



COVID-19 for Pediatric Populations

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Disclosures

- No financial disclosures
- What gets said here today may change based on new data and recommendations
 - Knowledge is shared more rapidly through ECHO



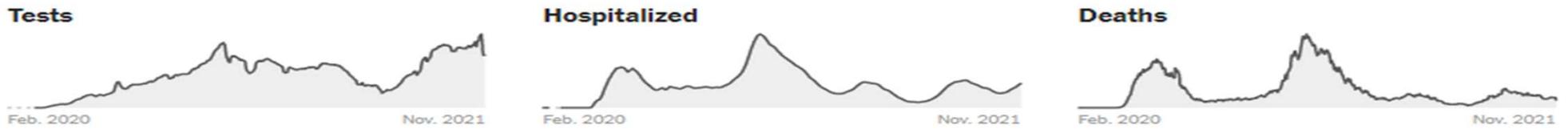
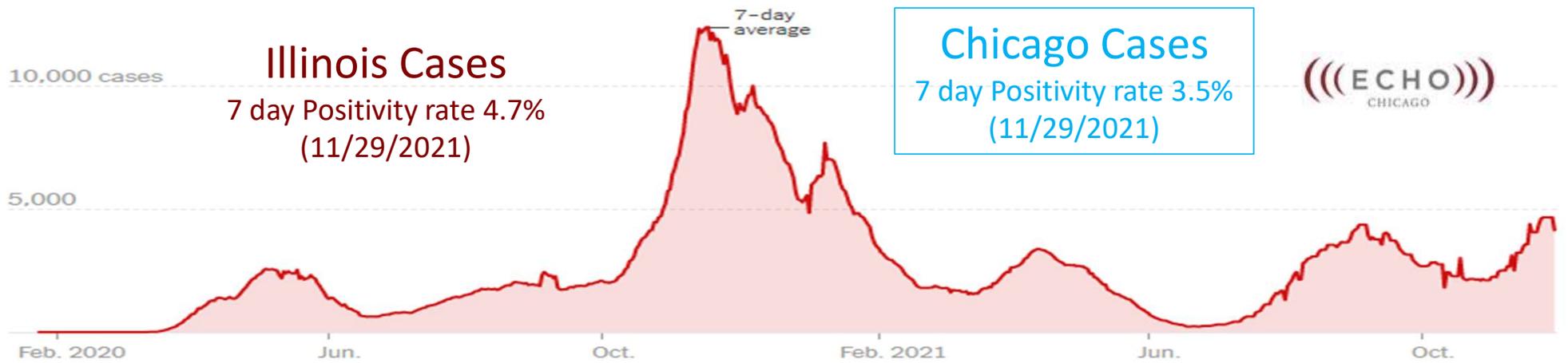
Agenda



