

## Supplemental Online Content

Tartof SY, Frankland TB, Slezak JM, et al. Effectiveness associated with BNT162b2 vaccine against emergency department and urgent care encounters for Delta and Omicron SARS-CoV-2 infection among adolescents aged 12 to 17 years. *JAMA Netw Open*. 2022;5(8):e2225162. doi:10.1001/jamanetworkopen.2022.25162

**eTable 1.** Acute Respiratory Infection Codes, November 1, 2021, to March 18, 2022

**eTable 2.** Adjusted Effectiveness Associated With BNT162b2 Against Emergency Department or Urgent Care Encounters (Without Subsequent Hospitalization) for Delta- or Omicron-Related Acute Respiratory Illness

**eTable 3.** Unadjusted and Adjusted Effectiveness Associated With BNT162b2 Against Emergency Department or Urgent Care Encounters (Without Subsequent Hospitalization) for Delta- or Omicron-Related Acute Respiratory Illness Among Patients Without Prior Documented SARS-CoV-2 Infection

This supplemental material has been provided by the authors to give readers additional information about their work.

**eTable 1.** Acute Respiratory Infection Codes, November 1, 2021, to March 18, 2022

A48.1	LEGIONNAIRES' DISEASE
B34.2	CORONAVIRUS INFECTION, UNSPECIFIED
B44.0	INVASIVE PULMONARY ASPERGILLOSIS
B97.29	OTH CORONAVIRUS AS THE CAUSE OF DISEASES CLASSD ELSWHR
J00	ACUTE NASOPHARYNGITIS (COMMON COLD)
J01.00	ACUTE MAXILLARY SINUSITIS, UNSPECIFIED
J01.10	ACUTE FRONTAL SINUSITIS, UNSPECIFIED
J01.20	ACUTE ETHMOIDAL SINUSITIS, UNSPECIFIED
J01.30	ACUTE SPHENOIDAL SINUSITIS, UNSPECIFIED
J01.40	ACUTE PANSINUSITIS, UNSPECIFIED
J01.80	OTHER ACUTE SINUSITIS
J01.90	ACUTE SINUSITIS, UNSPECIFIED
J02.0	STREPTOCOCCAL PHARYNGITIS
J02.8	ACUTE PHARYNGITIS DUE TO OTHER SPECIFIED ORGANISMS
J02.9	ACUTE PHARYNGITIS, UNSPECIFIED
J03.00	ACUTE STREPTOCOCCAL TONSILLITIS, UNSPECIFIED
J03.90	ACUTE TONSILLITIS, UNSPECIFIED
J04.0	ACUTE LARYNGITIS
J04.10	ACUTE TRACHEITIS WITHOUT OBSTRUCTION
J05.0	ACUTE OBSTRUCTIVE LARYNGITIS (CROUP)
J05.10	ACUTE EPIGLOTTITIS WITHOUT OBSTRUCTION
J06.0	ACUTE LARYNGOPHARYNGITIS
J06.9	ACUTE UPPER RESPIRATORY INFECTION, UNSPECIFIED
J09.X1	INFLUENZA DUE TO IDENT NOVEL INFLUENZA A VIRUS W PNEUMONIA
J09.X2	FLU DUE TO IDENT NOVEL INFLUENZA A VIRUS W OTH RESP MANIFEST
J10.00	FLU DUE TO OTH IDENT FLU VIRUS W UNSP TYPE OF PNEUMONIA
J10.01	FLU DUE TO OTH IDENT FLU VIRUS W SAME OTH IDENT FLU VIRUS PN
J10.08	INFLUENZA DUE TO OTH IDENT INFLUENZA VIRUS W OTH PNEUMONIA
J10.1	FLU DUE TO OTH IDENT INFLUENZA VIRUS W OTH RESP MANIFEST
J10.2	INFLUENZA DUE TO OTH IDENT INFLUENZA VIRUS W GI MANIFEST
J11.00	FLU DUE TO UNIDENTIFIED FLU VIRUS W UNSP TYPE OF PNEUMONIA
J11.08	FLU DUE TO UNIDENTIFIED FLU VIRUS W SPECIFIED PNEUMONIA
J11.1	FLU DUE TO UNIDENTIFIED INFLUENZA VIRUS W OTH RESP MANIFEST
J12.1	RESPIRATORY SYNCYTIAL VIRUS PNEUMONIA
J12.2	PARAINFLUENZA VIRUS PNEUMONIA
J12.3	HUMAN METAPNEUMOVIRUS PNEUMONIA
J12.81	PNEUMONIA DUE TO SARS-ASSOCIATED CORONAVIRUS
J12.82	PNEUMONIA DUE TO CORONAVIRUS DISEASE 2019
J12.89	OTHER VIRAL PNEUMONIA
J12.9	VIRAL PNEUMONIA, UNSPECIFIED

