1, 423.2, 423.0, 423.3, 423.8, 423.9, 423, 420.0, 421.0, 421.9, 421, 424.0, 424.1, 424.2, 424.3, 424, 424.9, 424.90, 424.99, 424.91, 421.1, 115.94, 115.14, 115.04, 422.9, 422, 422.90, 422.93, 422.99, 422.91, 422.92, 422.0, 425.11, 425.18, 425.0, 425.3, 425.4, 425.5, 425.9, 425.2, 425.4, 425, 425.1, 425.7, 425.8, 426.1, 426.3, 426.2, 426.50, 426.10, 426.0, 426.13, 426.12, 426.11, 426, 426.9, 426.8, 426.89, 426.82, 426.81, 426.7, 426.6, 426.50, 426.54, 426.53, 426.52, 426.51, 426.4, 427.5, 427.0, 427.1, 427.2, 427.31, 427.32, 427.3, 427, 427.6, 427.8, 427.9, 427.89, 427.81, 427.6, 427.69, 427.60, 427.61, 427.4, 427.42, 427.41, 428, 428.0, 428.9, 428.4, 428.43, 428.42, 428.41, 428.40, 428.3, 428.33, 428.32, 428.31, 428.30, 428.2, 428.23, 428.22, 428.21, 428.20, 428.1, 429, 429.8, 429.9, 429.8, 429.81, 429.82, 429.89, 429.8, 429.83, 429.3, 429.1, 429.0, 429.89, 429.6, 429.5, 429.71

Supplemental Table 7a. The risk ratios for COPC on long COVID features in the COVID cohort^a

Long COVID defined as 3 or more features						
Long COVID features	With COPC		Without COPC		Risk Ratio	(95% CI)
	n	%	n	%		
All long COVID features	74,946	20.4%	34,869	9.5%	1.68	(1.66, 1.69)
Chest/Throat Pain	36,259	9.9%	17,963	4.9%	1.55	(1.53, 1.57)
Abnormal Breathing	44,132	12.0%	23,104	6.3%	1.50	(1.48, 1.52)
Abdominal Symptoms	40,616	11.1%	19,406	5.3%	1.60	(1.58, 1.61)
Fatigue	37,302	10.2%	19,246	5.2%	1.51	(1.49, 1.53)
Anxiety/Depression	50,023	13.6%	21,255	5.8%	1.75	(1.73, 1.77)
Anxiety	39,138	10.7%	16,238	4.4%	1.76	(1.74, 1.79)
Depression	35,331	9.6%	14,611	4.0%	1.76	(1.74, 1.79)
Pain	40,937	11.1%	16,874	4.6%	1.77	(1.75, 1.80)
Headache	37,436	10.2%	12,703	3.5%	2.04	(2.01, 2.08)
Cognitive Symptoms	18,373	5.0%	10,365	2.8%	1.40	(1.38, 1.42)
Myalgia	16,317	4.4%	6,983	1.9%	1.69	(1.66, 1.72)
Long COVID defined as 4 or more features						
Long COVID features	With COPC		Without COPC		Risk Ratio	(95% CI)
	n	%	n	%		
All long COVID features	45,589	12.4%	19,851	5.4%	1.71	(1.69, 1.73)
Chest/Throat Pain	28,109	7.7%	13,212	3.6%	1.60	(1.57, 1.62)
Abnormal Breathing	33,095	9.0%	16,037	4.4%	1.57	(1.55, 1.59)
Abdominal Symptoms	30,489	8.3%	13,970	3.8%	1.63	(1.61, 1.65)
Fatigue	28,474	7.8%	13,657	3.7%	1.58	(1.55, 1.60)
Anxiety/Depression	33,104	9.0%	12,958	3.5%	1.83	(1.80, 1.86)
Anxiety	26,373	7.2%	9,947	2.7%	1.87	(1.84, 1.90)
Depression	24,346	6.6%	9,216	2.5%	1.86	(1.83, 1.89)
Pain	30,493	8.3%	12,686	3.5%	1.75	(1.72, 1.77)
Headache	27,667	7.5%	10,168	2.8%	1.91	(1.88, 1.94)
Cognitive Symptoms	14,683	4.0%	7,457	2.0%	1.50	(1.47, 1.53)
Myalgia	14,041	3.8%	6,089	1.7%	1.67	(1.64, 1.71)

^an = 734,722 patients

Supplemental Table 7b. The risk ratios for COPC on long COVID features in the influenza cohort^a