- Epidemiology
 - Omicron
- Schools
- Treatment
- Vaccine
- Q & A

Epidemiology

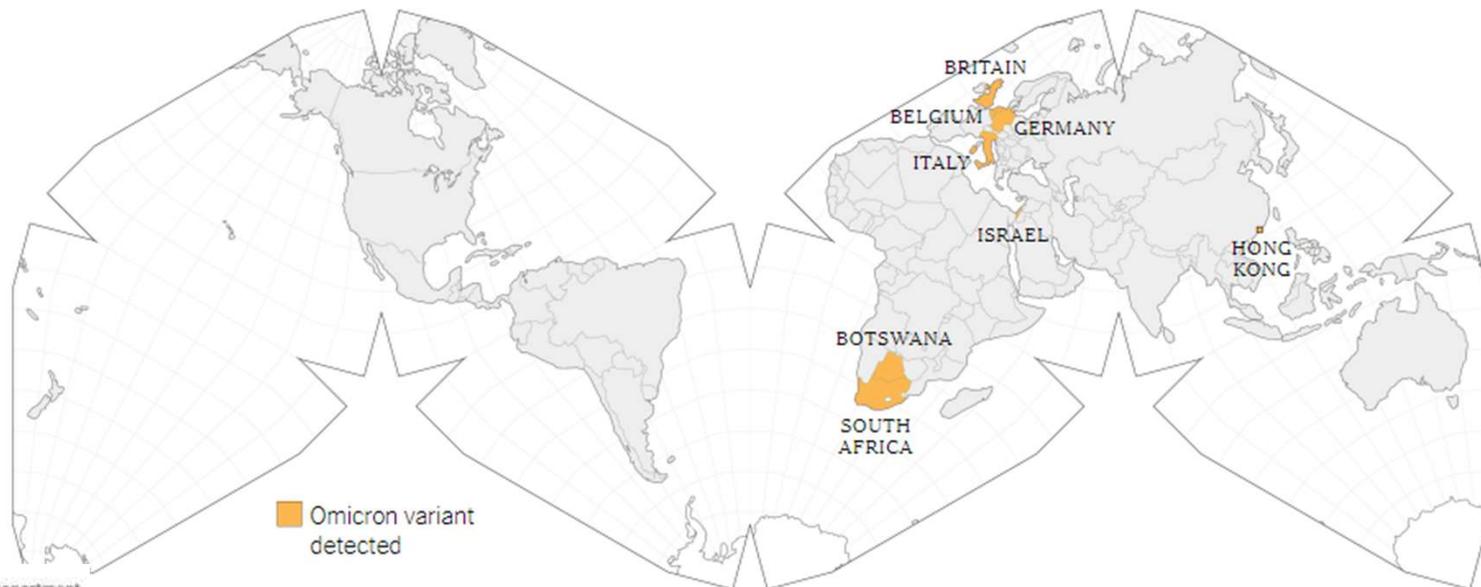




	DAILY AVG. ON NOV. 29	14-DAY CHANGE	TOTAL REPORTED
Cases	4,138	+20%	1,809,427
Tests	76,659	-16%	—
Hospitalized	2,051	+32%	—
Deaths	19	-14%	29,349

Omicron

(11/28/2021)



Variants

- **Omicron** carries about 50 mutations not seen in combination before, including >30 mutations on the spike protein

<https://www.nytimes.com/interactive/2021/health/coronavirus-variant-tracker.html?referringSource=articleShare>

Current variants of concern

Name	Lineage	Status
Omicron	B.1.1.529	Identified in southern Africa in Nov. 2021.
Delta	B.1.617.2	Emerged in India in late 2020 and spread around the world. Delta carries the L452R spike mutation, among others.
Gamma	P.1	Emerged in Brazil in late 2020.
Beta	B.1.351	Emerged in South Africa in early 2020.
Alpha	B.1.1.7	Emerged in Britain in late 2020.

Current variants of interest

Name	Lineage	Status
Mu	B.1.621	Emerged in Colombia in early 2021.
Lambda	C.37	Emerged in Peru in late 2020.

Mutations that may help the coronavirus spread

Mutation	Lineage	Status
D614G	B.1	Appeared in early 2020 and spread around the world.
N501Y	Several	A defining mutation in several lineages, including B.1.1.7 (Alpha), B.1.351 (Beta) and P.1 (Gamma). Helps the virus bind more tightly to human cells.
E484K or "Eek"	Several	Appears in several lineages. May help the virus avoid some kinds of antibodies.
K417	Several	Appears in several lineages, including B.1.351 (Beta) and P.1 (Gamma). May help the virus bind more tightly to cells.
L452R	Several	Appears in several lineages, including B.1.617.2 (Delta).

