I-VAC Pediatric Learning Collaborative for COVID-19 Vaccination

Please use your first name and health center name when you join the session

Use the **“chat”** feature to let us know if you have a question

Please remember to **mute your microphone** unless speaking

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I-VAC ILLINOIS VACCINATES AGAINST COVID-19

THE UNIVERSITY OF CHICAGO Department of Pediatrics Established 1930

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Disclosures

- No one in a position to control the education content of the activity has any relevant financial disclosures with ineligible companies to disclose.
- What gets said here today may change based on new data and recommendations
  - Knowledge is shared more rapidly through ECHO

Updates in COVID-19

Stephen Schrantz, MD

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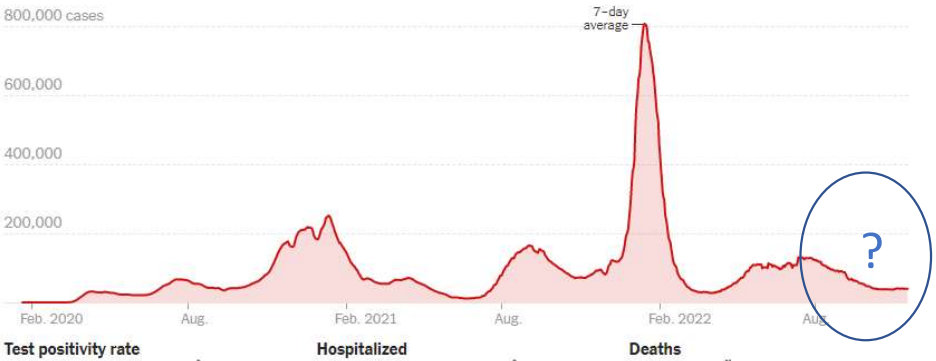
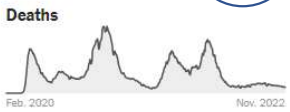
Coronavirus in the U.S.: Latest Map and Case Count

New reported cases

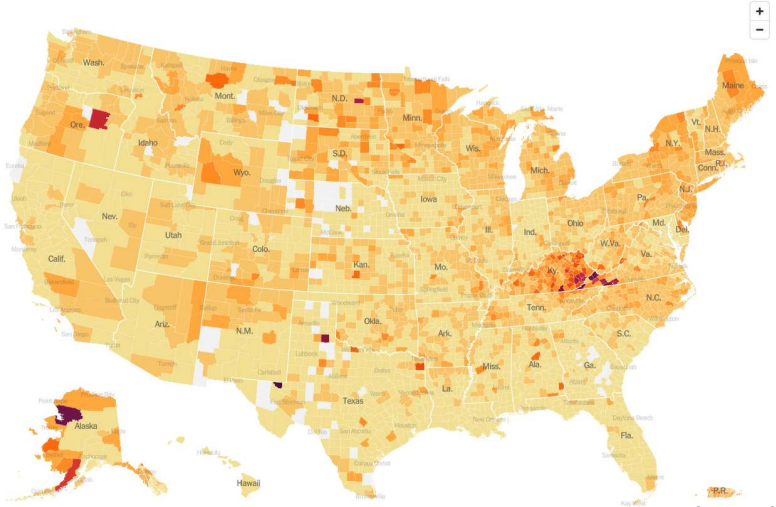
All time | Last 90 days



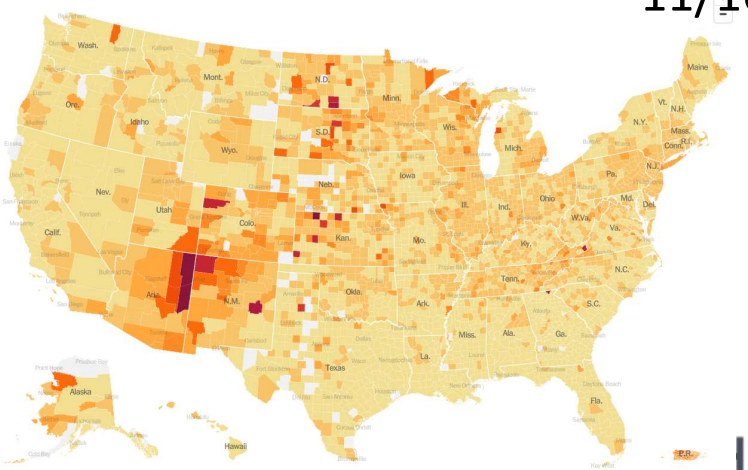


	DAILY AVG. ON NOV. 16	PER 100,000	14-DAY CHANGE
Cases	39,193	12	Flat
Test positivity	8.5%	—	—
Hospitalized	27,704	8	+2%
In I.C.U.s	3,212	<1	+3%
Deaths	299	<1	−13%

10/12/22



11/16/22



https://www.nytimes.com/interactive/2021/us/coronavirus-us-cases.html

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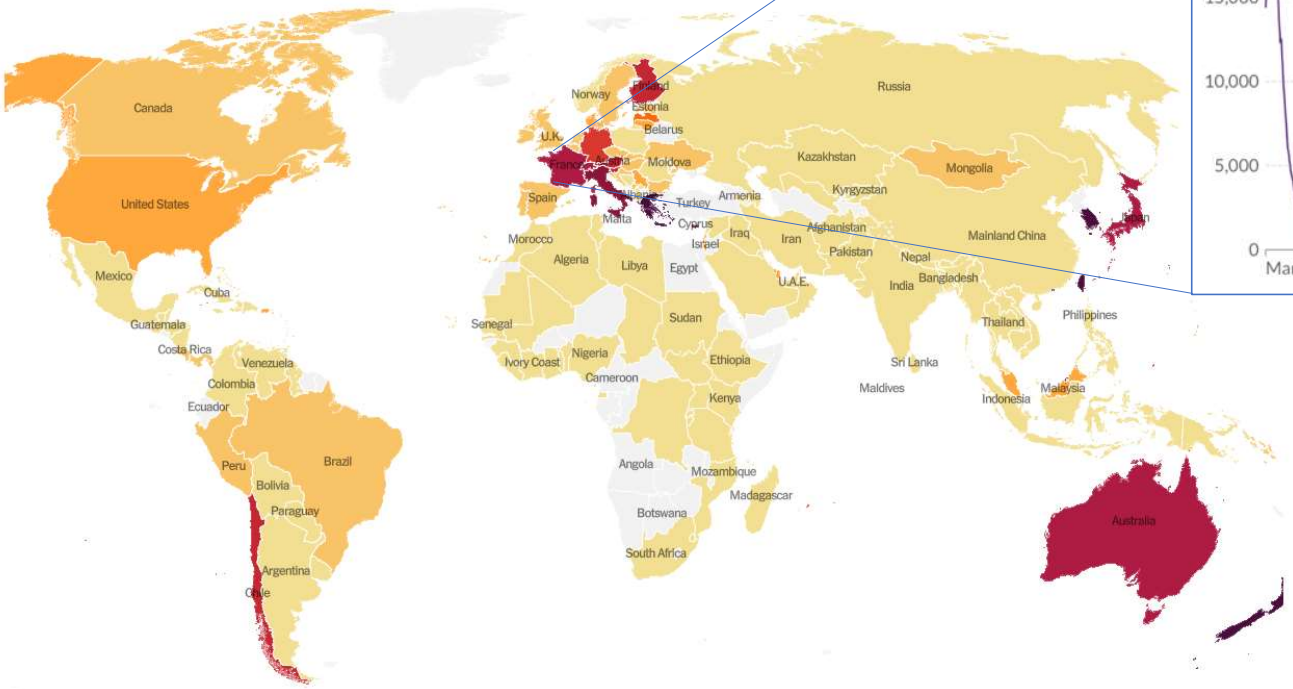
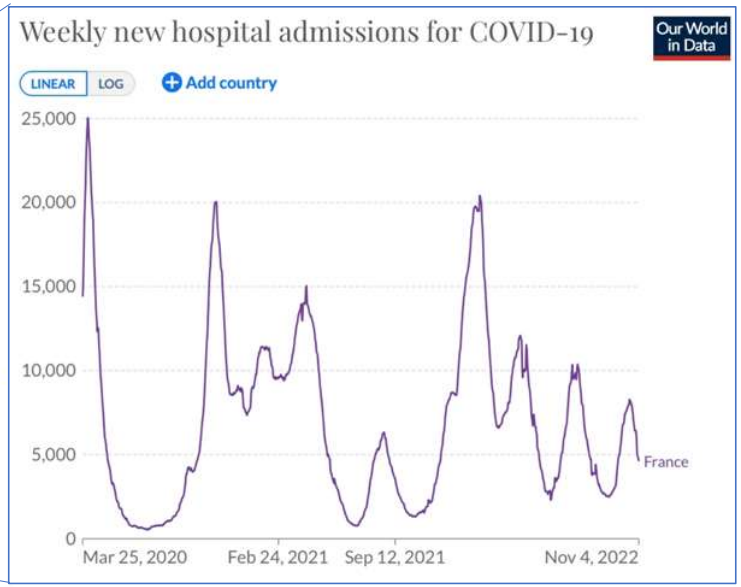
World Hot Spots