J13	PNEUMONIA DUE TO STREPTOCOCCUS PNEUMONIAE
J14	PNEUMONIA DUE TO HEMOPHILUS INFLUENZAE
J15.0	PNEUMONIA DUE TO KLEBSIELLA PNEUMONIAE
J15.1	PNEUMONIA DUE TO PSEUDOMONAS
J15.20	PNEUMONIA DUE TO STAPHYLOCOCCUS, UNSPECIFIED
J15.211	PNEUMONIA DUE TO METHICILLIN SUSCEP STAPH
J15.212	PNEUMONIA DUE TO METHICILLIN RESISTANT STAPHYLOCOCCUS AUREUS
J15.4	PNEUMONIA DUE TO OTHER STREPTOCOCCI
J15.5	PNEUMONIA DUE TO ESCHERICHIA COLI
J15.6	PNEUMONIA DUE TO OTHER AEROBIC GRAM-NEGATIVE BACTERIA
J15.7	PNEUMONIA DUE TO MYCOPLASMA PNEUMONIAE
J15.8	PNEUMONIA DUE TO OTHER SPECIFIED BACTERIA
J15.9	UNSPECIFIED BACTERIAL PNEUMONIA
J16.8	PNEUMONIA DUE TO OTHER SPECIFIED INFECTIOUS ORGANISMS
J18.0	BRONCHOPNEUMONIA, UNSPECIFIED ORGANISM
J18.1	LOBAR PNEUMONIA, UNSPECIFIED ORGANISM
J18.8	OTHER PNEUMONIA, UNSPECIFIED ORGANISM
J18.9	PNEUMONIA, UNSPECIFIED ORGANISM
J20.2	ACUTE BRONCHITIS DUE TO STREPTOCOCCUS
J20.5	ACUTE BRONCHITIS DUE TO RESPIRATORY SYNCYTIAL VIRUS
J20.6	ACUTE BRONCHITIS DUE TO RHINOVIRUS
J20.8	ACUTE BRONCHITIS DUE TO OTHER SPECIFIED ORGANISMS
J20.9	ACUTE BRONCHITIS, UNSPECIFIED
J22	UNSPECIFIED ACUTE LOWER RESPIRATORY INFECTION
J39.0	RETROPHARYNGEAL AND PARAPHARYNGEAL ABSCESS
J39.1	OTHER ABSCESS OF PHARYNX
J39.2	OTHER DISEASES OF PHARYNX
J39.8	OTHER SPECIFIED DISEASES OF UPPER RESPIRATORY TRACT
J80	ACUTE RESPIRATORY DISTRESS SYNDROME
J96.00	ACUTE RESPIRATORY FAILURE, UNSP W HYPOXIA OR HYPERCAPNIA
J96.01	ACUTE RESPIRATORY FAILURE WITH HYPOXIA
J96.02	ACUTE RESPIRATORY FAILURE WITH HYPERCAPNIA
J96.10	CHRONIC RESPIRATORY FAILURE, UNSP W HYPOXIA OR HYPERCAPNIA
J96.11	CHRONIC RESPIRATORY FAILURE WITH HYPOXIA
J96.12	CHRONIC RESPIRATORY FAILURE WITH HYPERCAPNIA
J96.20	ACUTE AND CHR RESP FAILURE, UNSP W HYPOXIA OR HYPERCAPNIA
J96.21	ACUTE AND CHRONIC RESPIRATORY FAILURE WITH HYPOXIA
J96.22	ACUTE AND CHRONIC RESPIRATORY FAILURE WITH HYPERCAPNIA
J96.90	RESPIRATORY FAILURE, UNSP, UNSP W HYPOXIA OR HYPERCAPNIA
J96.91	RESPIRATORY FAILURE, UNSPECIFIED WITH HYPOXIA
J96.92	RESPIRATORY FAILURE, UNSPECIFIED WITH HYPERCAPNIA