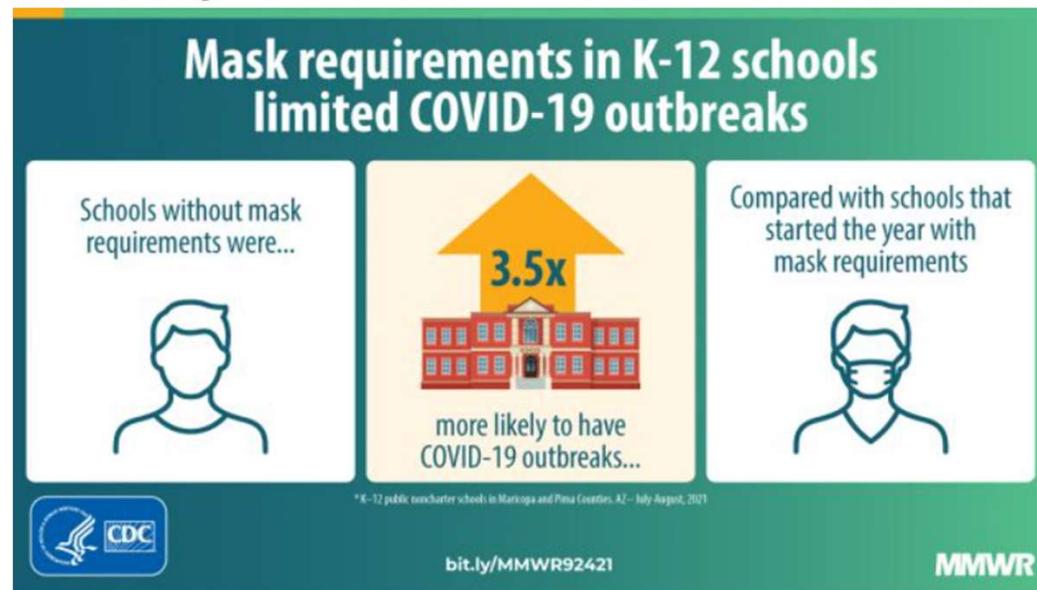
What Can You Do to Protect Yourself and Others?

- Getting fully vaccinated and receiving boosters is the best way to prevent the spread of SARS-CoV-2
- Layered prevention strategies that include vaccination, testing, masking in indoor public spaces and at large gathering outdoors
- Encourage/push severely immunocompromised hosts to be vaccinated and to be vigilant preventing infection since it is prolonged infection in those hosts that most likely generate variants

Schools

Association Between K–12 School Mask Policies and School-Associated COVID-19 Outbreaks — Maricopa and Pima Counties, Arizona, July–August 2021

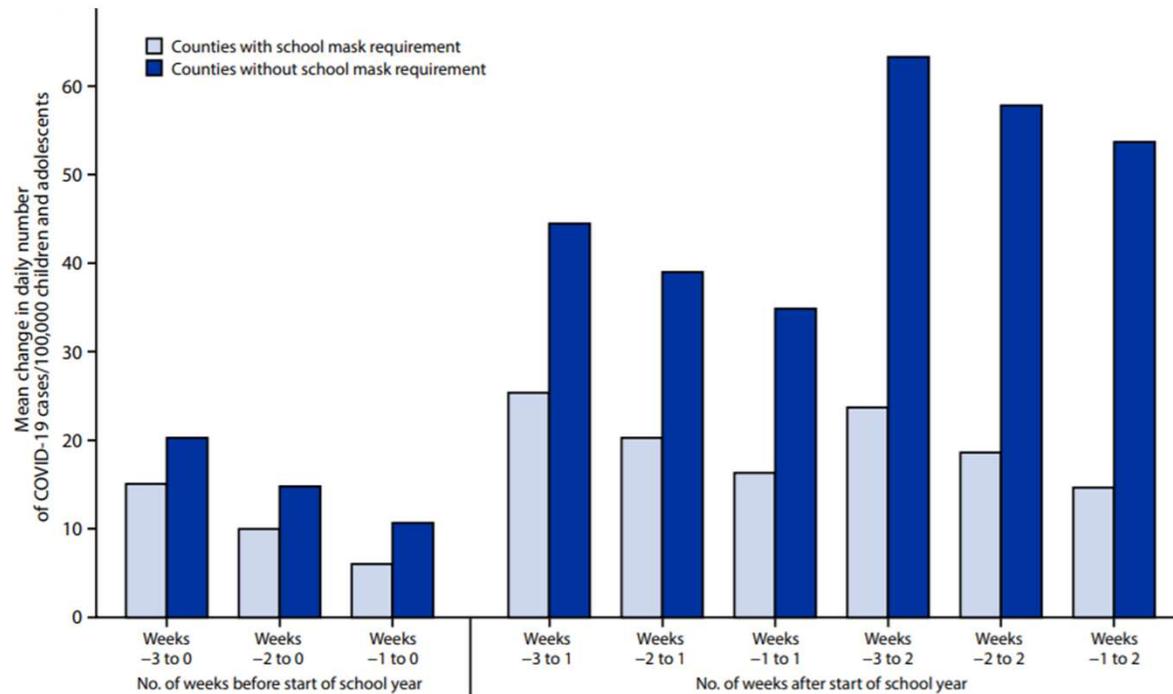
Megan Jehn, PhD^{1,*}; J. Mac McCullough, PhD^{2,*}; Ariella P. Dale, PhD^{3,4}; Matthew Gue¹; Brian Eller⁵; Theresa Cullen, MD⁵; Sarah E. Scott, MD⁴



