

COVID-19 Updates

Ibukun Kalu MD
Duke University

COVID-19 Updates

- Variants
- Vaccines
- Therapeutics

COVID-19 Cases in the United States

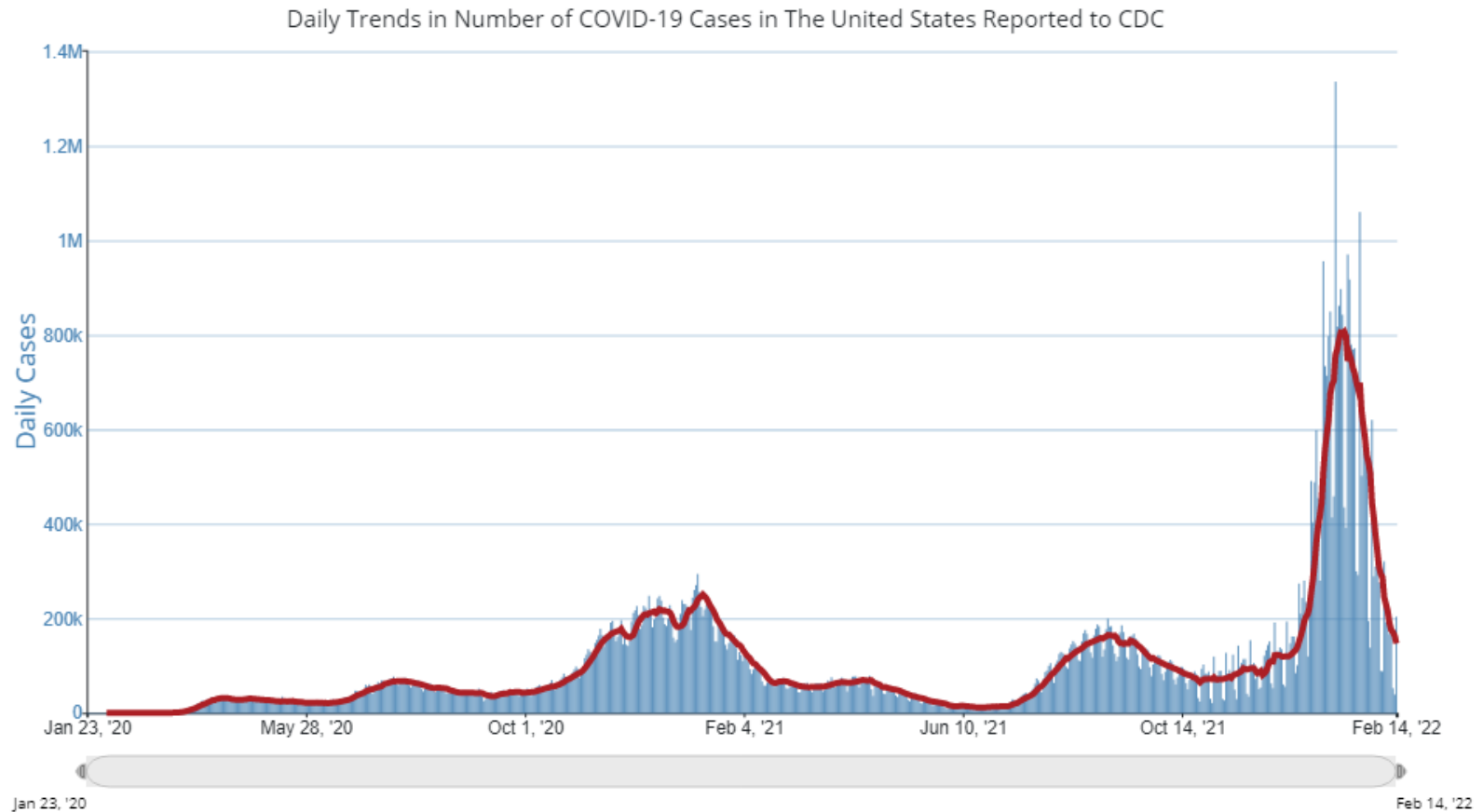