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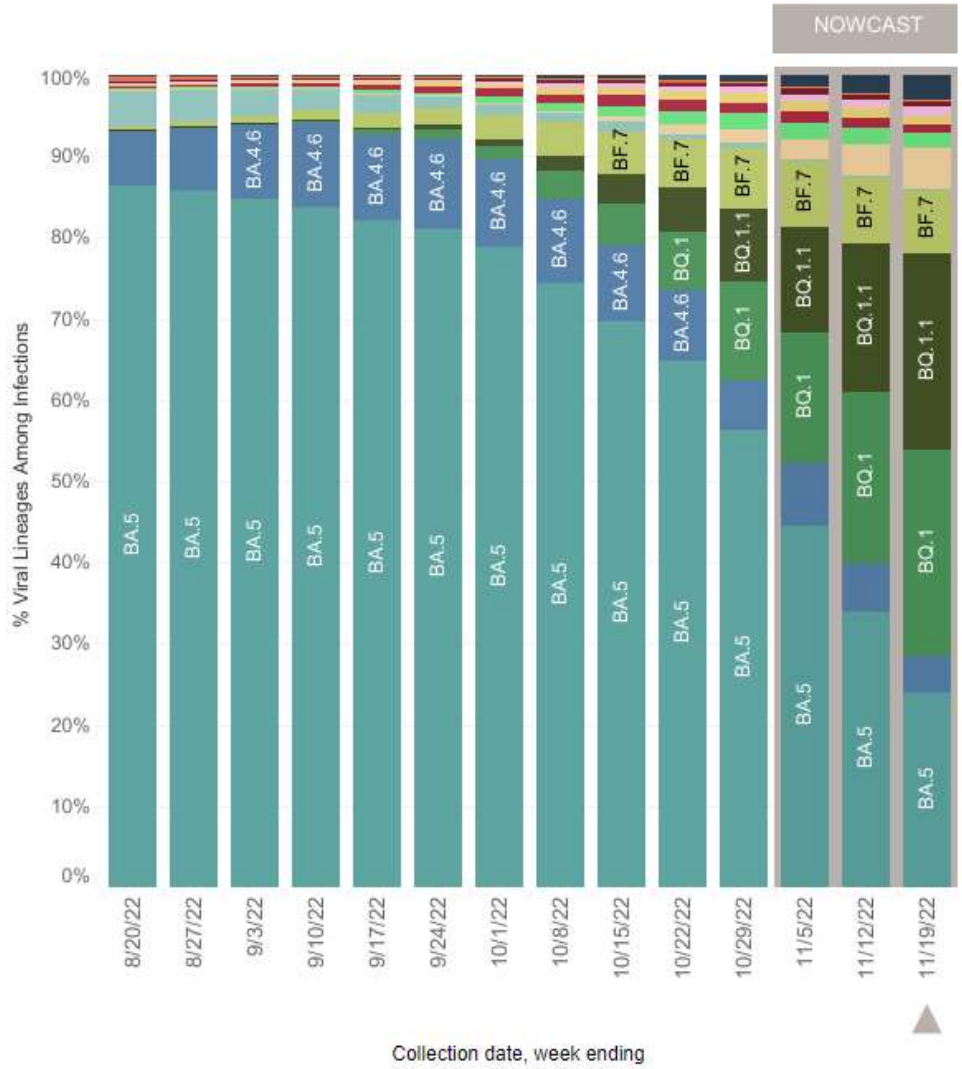
United States: 8/14/2022 – 11/19/2022



United States: 11/13/2022 – 11/19/2022 NOWCAST

USA

WHO label	Lineage #	US Class	%Total	95%PI
Omicron	BQ.1	VOC	25.5%	22.1-29.1%
	BQ.1.1	VOC	24.2%	21.6-27.0%
	BA.5	VOC	24.0%	21.4-26.9%
	BF.7	VOC	7.8%	6.8-8.9%
	BN.1	VOC	5.1%	3.7-6.8%
	BA.4.6	VOC	4.4%	3.9-4.9%
	BA.5.2.6	VOC	1.9%	1.5-2.3%
	BA.2	VOC	1.2%	0.8-1.7%
	BA.2.75	VOC	1.1%	0.9-1.3%
	BF.11	VOC	1.0%	0.8-1.3%
	BA.2.75.2	VOC	0.8%	0.6-1.0%
	BA.4	VOC	0.1%	0.1-0.1%
	BA.1.1	VOC	0.0%	0.0-0.0%
	B.1.1.529	VOC	0.0%	0.0-0.0%
	BA.2.12.1	VOC	0.0%	0.0-0.0%
Delta	B.1.617.2	VBM	0.0%	0.0-0.0%
Other	Other*		3.1%	1.6-5.7%

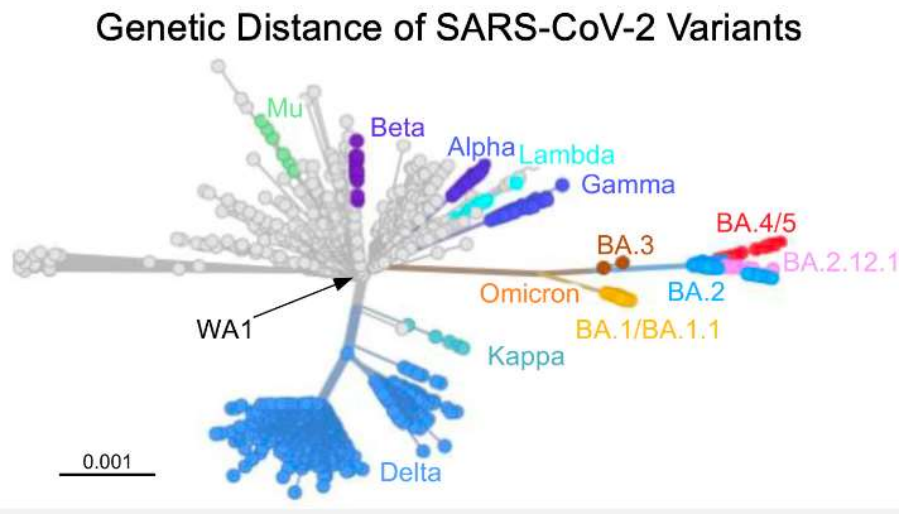
* Enumerated lineages are US VOC and lineages circulating above 1% nationally in at least one week period. "Other" represents the aggregation of lineages which are circulating <1% nationally during all weeks displayed.

** These data include Nowcast estimates, which are modeled projections that may differ from weighted estimates generated at later dates

\# BA.1, BA.3 and their sublineages (except BA.1.1 and its sublineages) are aggregated with B.1.1.529. Except BA.2.12.1, BA.2.75, BA.2.75.2, BN.1 and their sublineages, BA.2 sublineages are aggregated with BA.2. Except BA.4.6, sublineages of BA.4 are aggregated to BA.4. Except BF.7, BF.11, BA.5.2.6, BQ.1 and BQ.1.1, sublineages of BA.5 are aggregated to BA.5. For all the lineages listed in the above table, their sublineages are aggregated to the listed parental lineages respectively. Previously, BF.11 was aggregated with BA.5. Lineages BA.2.75.2, BN.1, BA.4.6, BF.7, BF.11, BA.5.2.6 and BQ.1.1 contain the spike substitution R346T.