https://www.cdc.gov/mmwr/volumes/70/wr/mm7039e1.htm?s_cid=mm7039e1_w

Pediatric COVID-19 Cases in Counties With and Without School Mask Requirements — United States, July 1–September 4, 2021

Samantha E. Budzyn, MPH^{1,2}; Mark J. Panaggio, PhD³; Sharyn E. Parks, PhD¹; Marc Papazian⁴; Jake Magid, MEng⁴; Lisa C. Barrios, DrPH¹



* Among 520 counties, 198 (38%) had a school mask requirement and 322 (62%) did not have a school mask requirement.

Is Quarantining Required

- Douglas County, Nebraska: Implemented layered mitigation strategies (masking, 3 ft apart when possible, 6 ft at lunch) and eliminated quarantine requirements
 - Recorded exceptionally low rates of secondary transmission of COVID-19 (0.1%) in schools during a time of high community prevalence and zero cases following mask on mask exposures

Pediatrics. 2021; doi: 10.1542/peds.2021-054268L

- Salt Lake City, Utah: a high community transmission setting, and low school-associated transmission observed (0.7%) secondary attack rate with high mask adherence and students a median of 3 ft apart

MMWR, March 26, 2021 / 70(12);442–448

How About Distancing and Secondary Transmission Risk?

- School setting in North Carolina

	Districts, n (%) ^a	Students, n (%)	Student Primary Infections, n	Student Secondary Infections, n	Secondary-to- primary Infection Ratio ^b	Relative Rate of Secondary Transmission ^c	95% CIs ^d
Bus practice (children per seat)							
1	13	36,975	190	12	0.06		
2	17	656,444	4388	210	0.05	0.76	0.19 - 2.96
3	17	205,996	1758	83	0.04	0.75	0.18 - 3.19
Other ^e	6	43,519	353	25	0.07	1.12	0.27 - 4.71
Distancing							
6 feet	10 (9%)	54,557	276	12	0.04		
3 feet	76 (67%)	610,236	4140	207	0.05	1.15	0.31 - 4.24
<3 feet	27 (24%)	278,141	2273	111	0.05	1.12	0.28 - 4.45

- No difference based on distance

Pediatrics. 2021; doi: 10.1542/peds.2021-054268K

When Can We Stop Wearing a Mask in School?

- Need to decide what is our goal – possibilities:
 - Zero infections?
 - Zero deaths?
 - Reducing transmission of other respiratory pathogens?
 - Protection of immune-compromised people and others who can't respond to the vaccine?
 - School risk similar to influenza?
 - What aspect of influenza?
 - Infection number?
 - Hospitalizations?
 - Deaths?

