

Supplemental Information

SUPPLEMENTAL TABLE 4 Disease Conditions, Acute Illness Categories, and ICD Discharge Codes Used to Define COVID-Like Illness in the Study Population

COVID-19–Like Illness Disease Condition	ICD-10 Codes	ICD-9 Codes
Acute respiratory clinical diagnosis categories		
COVID-19 pneumonia		
Pneumonia caused by SARS-associated coronavirus	J12.81	NA
Pneumonia caused by coronavirus disease2019	J12.82	NA
Influenza pneumonia		
Influenza caused by identified novel influenza A virus with pneumonia	J09. × 1	488.81
Influenza caused by other identified influenza virus with pneumonia	J10.0	NA
Influenza caused by other identified influenza virus with unspecified type of pneumonia	J10.00	487.0
Influenza caused by other identified influenza virus with the same other identified influenza virus pneumonia	J10.01	487.0
Influenza caused by other identified influenza virus with other specified pneumonia	J10.08	487.0488.11
Influenza caused by unidentified influenza virus with pneumonia	J11.0	NA
Influenza caused by unidentified influenza virus with unspecified type of pneumonia	J11.00	487.0
Influenza caused by unidentified influenza virus with specified pneumonia	J11.08	487.0
Influenza with pneumonia	NA	487 ^a
Other viral pneumonia	J12 ^a	480 ^a
Bacterial and other pneumonia		
<i>Streptococcus pneumoniae</i> pneumonia	J13	481
Hemophilus influenzae pneumonia	J14	482.2
Other bacterial pneumonia	J15 ^a	482 ^a
Pneumonia caused by other specified organism	J16 ^a	483 ^a
Pneumonia in infectious diseases classified elsewhere	J17	484 ^a
Pneumonia, unspecified organism	J18 ^a	486
Influenza disease	J09 ^a , J10.1, J10.2, J10.8 ^a , J11.1, J11.2, J11.8 ^a ,	488 ^a
Acute respiratory distress syndrome	J80	518.82
Asthma acute exacerbation	J45.21, J45.22, J45.31, J45.32, J45.41, J45.42, J45.51, J45.52, J45.901, J45.902	493.01 493.02 493.11 493.12 493.21 493.22 493.91 493.92
Respiratory failure		
Acute respiratory failure	J96.0 ^a	518.81
Acute and chronic respiratory failure	J96.2 ^a	518.84
Respiratory arrest	R09.2	799.1
Other acute lower respiratory tract infections		
Acute bronchitis	J20 ^a	466.0
Acute bronchiolitis	J21 ^a	466.1 ^a
Unspecified acute lower respiratory infection	J22	519.8
Bronchitis, not specified as acute or chronic	J40	490
Simple and mucopurulent chronic bronchitis	J41 ^a	491 ^a
Unspecified chronic bronchitis	J42	491.9
Emphysema	J43 ^a	492 ^a
Bronchiectasis	J47 ^a	494 ^a
Abscess of lung and mediastinum	J85	513
Gangrene and necrosis of lung	J85.0	N/A
Abscess of lung without pneumonia	J85.2	513.0
Abscess of mediastinum	J85.3	513.1
Abscess of lung with pneumonia	J85.1	513.0
Pyothorax	J86 ^a	510 ^a
Acute sinusitis	J01 ^a	461 ^a
Acute upper respiratory tract infections	J00 ^a , J02 ^a –J06 ^a	460 ^a 462 ^a –465 ^a
Viral illness NOS	B34.9	790.8
Acute nonrespiratory clinical diagnosis categories		
Cause-unspecified acute gastroenteritis	A09, K52.9	009. ^a 558.9
Thrombosis	I82.210, I82.290, I82.220, I82.4 ^a , I82.6 ^a , I82.A1 ^a , I82.B1 ^a , I82.C1 ^a	453.4 ^a ,453.82 453.84 453.85 453.86 453.87
Acute myocarditis	I40.0, I40.1, I40.8, I40.9	422.9 ^a ,422.91 422.93 422.99 422.9