Why was BA.5 Winning?

- BA.5 isolate has five additional amino acid changes (69–70del, L452R, F486V, and Q493) in its spike protein as compared with a BA.2 isolate
- BA.2.12.1, BA.4, and BA.5 subvariants substantially escape neutralizing antibodies induced by both vaccination and infection
- In those with previous infection – most of whom also had been vaccinated – the neutralizing antibody levels were lower by a factor of 6.4 against BA.1; by a factor of 5.8 against BA.2; by a factor of 9.6 against BA.2.12.1 and by a factor of 18.7 against BA.4 or BA.5.
- BA.2.75 still only seen in India where BA. 5 is less



https://www.vox.com/23200811/covid-19-omicron-ba5-reinfection-vaccine-paxlovid

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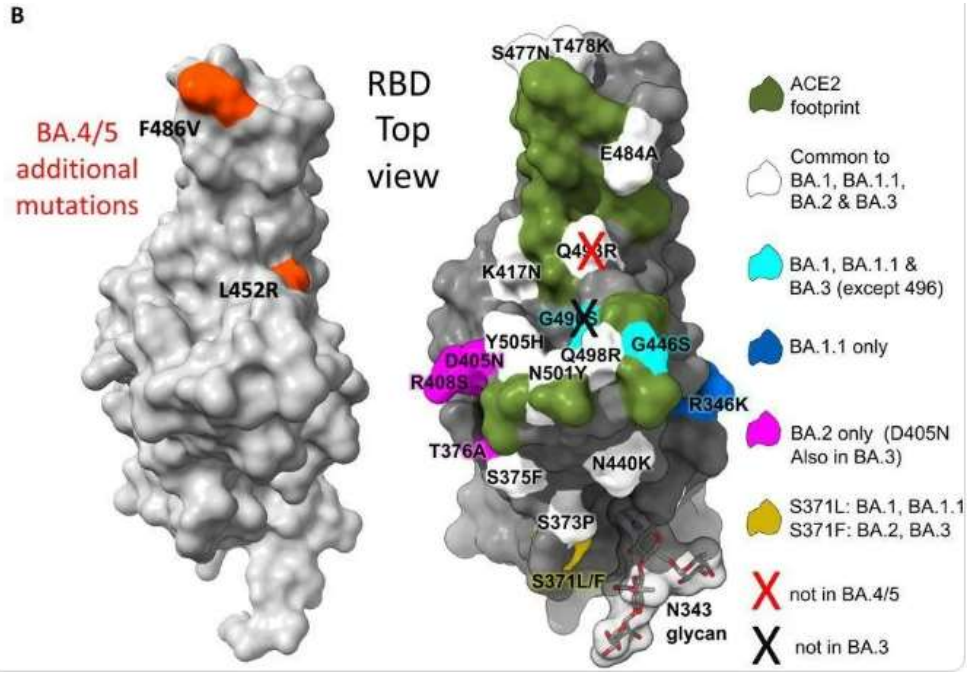
Further antibody escape by Omicron BA.4 and BA.5 from vaccine and BA.1 serum

- BA.4/5 shows reduced neutralization by serum from triple AstraZeneca or Pfizer vaccinated individuals compared to BA.1 and BA.2.
- Using serum from BA.1 vaccine breakthrough infections there are likewise, significant reductions in the neutralization of BA.4/5, raising the possibility of repeat Omicron infections.



doi: https://doi.org/10.1101/2022.05.21.492554

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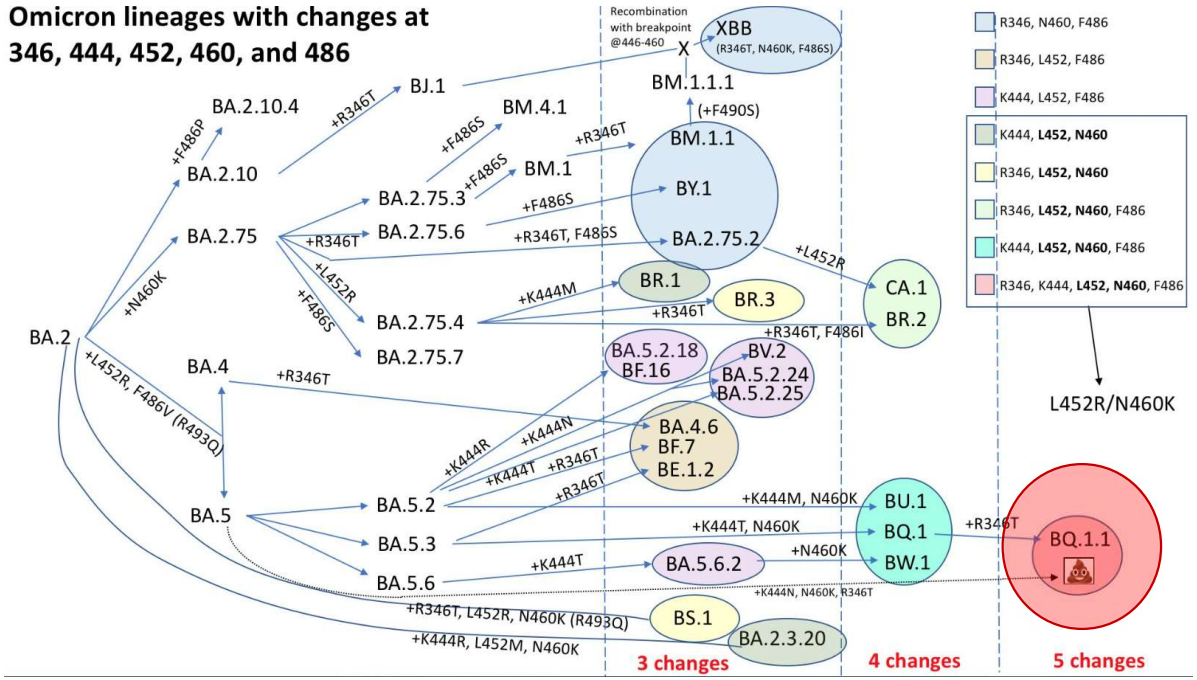
Omicron Persists!



- Convergent evolution. Subvariants with similar mutations are popping up independently across the globe.
- **Notice BQ.1.1 (in red)**. This is a direct descendant of BA.5. While it has the most spike mutations, we picked the BA.5 formula for U.S. fall boosters. Our boosters will work best if this subvariant dominates in the future. For now, BQ.1.1 is winning the race
- This is what we know. More than 90% of testing and sequencing has been stopped across the globe. This means we are largely flying blind and there may be a surprise in the mix we are unaware of just yet.

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Source - Katelyn Jetelina: https://yourlocalepidemiologist.substack.com/p/covid-state-of-affairs-oct-5?utm_source=email

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Current Omicron Variants

- Current BQ 1.1, BQ1 and BA5 make up 75% in US
- One to watch: **XBB**
- Recent outbreak in Singapore where >92% are vaccinated; 80% have booster
  - Though, there wasn't a big spike in hospitalizations
- The most immune evasive variant tested in preliminary neutralization studies
- Resistant to current monoclonal antibody treatments
- Predicted to have one of the largest relative growth rates
- There are no signs that XBB causes more severe COVID illness.