Treatment

Steroids and/or Remdesivir

No Oxygen Requirement, O2Sat >94% RA	O2Sat ≤94% on RA	Low flow NC	High flow NC, non-invasive ventilation	Mechanical ventilation, ECMO [§]
<ul style="list-style-type: none">•No specific therapy recommended•Supportive care	<ul style="list-style-type: none">•Supportive care•Remdesivir* <i>may be considered</i> if high risk for clinical progression[^]	<ul style="list-style-type: none">•Remdesivir* +/-•Dexamethasone †,‡	<ul style="list-style-type: none">•Dexamethasone‡•Remdesivir <i>may be considered</i> if within 7 days of symptom onset[†]	<ul style="list-style-type: none">•Dexamethasone‡

[^]High risk criteria for clinical progression: obesity (BMI >25), CKD, DM, pregnancy, CVD, HTN, medical related technological dependence (e.g. tracheostomy), chronic lung disease, immune-compromise, sickle cell disease, neurodevelopmental disorders or other conditions that confer medical complexity

‡ If dexamethasone is not available, equivalent doses of prednisone (40mg q24hrs), methylprednisolone (32mg total daily dose; e.g. 8mg q6hrs or 16mg q12hrs), or hydrocortisone (150mg total daily dose; e.g. 50mg q8hrs) may be used. Pregnant

May consider remdesivir up to 10 days after onset of symptoms

Efficacy of Inhaled Ciclesonide for Outpatient Treatment of Adolescents and Adults With Symptomatic COVID-19

A Randomized Clinical Trial

Brian M. Clemency, DO; Renoj Varughese, MD; Yaneicy Gonzalez-Rojas, MD; Caryn G. Morse, MD, MPH; Wanda Phipatanakul, MD, MS; David J. Koster, MS; Michael S. Blaiss, MD

Figure 2. Kaplan-Meier Curve of Time to Alleviation of COVID-19-Related Symptoms

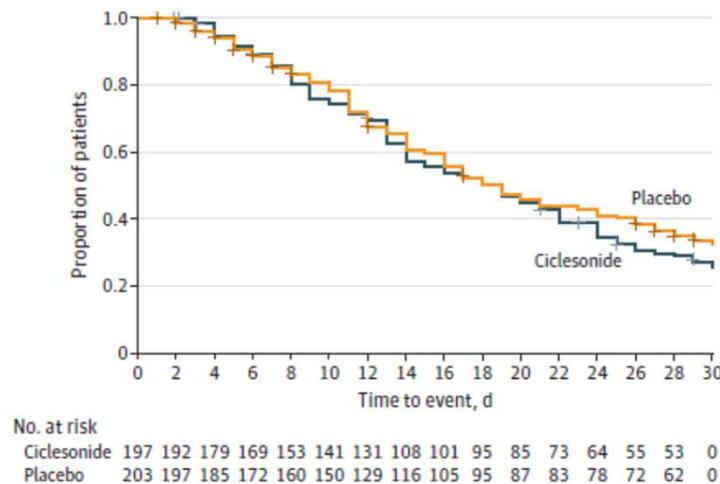


Table 2. Secondary Efficacy Outcomes

Secondary efficacy end point	No. (%)		Results, ciclesonide vs placebo, OR (95% CI)	P value
	Ciclesonide (n = 197)	Placebo (n = 203)		
Participants with subsequent emergency department visit or hospital admission for reasons related to COVID-19 by day 30, %	2 (1.0)	11 (5.4)	0.18 (0.04-0.85)	.03
Participants with hospital admission or death by day 30, % ³	3 (1.5)	7 (3.4)	0.45 (0.11-1.84)	.26
All-cause mortality by day 30	0	0	NA	NA
COVID-19-related mortality by day 30	0	0	NA	NA
Participants with alleviation of COVID-19-related symptoms by day 7, %	28 (14.2)	29 (14.3)	0.92 (0.51-1.66)	.79
Participants with alleviation of COVID-19-related symptoms by day 14, %	81 (41.1)	76 (37.4)	1.19 (0.78-1.81)	.43
Participants with alleviation of COVID-19-related symptoms by day 30, %	139 (70.6)	129 (63.5)	1.28 (0.84-1.97)	.25