SUPPLEMENTAL TABLE 4 Continued

COVID-19–Like Illness Disease Condition	ICD-10 Codes	ICD-9 Codes
Acute respiratory illness signs and symptoms		
Hemoptysis	R04.2	786.3
Cough	R05, R05.1, R05.2, R05.4, R05.8, R05.9	786.2
Dyspnea unspecified	R06.00	786.09
Shortness of breath	R06.02	786.05
Acute respiratory distress	R06.03	NA
Stridor	R06.1	786.1
Wheezing	R06.2	786.07
Other abnormalities of breathing	R06.8	NA
Apnea, not elsewhere classified	R06.81	786.03
Tachypnea, NEC	R06.82	786.06
Other abnormalities of breathing or other symptoms involving head and neck	R06.89	784.99
Other dyspnea and respiratory abnormality	NA	786.09
Other symptoms involving respiratory system and chest	NA	786.9
Chest pain on breathing or painful respiration	R07.1	786.52
Asphyxia and hypoxemia	R09.0 ^a	NA
Asphyxia	R09.01	799.01
Hypoxemia	R09.02	799.02
Pleurisy	R09.1	511.0
Respiratory arrest	R09.2	799.1
Abnormal sputum	R09.3	786.4
Other specified symptoms and signs involving the circulatory and respiratory systems	R09.8 ^a	478.19 784.91 786.7
Acute febrile illness signs and symptoms		
Fever	R50 ^a	NA
Fever presenting with conditions classified elsewhere	R50.81	780.61
Fever unspecified	R50.9	780.60
Chills (without fever)	R68.83	780.64

ICD, *International Classification of Diseases*; NA, not applicable; NEC, not elsewhere classified; NOS, not otherwise specified.

^a Diagnosis codes with an asterisk have that specific code and all subcodes of that specific code included.

SUPPLEMENTAL TABLE 5 Estimated Date of Delta and Omicron Predominance at Contributing Sites

Site Name	Pre-Omicron Predominance Date (Includes Delta) ^a	Delta (Only) Predominance Date ^a	Omicron Predominance Date (As of 1/10/22) ^a
Baylor Scott & White Health (Texas)	09/11/2021–12/16/2021	9/11/2021 (start date for complete vaccination data and analyses)	12/16/2021
Columbia University (New York)	04/27/2021–12/18/2021	06/31/2021	12/18/2021
HealthPartners /Children's Minnesota (Minnesota and Wisconsin)	04/21/2021–12/25/2021	07/01/2021	12/25/2021
Intermountain Healthcare (Utah)	04/09/2021–12/24/2021	06/01/2021	12/24/2021
Kaiser Permanente Northern California (California)	04/30/2021–12/21/2021	06/23/2021	12/21/2021
Kaiser Permanente Northwest (Oregon and Washington)	04/28/2021–12/24/2021	06/30/2021	12/24/2021
Paso del Norte Health Information Exchange (Texas)	04/13/2021–12/29/2021	06/30/2021	12/29/2021
Regenstrief Institute (Indiana)	04/27/2021–12/25/2021	07/03/2021	12/26/2021
University of Colorado (Colorado)	05/22/2021–12/19/2021	06/03/2021	12/19/2021

^a Predominance was defined as the date when each variant accounted for $\geq 50\%$ of sequenced isolates, determined for each study site based on state and national surveillance data.

SUPPLEMENTAL TABLE 6 Clinical Characteristics of 5- to 17-Year-Olds Seeking Care in the Emergency Department or Urgent Care Setting With COVID-Like Illness, April 2021 to September 2022

COVID-19–Like Illness Diagnosis	5–17 Y, ^a N = 80 032			SMD ^b
	Total, n (%)	Negative SARS-CoV-2, N = 70 232, n (%)	Positive SARS-CoV-2, N = 9800, n (%)	
COVID-19 pneumonia	170 (0.2)	6 (0.0)	164 (1.7)	0.183
Influenza pneumonia	38 (0.0)	35 (0.0)	3 (0.0)	0.01
Other viral pneumonia	151 (0.2)	140 (0.2)	11 (0.1)	0.022
Bacterial pneumonia	1390 (1.7)	1274 (1.8)	116 (1.2)	0.052
Influenza disease	7661 (9.6)	7384 (10.5)	277 (2.8)	0.312
Acute respiratory distress syndrome	13 (0.0)	8 (0.0)	5 (0.1)	0.022
Asthma acute exacerbation	3214 (4.0)	3022 (4.3)	192 (2.0)	0.135
Respiratory failure	400 (0.5)	341 (0.5)	59 (0.6)	0.016
Other acute lower respiratory tract infection	1417 (1.8)	1311 (1.9)	106 (1.1)	0.065
Acute and chronic sinusitis	1057 (1.3)	974 (1.4)	83 (0.8)	0.051
Acute upper respiratory tract infections	45 157 (56.4)	39 765 (56.6)	5392 (55.0)	0.032
Viral illness NOS	9101 (11.4)	8025 (11.4)	1076 (11.0)	0.014
Cause-unspecified acute gastroenteritis	1512 (1.9)	1452 (2.1)	60 (0.6)	0.127
Thrombosis	34 (0.0)	29 (0.0)	5 (0.1)	0.005
Acute myocarditis	10 (0.0)	9 (0.0)	1 (0.0)	0.002
Acute respiratory illness signs or symptoms	20 659 (25.8)	17 590 (25.0)	3069 (31.3)	0.14
Acute febrile illness signs or symptoms	16 022 (20.0)	13 457 (19.2)	2565 (26.2)	0.168
Acute nonrespiratory illness signs or symptoms	12 952 (16.2)	10 968 (15.6)	1984 (20.2)	0.121

NOS, not otherwise specified.