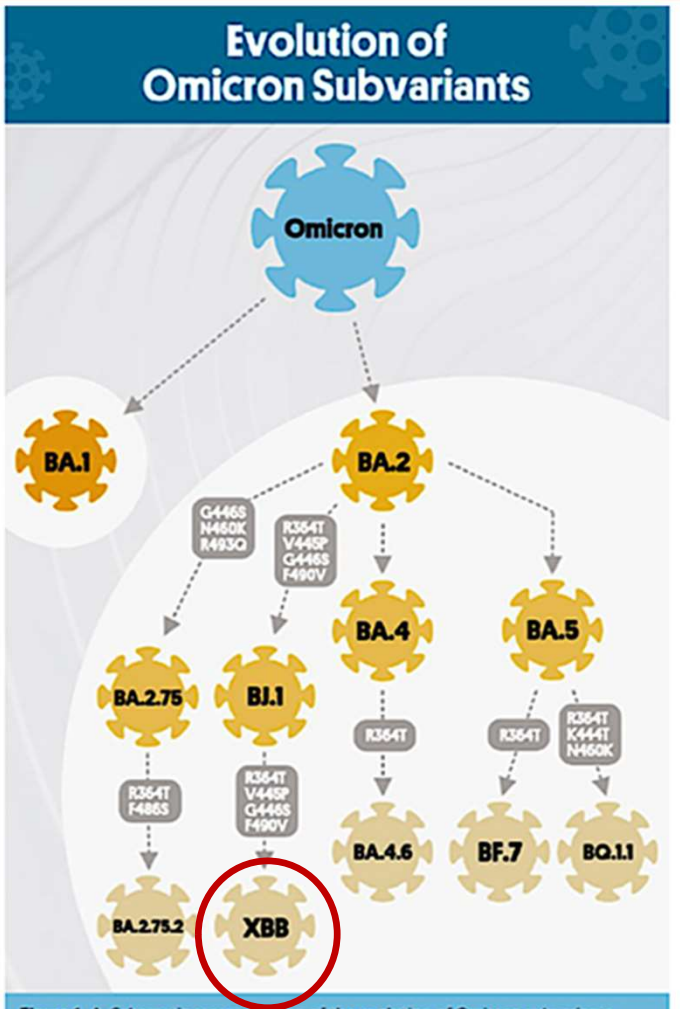

Figure 1. A. Schematic representation of the evolution of Omicron subvariants (adapted from @TRyanGregory). Similar mutations that evade antibody recognition have emerged in different sequence backgrounds. Only RBD mutations are indicated. See ref 5 for complete sequence information.

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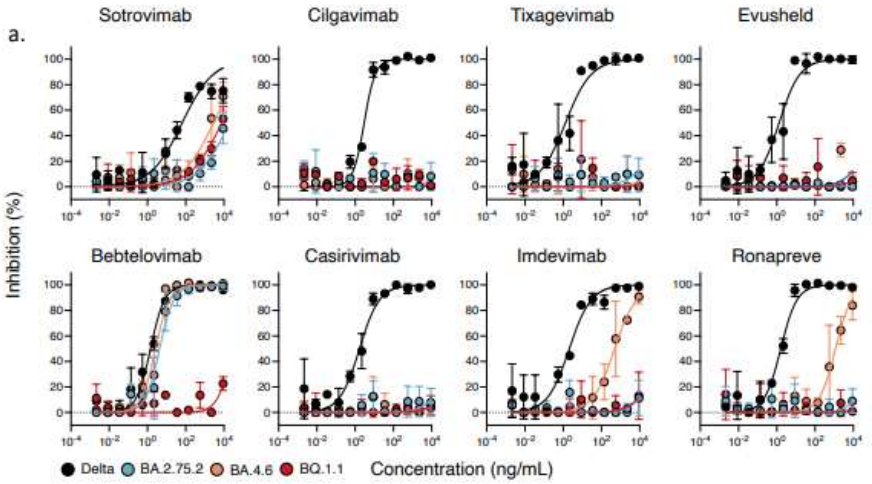
Resistance to Antibodies

- Recent pre-print examined their sensitivity to 6 therapeutic monoclonal antibodies (mAbs) and to 72 sera from Pfizer BNT162b2-vaccinated individuals, with or without BA.1/BA.2 or BA.5 breakthrough infection.
- Ronapreve (Casirivimab and Imdevimab) and Evusheld (Cilgavimab and Tixagevimab) lost any antiviral efficacy against BA.2.75.2 and BQ.1.1, whereas Xevudy (Sotrovimab) remained weakly active.
- BQ.1.1 was also resistant to Bebtelovimab.
- Neutralizing titers in triply vaccinated individuals were low to undetectable against BQ.1.1 and BA.2.75.2, 4 months after boosting.
- A BA.1/BA.2 breakthrough infection increased these titers, which remained about 18-fold lower against BA.2.75.2 and BQ.1.1, than against BA.1. Reciprocally, a BA.5 breakthrough infection increased more efficiently neutralization against BA.5 and BQ.1.1 than against BA.2.75.2.
- The evolution trajectory of novel Omicron subvariants facilitated their spread in immunized populations and raises concerns about the efficacy of most currently available mAbs.



b.

mAb	D614G	BA.2*	BA.5*	BA.2.75.2	BQ.1.1	BA.4.6
Bebtelovimab	1.4	4.5	2	4,3	-	2,7
Sotrovimab	65	11,519	1,088	19,391	7,640	2,874
Cilgavimab	2.9	6.1	11	-	-	-
Tixagevimab	1.3	-	-	-	-	-
Evusheld	1.3	24.7	22.6	-	-	-
Casirivimab	1.7	-	-	-	-	-
Imdevimab	2.1	1,12	208	-	-	493
Ronapreve	1.6	1,985	700	-	-	1,181

IC50 (ng/mL)

Figure 3. Neutralization activity of therapeutic monoclonal antibodies against BQ.1.1, BA.2.75.2 and BA.4.6. a. Neutralization curves of monoclonal antibodies. Dose–response analysis of the neutralization by the indicated antibodies or their clinical combinations. Evusheld: Cilgavimab and Tixagevimab. Ronapreve: Casirivimab and Imdevimab. Data are mean ± s.d. of 2 independent experiments. **b.** IC50 values in ng/ mL for each antibody against the indicated viral strains. *ED50 against BA.2 and BA.5 are from [47].

https://doi.org/10.1101/2022.11.17.516888

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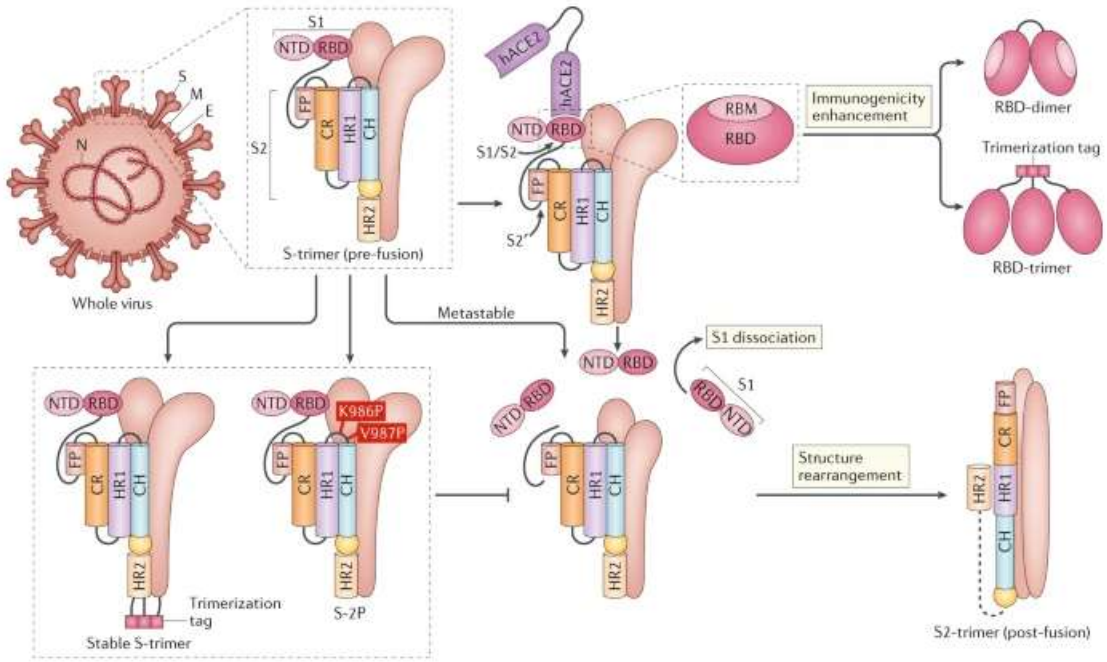
Viral Targets for Vaccines

- SARS-CoV-2 contains four major structural proteins, namely:
- Spike (S), responsible for recognition of the host cellular receptor to initiate virus entry
- Membrane (M) embedded in the viral surface envelope, and shape the virion envelope
- Envelope (E) proteins, embedded in the viral surface envelope small polypeptides that are crucial for CoV infectivity
- Nucleocapsid (N) protein, which is in the ribonucleoprotein core make up the helical nucleocapsid and bind along the viral RNA genome – these are also expressed on the surface of infected cells and are stable

Fig. 1: Major targets used in COVID-19 vaccine candidates.