Paxlovid™

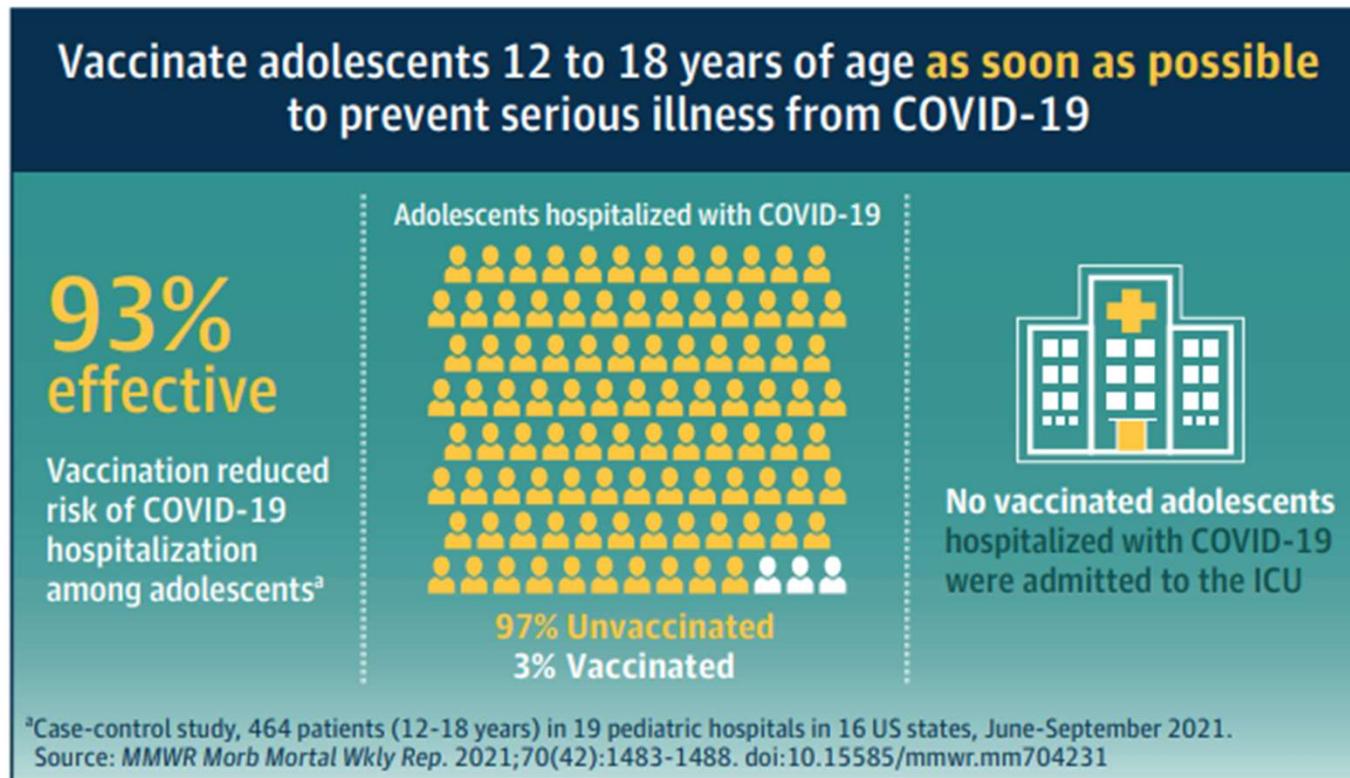
- Paxlovid is a combination of PF-07321332 and a low dose of ritonavir
- Disrupts the replication of SARS-CoV-2 by binding to the 3CL-like protease of COVID
- Use of the drug reduced hospitalization and death by 89% based on an interim analysis of the Phase 2/3 EPIC-HR (Evaluation of Protease Inhibition for COVID-19 in High-Risk Patients) randomized, double-blind study of non-hospitalized adult patients with COVID-19 at high risk of progressing to severe illness compared to placebo in patients treated within 3 days of symptom onset
 - 0.8% of patients who received PAXLOVID™ were hospitalized through Day 28 following randomization (3/389 hospitalized with no deaths), compared to 7.0% of patients who received placebo and were hospitalized or died (27/385 hospitalized with 7 subsequent deaths) ($p < 0.0001$)
 - Similar reductions in COVID-19-related hospitalization or death were observed in patients treated within five days of symptom onset; 1.0% of patients were hospitalized through Day 28 following randomization (6/607 hospitalized, with no deaths), compared to 6.7% of patients who received a placebo (41/612 hospitalized with 10 subsequent deaths) ($p < 0.0001$).
- Pfizer ceased further enrollment into the study due to the overwhelming efficacy
- No data in kids
- In process of FDA review