^a No encounters for 16 to 17-y-olds from Paso del Norte Health Information Exchange were included.

^b SMD = standardized mean or proportion difference. An absolute SMD ≥ 0.20 indicates a nonnegligible difference in variable distributions between medical events for vaccinated versus unvaccinated patients; single SMD calculated by averaging pair-wise comparisons for patients with SARS-CoV-2–positive versus SARS-CoV-2–negative test results. For example, the age SMD calculation comparing negative SARS-CoV-2 test result and positive SARS-CoV-2 test result was generated by directly calculating the SMD for negative SARS-CoV-2 test result and positive SARS-CoV-2 test result.

SUPPLEMENTAL TABLE 7 Clinical Characteristics of 5 to 17-Year-Olds Hospitalized With a COVID-Like Illness, April 2021 to September 2022

COVID-19–Like Illness Diagnosis	5–17 Y, ^a N = 2917			SMD ^b
	Total, n (%)	Negative SARS-CoV-2, N = 2612, n (%)	Positive SARS-CoV-2, N = 305, n (%)	
COVID-19 pneumonia	155 (5.3)	12 (0.5)	143 (46.9)	1.304
Influenza pneumonia	26 (0.9)	25 (1.0)	1 (0.3)	0.079
Other viral pneumonia	185 (6.3)	177 (6.8)	8 (2.6)	0.197
Bacterial pneumonia	523 (17.9)	476 (18.2)	47 (15.4)	0.075
Influenza disease	153 (5.2)	151 (5.8)	2 (0.7)	0.294
Acute respiratory distress syndrome	45 (1.5)	31 (1.2)	14 (4.6)	0.204
Asthma acute exacerbation	811 (27.8)	765 (29.3)	46 (15.1)	0.347
Respiratory failure	801 (27.5)	700 (26.8)	101 (33.1)	0.138
Other acute lower respiratory tract infection	149 (5.1)	140 (5.4)	9 (3.0)	0.121
Acute and chronic sinusitis	38 (1.3)	37 (1.4)	1 (0.3)	0.117
Acute upper respiratory tract infections	465 (15.9)	435 (16.7)	30 (9.8)	0.202
Viral illness NOS	140 (4.8)	138 (5.3)	2 (0.7)	0.275
Cause-unspecified acute gastroenteritis	132 (4.5)	126 (4.8)	6 (2.0)	0.158
Thrombosis	49 (1.7)	40 (1.5)	9 (3.0)	0.096
Acute myocarditis	15 (0.5)	13 (0.5)	2 (0.7)	0.021
Acute respiratory illness signs or symptoms	1009 (34.6)	890 (34.1)	119 (39.0)	0.103
Acute febrile illness signs or symptoms	594 (20.4)	551 (21.1)	43 (14.1)	0.185
Acute nonrespiratory illness signs and symptoms	786 (26.9)	701 (26.8)	85 (27.9)	0.023

NOS, not otherwise specified.

^a No encounters for 16 to 17-y-olds from Paso del Norte Health Information Exchange were included.

^b SMD = standardized mean or proportion difference. An absolute SMD ≥ 0.20 indicates a nonnegligible difference in variable distributions between medical events for vaccinated versus unvaccinated patients; single SMD calculated by averaging pair-wise comparisons for patients with SARS-CoV-2–positive versus SARS-CoV-2–negative test results. For example, the age SMD calculation comparing negative SARS-CoV-2 test result and positive SARS-CoV-2 test result was generated by directly calculating the SMD for negative SARS-CoV-2 test result and positive SARS-CoV-2 test result.

SUPPLEMENTAL TABLE 8 Vaccine and SARS-CoV-2 Test Status of 5- to 17-Year-Olds Hospitalized and Admitted to the ICU With a COVID-Like Illness, April 2021 to September 2022

5–17-Year-Olds ^a	Days Since Dose, Median (IQR)	Total	SARS-CoV-2 Negative, n (Row %)	SARS-CoV-2 Positive, n (Row %)
Unvaccinated (referent)	NA	411	365 (89)	46 (11)
2 doses 14–59 days	36 (22–48)	32	32 (100)	0 (0)
2 doses 60–149 days	98 (80–128)	70	66 (94)	4 (6)
2 doses 150+ days	206 (167–233)	69	59 (85)	10 (15)
3 doses 7+ days	93 (59–105)	20	19 (95)	1 (5)

IQR, interquartile range; NA, not applicable.

^a No encounters for 16 to 17-y-olds from Paso del Norte Health Information Exchange were included.