Dai, L., Gao, G.F. Viral targets for vaccines against COVID-19. *Nat Rev Immunol* **21**, 73–82 (2021). https://doi.org/10.1038/s41577-020-00480-0

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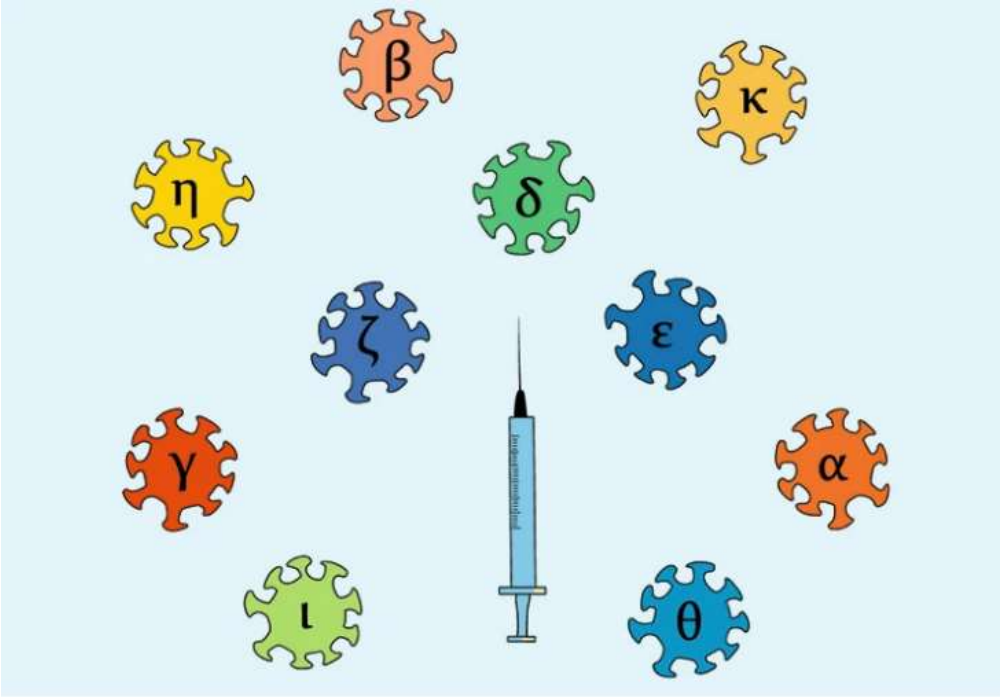
Challenge: Producing a Pancoronavirus Vaccine

- "We want to start clinical trials tomorrow, but there are lots of barriers to getting there"
  - Funding – no more Operation Warp Speed
  - Materials
  - Public will
  - Companies willing to cooperate
- More insight is needed into how the quality of T cell immunity impacts protection. Many researchers expect that for pan-coronavirus vaccines to succeed, they will have to provide robust and broad protection via multiple T cell subsets as well as antibody-mediated pathways.



Operation Nasal Vaccine— Lightning speed to counter COVID-19

- Findings by Tang and colleagues strongly point to the defect of relying on intramuscular shots alone - they do not provide tissue-level mucosal immunity. The only path to achieve this will be via nasal or orally administered vaccines.
- Fortunately, there are at least 12 nasal vaccines that are in clinical development, and 4 have reached phase 3 randomized, placebo-controlled trials:
  - 3 are viral vectors
  - 1 is a protein subunit vaccine
- Codagenix has announced positive results via a press release – BA.2
  - Novel intranasal COVID-19 vaccine, CoviLivTM, induced strong cellular immune response in healthy adults against many conserved proteins in known variants of SARS-CoV-2, in particular, a peptide pool >99% Omicron BA.2. Spike protein focused vaccines have shown lower protection against viral mutants.1
  - Unlike other spike-only vaccine approaches that may need to re-formulate as COVID evolves, this interim Phase 1 CoviLiv data demonstrates the classic benefits of a live-attenuated vaccine: broad immunity without the need for re-formulation.
  - CoviLiv also induced a mucosal antibody response and blocked nasal replication, suggesting it may be the only vaccine candidate with the potential to reduce viral transmission.
  - CoviLiv is a participant in a World Health Organization (WHO) global, placebo-controlled Phase 2/3 efficacy trial for COVID-19 (WHO-sponsored, Solidarity Trial Vaccines), with dosing planned by mid-2022.
- We fully recognize the challenges of validating a clinically effective and safe nasal vaccine for which there has been limited success in the past.

Topol EJ et al. Sci Immunol 2022; 7, eadd9947 – 19Aug2022, Tang et al. DOI: 10.1126/sciimmunol.add4853

CanSinoBIO's Convidecia Air™ Receives Approval in China

2022-09

CanSino Biologics Inc. ("CanSinoBIO") (SSE: 688185, HKEX: 06185) announced that the National Medical Products Administration of China ("NMPA") has granted the Company approval for its Recombinant COVID-19 Vaccine (Adenovirus Type 5 Vector) for Inhalation (trade name: Convidecia Air™) to be used as a booster dose.

Utilizing the same adenovirus vector technological platform as the intramuscular version Convidecia™, Convidecia Air™ provides a non-invasive option that uses a nebulizer to change liquid into an aerosol for inhalation through the mouth. Convidecia Air™ is needle-free and can effectively induce comprehensive immune protection in response to SARS-CoV-2 after just one breath.

CanSinoBIO received the approval of its clinical trial application for Convidecia Air™ in March 2021. Studies published in The Lancet indicated that Convidecia Air™ can induce strong humoral, cellular and mucosal immunity to achieve triple protection and effectively contain the infection and spread of the virus.

Currently, CanSinoBIO has achieved steady production of various innovative vaccines and established a global supply chain, with a goal to continue to make quality vaccine products more accessible by the global population.

https://www.cansinotech.com/html/1///179/180/1100.html – Access on 08-Sep-2022

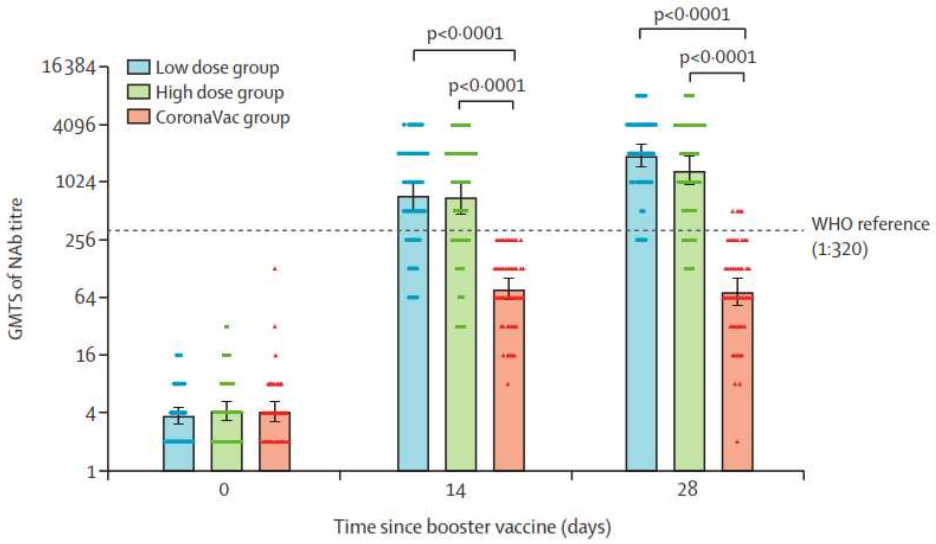
Aerogen and CanSinoBIO agree on landmark development and commercial supply partnership for world's first inhaled Covid-19 vaccine delivery