Long COVID defined as 3 or more features						
	With COPC n = 90,901		Without COPC n = 90,901		Risk Ratio	(95% CI)
Long COVID features	n	%	n	%		
All long COVID features	35,949	39.5%	24,332	26.8%	1.36	(1.34, 1.37)
Chest/Throat Pain	25,849	28.4%	18,396	20.2%	1.27	(1.25, 1.28)
Abnormal Breathing	29,209	32.1%	20,986	23.1%	1.27	(1.26, 1.29)
Abdominal Symptoms	27,393	30.1%	19,005	20.9%	1.30	(1.28, 1.31)
Fatigue	24,038	26.4%	16,771	18.4%	1.28	(1.26, 1.30)
Anxiety/Depression	23,964	26.4%	14,178	15.6%	1.44	(1.42, 1.46)
Anxiety	18,660	20.5%	10,518	11.6%	1.46	(1.44, 1.48)
Depression	17,266	19.0%	9,799	10.8%	1.45	(1.42, 1.47)
Pain	29,633	32.6%	20,002	22.0%	1.33	(1.32, 1.35)
Headache	24,373	26.8%	14,715	16.2%	1.42	(1.40, 1.44)
Cognitive Symptoms	13,378	14.7%	9,122	10.0%	1.27	(1.25, 1.29)
Myalgia	14,996	16.5%	9,566	10.5%	1.33	(1.31, 1.35)
Long COVID defined as 4 or more symptoms						
	With COPC n = 90,901		Without COPC n = 90,901		Risk Ratio	(95% CI)
Long COVID features	n	%	n	%		
All long COVID features	30,039	33.0%	20,205	22.2%	1.34	(1.32, 1.35)
Chest/Throat Pain	24,348	26.8%	17,138	18.9%	1.27	(1.26, 1.29)
Abnormal Breathing	26,859	29.5%	18,824	20.7%	1.29	(1.27, 1.30)
Abdominal Symptoms	25,183	27.7%	17,388	19.1%	1.29	(1.28, 1.31)
Fatigue	22,492	24.7%	15,592	17.2%	1.28	(1.26, 1.30)
Anxiety/Depression	21,029	23.1%	12,395	13.6%	1.43	(1.41, 1.45)
Anxiety	16,549	18.2%	9,256	10.2%	1.46	(1.43, 1.48)
Depression	15,265	16.8%	8,585	9.4%	1.45	(1.42, 1.47)
Pain	26,641	29.3%	17,929	19.7%	1.32	(1.31, 1.34)
Headache	22,548	24.8%	13,976	15.4%	1.38	(1.36, 1.40)
Cognitive Symptoms	12,716	14.0%	8,495	9.3%	1.28	(1.26, 1.30)
Myalgia	14,464	15.9%	9,316	10.2%	1.32	(1.30, 1.34)

^an = 181,802 patients

Supplemental Table 7c. The risk ratios for COPC on long COVID features in the non-infected cohort^a

Long COVID defined as 3 or more features						
	With COPC		Without COPC			
	n = 257,384		n = 257,384			
Long COVID features	n	%	n	%	Risk Ratio	(95% CI)
All long COVID features	8,451	3.3%	2,598	1.0%	1.57	(1.56, 1.59)
Chest/Throat Pain	2,315	0.9%	903	0.4%	1.45	(1.41, 1.49)
Abnormal Breathing	2,502	1.0%	1,068	0.4%	1.36	(1.32, 1.40)
Abdominal Symptoms	3,498	1.4%	1,222	0.5%	1.45	(1.43, 1.48)
Fatigue	2,800	1.1%	1,077	0.4%	1.47	(1.43, 1.51)
Anxiety/Depression	6,183	2.4%	1,803	0.7%	1.40	(1.38, 1.42)
Anxiety	5,102	2.0%	1,519	0.6%	1.38	(1.36, 1.40)
Depression	4,521	1.8%	1,286	0.5%	1.49	(1.46, 1.52)
Pain	4,015	1.6%	1,093	0.4%	1.94	(1.90, 1.99)
Headache	3,933	1.5%	729	0.3%	3.36	(3.24, 3.48)
Cognitive Symptoms	1,267	0.5%	491	0.2%	1.34	(1.30, 1.40)
Myalgia	1,367	0.5%	310	0.1%	2.34	(2.21, 2.48)
Long COVID defined as 4 or more features						
	With COPC		Without COPC			
	n = 257,384		n = 257,384			
Long COVID features	n	%	n	%	Risk Ratio	(95% CI)
All long COVID features	3,195	1.2%	897	0.3%	1.57	(1.56, 1.59)
Chest/Throat Pain	1,361	0.5%	530	0.2%	1.45	(1.41, 1.49)
Abnormal Breathing	1,526	0.6%	586	0.2%	1.36	(1.32, 1.40)
Abdominal Symptoms	1,833	0.7%	607	0.2%	1.45	(1.43, 1.48)
Fatigue	1,521	0.6%	519	0.2%	1.47	(1.43, 1.51)
Anxiety/Depression	2,427	0.9%	603	0.2%	1.40	(1.38, 1.42)
Anxiety	2,045	0.8%	496	0.2%	1.38	(1.36, 1.40)
Depression	1,857	0.7%	441	0.2%	1.49	(1.46, 1.52)
Pain	2,050	0.8%	566	0.2%	1.94	(1.90, 1.99)
Headache	1,830	0.7%	406	0.2%	3.36	(3.24, 3.48)
Cognitive Symptoms	711	0.3%	237	0.1%	1.34	(1.30, 1.40)
Myalgia	818	0.3%	207	0.1%	2.34	(2.21, 2.48)

^an = 514,758 patients