<https://www.pfizer.com/news/press-release/press-release-detail/pfizers-novel-covid-19-oral-antiviral-treatment-candidate>



COVID Vaccine

How Does It Work in Adolescents





Pfizer: Vaccine is 100 percent effective in adolescents

BY NATHANIEL WEIXEL - 11/22/21 02:02 PM EST

Pfizer and BioNTech's COVID-19 vaccine was 100 percent effective in protecting adolescents between the ages of 12 and 15, the companies announced Monday.

The results from a long-term trial of 2,228 youth, measured from seven days through more than four months after the second dose, will form the basis for a planned supplemental application to the Food and Drug Administration (FDA) to expand approval of the vaccine for use in individuals in that age group, the companies said.

The data were collected from November 2020 to September 2021, during the period when the delta variant began infecting large swaths of the U.S. population.

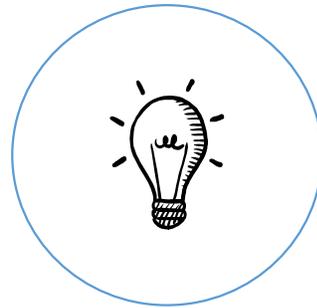
<https://thehill.com/policy/healthcare/582667-pfizer-vaccine-is-100-percent-effective-in-adolescents>

At Home Vaccination

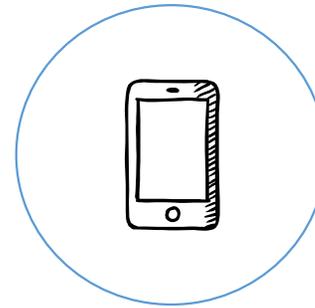
- ***Chicagoans can also get vaccinated at home for free. Sign up online at [Chicago.gov/athome](https://chicago.gov/athome) or by calling 312-746-4835. Cook County's health department is now offering free rides to vaccination appointments at its sites in the city and suburbs. Cook County residents who need a ride to a vaccination site can call 833-308-1988 to schedule it, according to a news release. The program is open to city dwellers who want a ride to a Cook County Health vaccination site in the city, as well as to suburbanites who want a ride to any vaccination site in suburban Cook. Residents can call for a ride and one should arrive in 30-60 minutes, though it's preferred people schedule it further in advance, according to the health department news release. The service is free.***



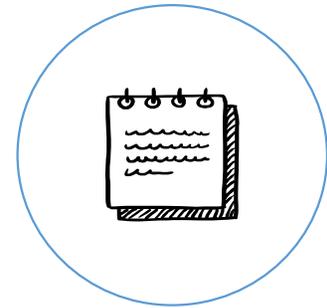
Foundational
Training



Learning
Collaboratives



Technical
Assistance



Toolkit & Outreach
Materials

Website: <https://www.illinoisvaccinates.com/>
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