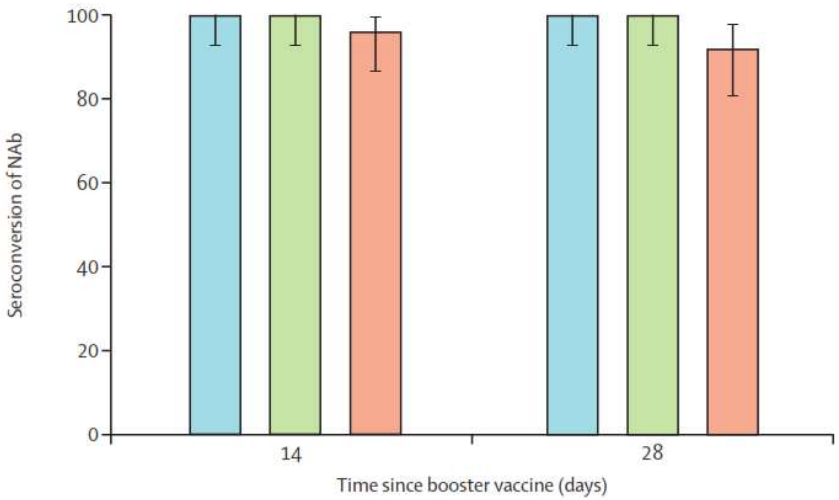
For aerosolized vaccination, the vaccine was administered for 30–60 s using nebulization inhalation (Aerogen Ultra device, Aerogen, Galway, Ireland), during which the vaccine was nebulized and delivered into a disposable mouthpiece. Each nebulizer freshly charged with the vaccine could be used to vaccinate one person.

Wu S et al. Lancet Infect Dis 2021; 21: 1654-64
https://www.aerogen.com/inhaled-covid-vaccine/ - Access on 13-Sep-2022
https://www.aerogen.com/inhaled-covid-19-vaccine-delivery/ - Access on 13-Sep-2022

Safety and immunogenicity of heterologous boost immunization with aerosolized Ad5-nCoV COVID-19 vaccine in Chinese adults

Neutralizing antibodies against wild-type SARS-CoV-2 before and after a booster vaccination





445 vaccinated volunteers were screened

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Li JX et al. Lancet Respir Med 2022; 10: 739-48

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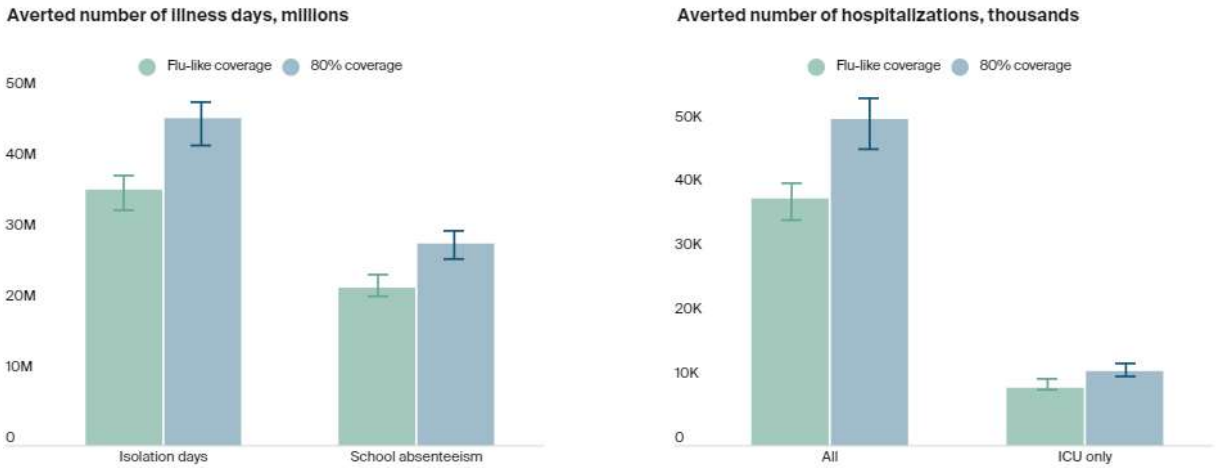
Recent Analysis Favors "Boosting" the Booster in Pediatrics

Estimated Pediatric Isolation Days, Days of School Absenteeism, and Pediatric Hospitalizations Averted Under Different Booster Vaccination Scenarios, October 1, 2022, Through March 31, 2023



https://www.commonwealthfund.org/blog/2022/how-covid-booster-campaign-could-keep-kids-out-of-hospital-in-school

- Study estimated that a booster campaign that achieved age-specific coverage similar to the 2020–21 influenza vaccination levels (Scenario 1) would avert more than 36 million pediatric isolation days and more than 22 million days of school absenteeism.
- A more ambitious booster campaign reaching 80 percent of eligible individuals of all ages (Scenario 2) would avert more than 46 million pediatric isolation days and almost 29 million days of school absenteeism

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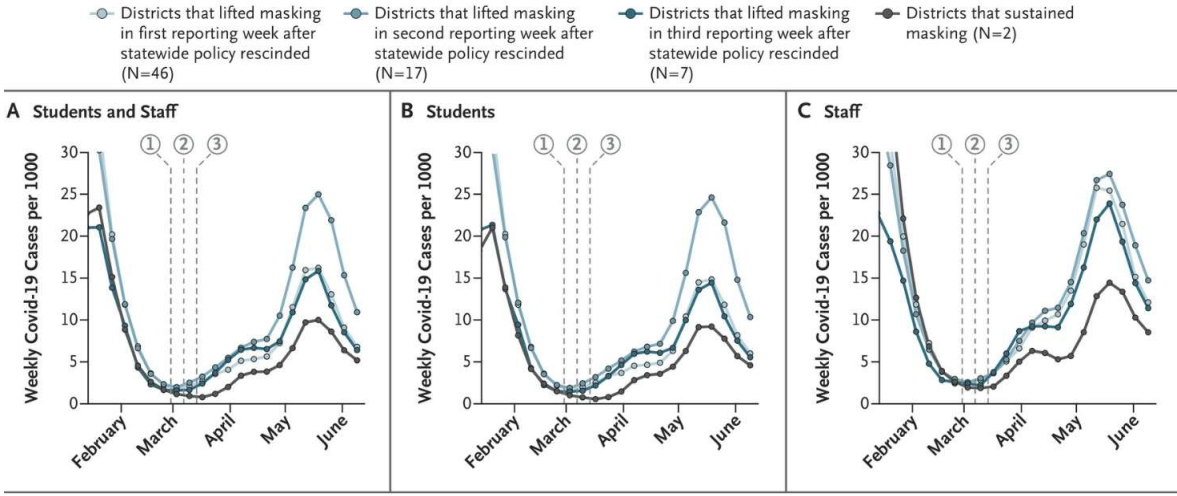
Lifting Universal Masking in Schools — Covid-19 Incidence among Students and Staff

- During the 15 weeks after the statewide masking policy was rescinded, the lifting of masking requirements was associated with an additional 44.9 cases per 1000 students and staff (95% confidence interval, 32.6 to 57.1), which corresponded to an estimated 11,901 cases and to 29.4% of the cases in all districts during that time.
- Districts that chose to sustain masking requirements longer tended to have school buildings that were older/worse condition and to have more students per classroom
- These districts had higher percentages of low-income students, students with disabilities, and students who were English-language learners, as well as higher percentages of Black and Latinx students and staff.
- Results support universal masking as an important strategy for reducing Covid-19 incidence in schools and loss of in-person school days.



Authors believe that universal masking may be especially useful for mitigating effects of structural racism in schools, including potential deepening of educational inequities.