M35.81	MULTISYSTEM INFLAMATORY SYNDROME
M35.89	OTHER SPECIFIED SYSTEMIC INVOLVMENT OF CONNECTIVE TISSUE
R05.1	ACUTE COUGH
R05.3	CHRONIC COUGH
R05.4	COUGH SYNCOPE
R05.8	OTHER SPECIFIED COUGH
R05.9	COUGH, UNSPECIFIED
R09.2	RESPIRATORY ARREST
R50.9	FEVER, UNSPECIFIED
U07.1	COVID-19

**eTable 2.** Adjusted Effectiveness Associated With BNT162b2 Against Emergency Department or Urgent Care Encounters (Without Subsequent Hospitalization) for Delta- or Omicron-Related Acute Respiratory Illness

Vaccine effectiveness and 95% confidence intervals based on results from multivariable logistic regression analysis comparing adolescents 12–17 years of age who received the two-dose primary or a third (booster) dose of BNT162b2 compared to the unvaccinated adjusted for age, sex, race/ethnicity, BMI, prior positive PCR test, pediatric comorbidity index, and admission date. Sample size was insufficient to determine effectiveness of three doses of BNT162b2 against delta.

	Time since completion of two-dose primary series								Time since completion of three-doses (booster)
	<2 months		2-4 months		4-6 months		≥6 months		Median 19 days
	Delta	Omicron	Delta	Omicron	Delta	Omicron	Delta	Omicron	Omicron
<b>Unadjusted Vaccine Effectiveness (95% CI)</b>	87 (66- 95)	72 (54- 83)	65 (42- 79)	47 (27- 61)	67 (52- 78)	50 (36- 61)	28 (1- 48)	-31 (-62- -6)	91 (82 – 95)
<b>Adjusted Vaccine Effectiveness (95% CI)</b>	89 (69- 96)	73 (54- 84)	68 (46- 81)	38 (14- 56)	71 (57- 81)	45 (28- 57)	49 (27- 65)	16 (-7- 34)	87 (72-94)
<b>Test-Negative Case-Control Status</b>									
<b>Vaccinated Cases</b>	22		78		149		280		10
<b>Unvaccinated Cases</b>	439		439		439		439		439
<b>Vaccinated Controls</b>	158		268		544		408		99
<b>Unvaccinated Controls</b>	713		713		713		713		713

**eTable 3.** Unadjusted and Adjusted Effectiveness Associated With BNT162b2 Against Emergency Department or Urgent Care Encounters (Without Subsequent Hospitalization) for Delta- or Omicron-Related Acute Respiratory Illness Among Patients Without Prior Documented SARS-CoV-2 Infection  
Vaccine effectiveness and 95% confidence intervals based on results from multivariable logistic regression analysis comparing adolescents 12–17 years of age who received the two-dose primary or a third (booster) dose of BNT162b2 compared to the unvaccinated adjusted for age, sex, race/ethnicity, BMI, prior positive PCR test, pediatric comorbidity index, and admission date. Sample size was insufficient to determine effectiveness of two or three doses among those with documented prior SARS-CoV-2 infection and among those with three doses of BNT162b2 against delta.

	Overall two-dose primary series		Time since completion of two-dose primary series								Time since completion of three-doses (booster)
			<2 months		2-4 months		4-6 months		≥6 months		Median 19 days
	Delta	Omicron	Delta	Omicron	Delta	Omicron	Delta	Omicron	Delta	Omicron	Omicron
<b>Unadjusted Vaccine Effectiveness (95% CI)</b>	59 (47- 69)	32 (19- 44)	88 (67- 96)	73 (54- 84)	65 (42- 79)	47 (27- 62)	69 (54- 79)	54 (41- 65)	32 (5- 51)	-22 (-52- 2)	91 (83- 96)
<b>Adjusted Vaccine Effectiveness (95% CI)</b>	64 (53- 73)	37 (23- 49)	88 (68- 96)	72 (52- 84)	66 (44- 80)	35 (9- 54)	70 (56- 80)	46 (29- 59)	47 (23- 63)	18 (-6- 36)	87 (71 - 95)