Nov 9, 2022 DOI: 10.1056/NEJMoa2211029

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COVID-19 Common Dosing Errors, Management and Prevention

Jen Burns, CPNP, APN

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General Best Practice Guidelines for Immunization

Clear Orders
Right Patient
Right Vaccine and Diluent
Right Dose
Right Site
Right Route
Right Needle Size
Right Documentation

https://www.cdc.gov/vaccines/hcp/acip-recs/general-recs/downloads/general-recs.pdf

COVID-19 vaccine products currently approved or authorized in the United States

Pfizer-BioNTech

Age indication	Vaccine vial cap color	Label border color	Dilution required	Primary series		Booster doses	
				Dose	Injection volume	Dose	Injection volume
6 months–4 years	Maroon	Maroon	Yes	3 µg	0.2 mL	NA	NA
5–11 years	Orange	Orange	Yes	10 µg	0.2 mL	10 µg	0.2 mL
12 years and older	Purple	Purple	Yes	30 µg	0.3 mL	30 µg	0.3 mL
12 years and older	Gray	Gray	No	30 µg	0.3 mL	30 µg	0.3 mL

Moderna

Age indication	Vaccine vial cap color	Label border color	Dilution required	Primary series		Booster doses	
				Dose	Injection volume	Dose	Injection volume
6 months–5 years	Dark blue	Magenta	No	25 µg	0.25 mL	NA	NA
6-11 years	Dark blue	Purple	No	50 µg	0.5 mL	NA	NA
12–17 years	Red	Light blue	No	100 µg	0.5 mL	NA	NA
18 years and older	Red	Light blue	No	100 µg	0.5 mL	50 µg	0.25 mL
18 years and older	Dark blue	Purple	No	NA	NA	50 µg	0.5 mL

Janssen

Age indication	Vaccine vial cap color	Label border color	Dilution required	Primary series		Booster doses	
				Dose	Injection volume	Dose	Injection volume
18 years and older	Blue	No Color	No	5×10^{10} viral particles	0.5 mL	5×10^{10} viral particles	0.5 mL

Novavax

Age indication	Vaccine vial cap color	Label border color	Dilution required	Primary series		Booster doses	
				Dose	Injection volume	Dose	Injection volume
18 years and older	Royal blue	No Color	No	5 µg rS and 50 µg of Matrix-M™ adjuvant	0.5 mL	N/A	N/A

Post this in your vaccine area

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https://www.cdc.gov/vaccines/covid-19/clinical-considerations/covid-19-vaccines-us.html

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Right Vaccine, Dose and Diluent

- Check vaccine and diluent
  - Do not mix vaccine vials of the same or different vaccines together
  - **Use only diluent supplied with vaccine (Peds Pfizer only)**
    - Do not mix COVID-19 Vaccines from different vials
    - If you do not have enough for a full dose you need to waste
    - Adjust in ICARE
- Label each vaccine after drawing up
- **Do you have the correct vaccine for patient age?**
  - **Ask the patient their age not birthdate!**
- Check again just before giving to patient

Adverse Reactions and Contraindications

Know Possible Side-effects

- Types and examples of most common adverse reactions
  - Local (swelling at injection site)
  - Systemic (fever)
  - Allergic (anaphylaxis)
  - Adenopathy
  - Syncope in adolescents
  - Rare to see anything else

Allergic Reactions or Syncope

rare, but be prepared

- Prevent syncope (teens, young adults)
  - Sit or lie down for immunization
  - Wait 15-20 minutes after immunization
- Allergic reactions
  - Have a written plan, practice drill
  - Keep CPR certification current
  - Know where epinephrine and equipment to maintain airway are kept
  - Call for MD or NP and call 911
- Document – patient chart, VAERS, registry

COVID-19:Administrative Errors and Deviations

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COVID-19 Vaccine

Administration Errors and Deviations

A vaccine administration error is any preventable event that may cause or lead to inappropriate use of vaccine or patient harm. This table provides resources for preventing and reporting COVID-19 vaccine administration errors, as well as actions to take after an error has occurred. For completeness, it includes additional scenarios that deviate from CDC recommendations for vaccine intervals but are not considered administration errors.

For all vaccine administration errors:

- Inform the recipient of the vaccine administration error.
- Consult with the state immunization program and/or immunization information system (IIS) to determine how the dose should be entered into the IIS, both as an administered dose and to account for inventory.
- Follow the revaccination guidance below, using an age-appropriate COVID-19 vaccine and formulation. Continue with the recommended schedule of subsequent dose(s) unless otherwise noted.
  - For doses recommended to be repeated, consider delaying the repeat dose for 8 weeks after the invalid dose based on the potential for increased reactogenicity and the rare risk of myocarditis from mRNA COVID-19 vaccines, particularly among males 12-39 years of age.
- The recommendations apply to all FDA-approved or FDA-authorized COVID-19 vaccines and all doses unless otherwise stated.
- Providers are required to report all COVID-19 vaccine administration errors—even those not associated with an adverse event—to VAERS.
- Determine how the error occurred and implement strategies to prevent it from happening again.

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https://stacks.cdc.gov/view/cdc/106622

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Common Errors and Recommended Response

Type	Administration error/deviation	Interim recommendation
Site/route	• Incorrect site (i.e., site other than the deltoid muscle or vastus lateralis muscle)	• Do not repeat dose.
	• Incorrect route (e.g., subcutaneous)	• Do not repeat dose. • Inform the recipient of the potential for local and systemic adverse events.
Age	• Unauthorized age group (recipients younger than age 6 months)	• Do not give another dose at this time.*

	• Unauthorized age group (recipients ages 6 months–17 years)	• If Moderna vaccine administered:
		  ○ As a booster dose, do not repeat the dose with Pfizer-BioNTech vaccine
		• If Novavax vaccine administered:
		  ○ As a primary dose, do not repeat the dose with Moderna or Pfizer-BioNTech vaccine and continue the age-appropriate mRNA COVID-19 vaccine primary series
		  ○ As a booster dose, do not repeat the dose with Pfizer-BioNTech vaccine
		• If Janssen vaccine administered
		  ○ As a primary dose, do not count the dose and begin or continue the age-appropriate mRNA COVID-19 vaccine primary series (Table 2) at least 28 days after the Janssen vaccine dose
		  ○ As a booster dose, do not count the dose and repeat the dose with Pfizer-BioNTech vaccine at least 28 days after the Janssen vaccine dose

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https://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us-appendix.html#appendix-c

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Common Errors and Recommended Response

Type	Administration error/deviation	Interim recommendation
Product and dosage	• If the incorrect product/dosage is administered, resulting in a higher-than-authorized dose	• Do not repeat dose.[11]
	• If the incorrect product/dosage is administered, resulting in a lower-than-authorized dose	• Repeat dose immediately (no minimum interval) with the age-appropriate product/dosage. • Some experts suggest delaying the repeat dose for 8 weeks after the invalid dose based on the potential for increased reactogenicity and the rare risk of myocarditis from mRNA (i.e., Moderna or Pfizer-BioNTech) or Novavax COVID-19 vaccines, especially in males ages 12–39 years.[5†]
	• Higher-than-authorized dose volume administered of the correct product	• Do not repeat dose.[†]
	• Lower-than-authorized dose volume administered of the correct product (e.g., leaked out of the syringe, equipment failure, recipient pulled away)	• Repeat dose immediately (no minimum interval).[5] • However, if a half-volume dose of vaccine is administered to a patient recommended for the full volume, another half-volume dose can be administered on the same clinic day, and the 2 doses can count as 1 full dose.

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Common Errors and Recommended Response

Type	Administration error/deviation	Interim recommendation
Storage and handling	• Dose administered after improper storage and handling (i.e., temperature excursion)	• Contact the manufacturer for information on the stability of the vaccine. If the manufacturer does not have data to support the stability of the vaccine, repeat the dose immediately (no minimum interval).[5]
	• Dose administered past the expiration/beyond-use date	• Contact the manufacturer for information on the stability of the vaccine. If the manufacturer does not have data to support the stability of the vaccine, repeat the dose immediately (no minimum interval).[5]
Intervals[¶]	• An mRNA (i.e., Moderna or Pfizer-BioNTech) or Novavax primary series dose administered prior to the recommended interval[#]	• Repeat dose. Space repeat dose after the dose given in error by at least the recommended interval (Table 2 and Table 3).[5]

	• Booster dose administered prior to the minimum interval (i.e., for the first booster dose, prior to 2 months after Janssen primary series or 3 months after mRNA vaccine primary series)	• Repeat dose if this is the first booster dose. Space repeat dose after the dose given in error by at least the minimum interval.[5]
		  ○ 2-month minimum interval after Janssen vaccine primary series
		  ○ 3-month minimum interval after mRNA vaccine primary series
		• Do not repeat dose if this is the second booster dose.

	• Any COVID-19 vaccine dose administered at any interval after the recommended interval	• Do not repeat dose. There is no maximum interval. • This deviation from CDC guidance does not require VAERS reporting.

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Common Errors and Recommended Response

Type	Administration error/deviation	Interim recommendation
Diluent (Pfizer-BioNTech COVID-19 Vaccine formulations only [purple cap and orange cap])	• ONLY diluent administered (i.e., sterile 0.9% sodium chloride)	• Administer the authorized dose immediately (no minimum interval).
	• No diluent, resulting in higher than authorized dose	• Do not repeat dose.* Inform the recipient of the potential for local and systemic adverse events.
	• Incorrect diluent type (e.g., sterile water, bacteriostatic 0.9% sodium chloride)	• Contact the manufacturer for information on the stability of the vaccine. If the manufacturer does not have information to support the stability of the vaccine, repeat the dose immediately (no minimum interval).[5]
	• Vaccine is mixed with too little diluent	• Do not repeat dose. Inform the recipient of the potential for local and systemic adverse events.*
	• Vaccine is mixed with too much diluent	• Repeat dose immediately (no minimum interval).[5]
	• Single-use vial of diluent is used to mix multiple vials of vaccine	• Do not repeat dose. Inform patient of the potential for bacterial infection.
Diluent (Pfizer-BioNTech COVID-19 formulation that should not be mixed with diluent, i.e., gray cap)	• Vaccine is mixed with any diluent (i.e., any type or volume of diluent)	• Contact the manufacturer for information on the stability of the vaccine. If the manufacturer does not have information to support the stability of the vaccine, repeat the dose immediately (no minimum interval).[5]

https://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us-appendix.html#appendix-c

Common Errors and Recommended Response

Type	Administration error/deviation	Interim recommendation
Mixed primary series	• Incorrect COVID-19 vaccine product inadvertently administered as part of a 2- or 3-dose primary series	• Do not repeat dose. • Children ages 6 months–4 years who receive different mRNA products for the first 2 doses of an mRNA COVID-19 vaccine series should follow a 3-dose schedule. A third dose of either mRNA vaccine should be administered 8 weeks after the second dose to complete the 3-dose primary series. • Children ages 5–17 years who receive a mixed mRNA COVID-19 vaccine primary series can follow the Pfizer-BioNTech COVID-19 Vaccine schedule and receive a booster dose.

No need to delay vaccine related to monoclonal antibody for COVID-19 infection treatment

Persons who received passive antibody therapy (convalescent plasma/ monoclonal antibodies)	▪ COVID-19 vaccination can be given at any interval following receipt of passive antibody therapy. ▪ Persons should wait 2 weeks after COVID-19 vaccination before receiving tixagevimab/cilgavimab (EVUSHELD) for pre-exposure prophylaxis.

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12-17 YEAR OLDS

Population Estimate:

18,878

	At Least One Dose	Completed Primary Series	Booster/ Additional Dose
Total Population	82.1%	73.2%	27.1%
Asian, non-Latinx	93%	87%	44%
Black, non-Latinx	59%	51%	13%
Latinx	86%	78%	27%
White, non-Latinx	84%	77%	40%

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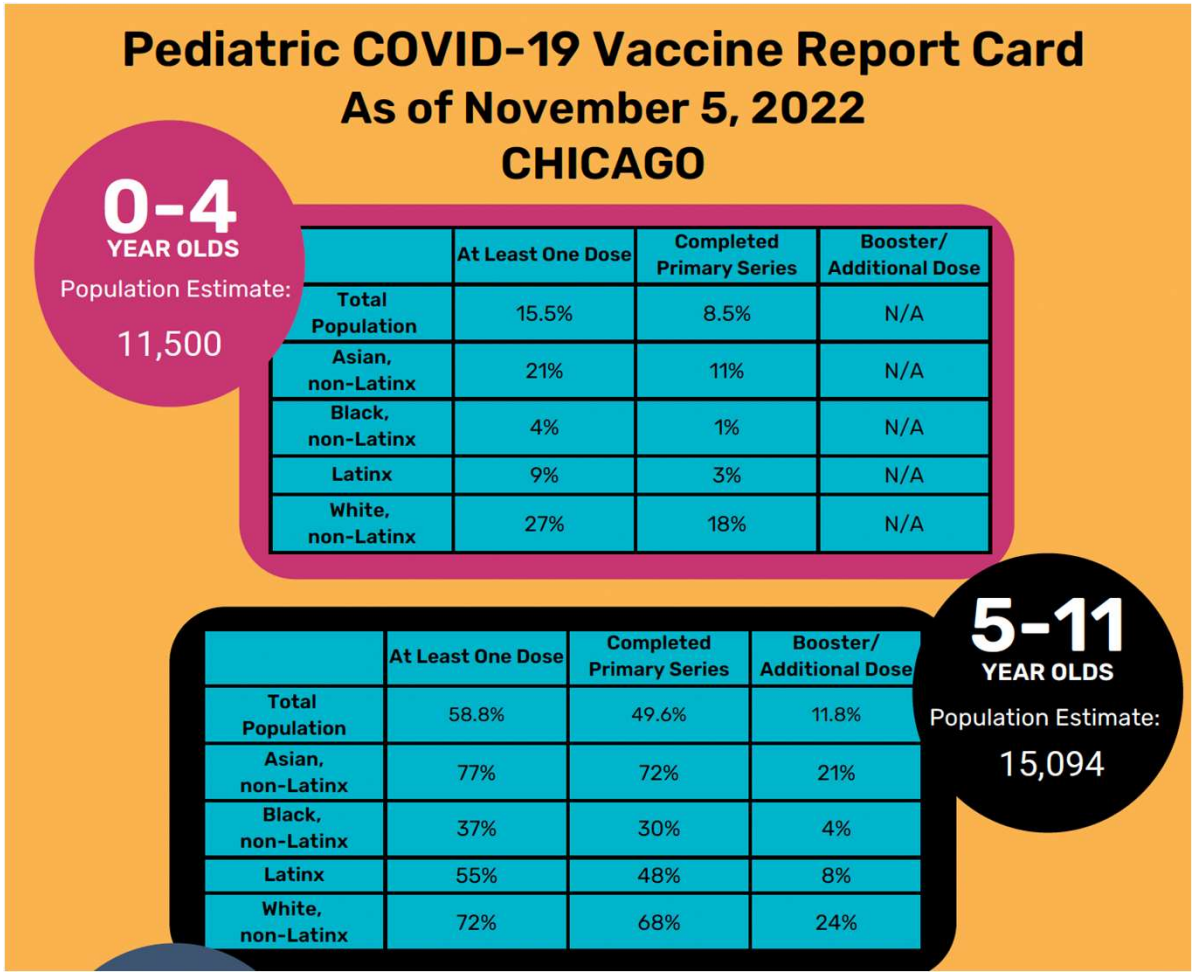
A project led by the Illinois Chapter of the American Academy of Pediatrics

CDPH
Chicago Department of Public Health

Data sourced from CDPH, American Community

Immunization Rates

- Still need to get primary series completed
- US data is similar



	At Least One Dose	Completed Primary Series	Booster/ Additional Dose
Total Population	15.5%	8.5%	N/A
Asian, non-Latinx	21%	11%	N/A
Black, non-Latinx	4%	1%	N/A
Latinx	9%	3%	N/A
White, non-Latinx	27%	18%	N/A

	At Least One Dose	Completed Primary Series	Booster/ Additional Dose
Total Population	58.8%	49.6%	11.8%
Asian, non-Latinx	77%	72%	21%
Black, non-Latinx	37%	30%	4%
Latinx	55%	48%	8%
White, non-Latinx	72%	68%	24%

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Questions?

Next Session: Tuesday, December 6th

For any questions, email us at pgower@peds.bsd.uchicago.edu

Funding for this project was made possible by the Office of Disease Control, through the Illinois Department of Public Health.

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