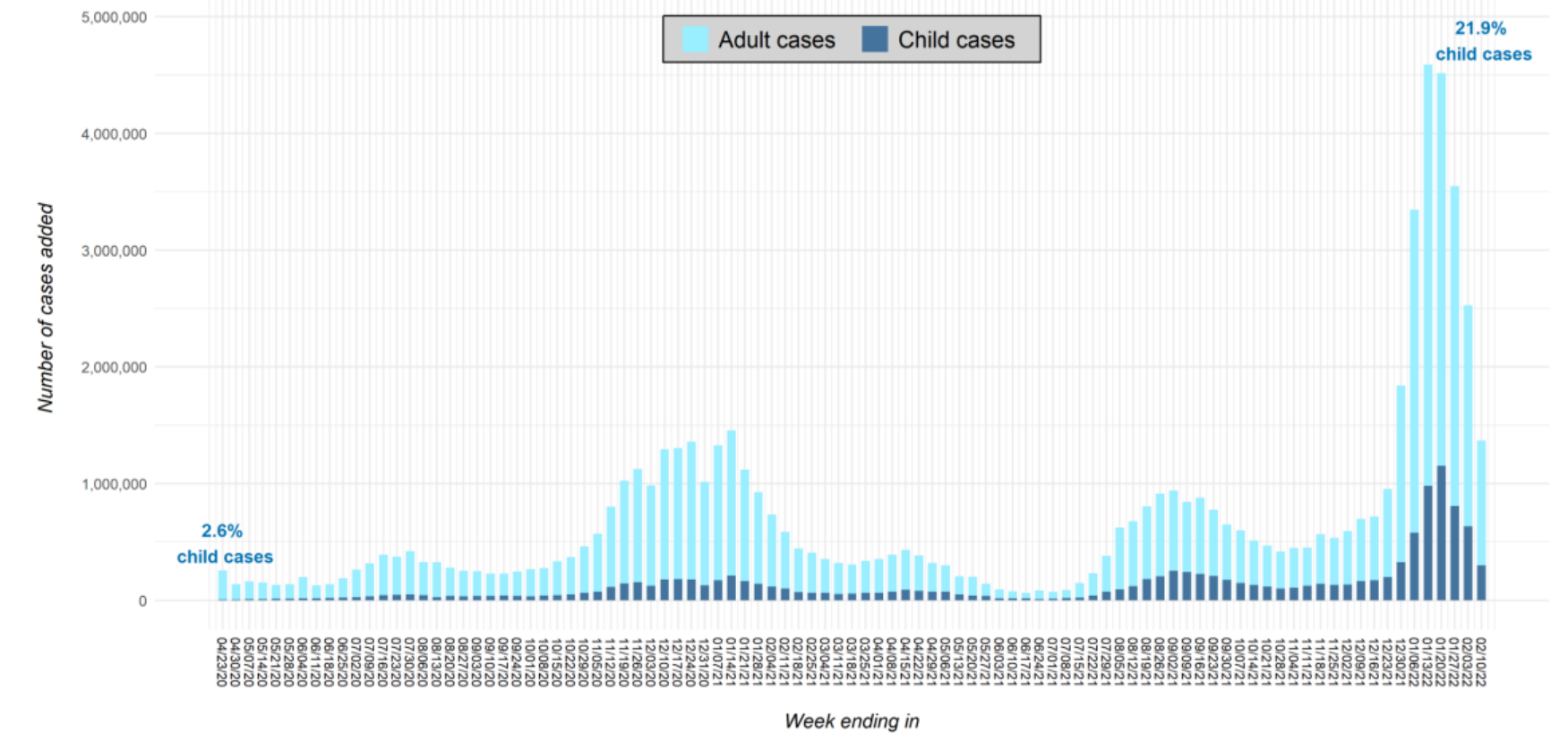
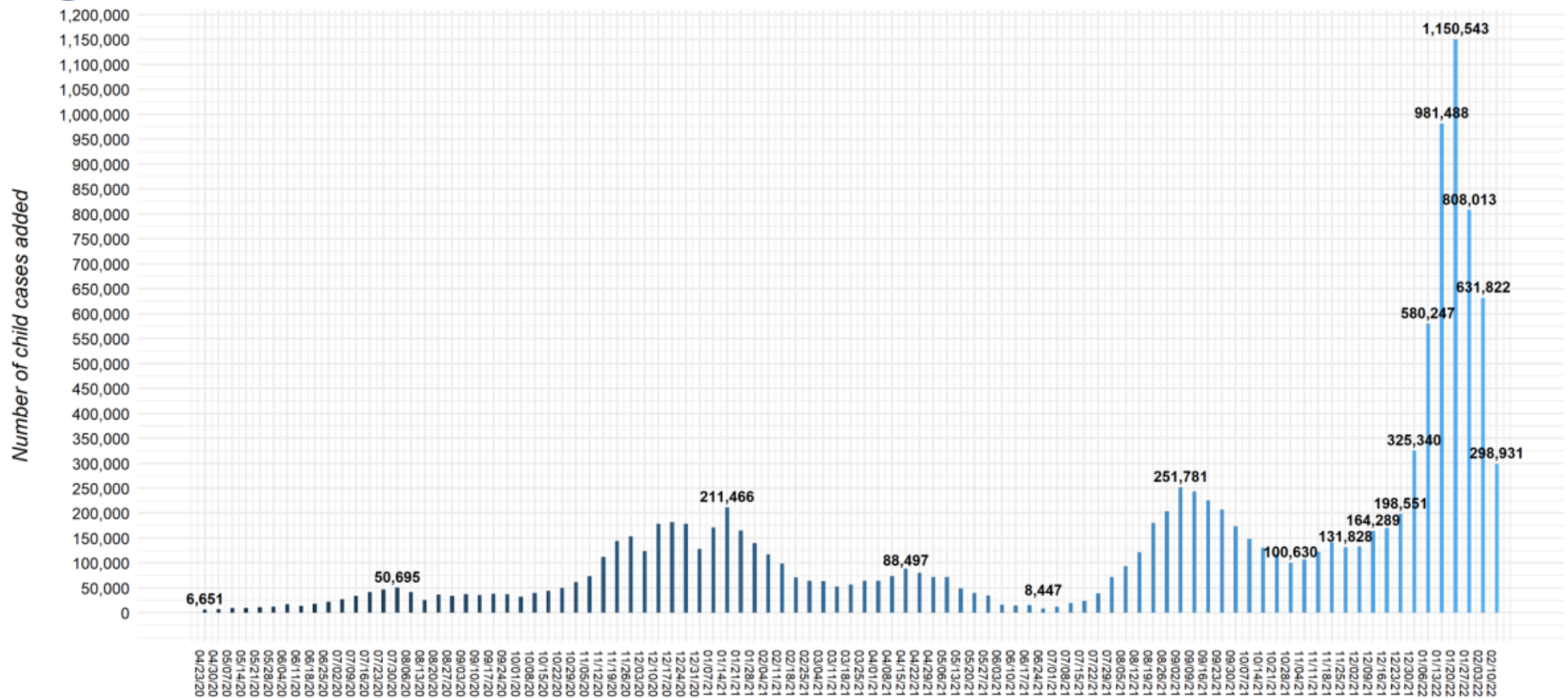


Fig 8. United States: Number of COVID-19 Cases Added in Past Week for Children and Adults*

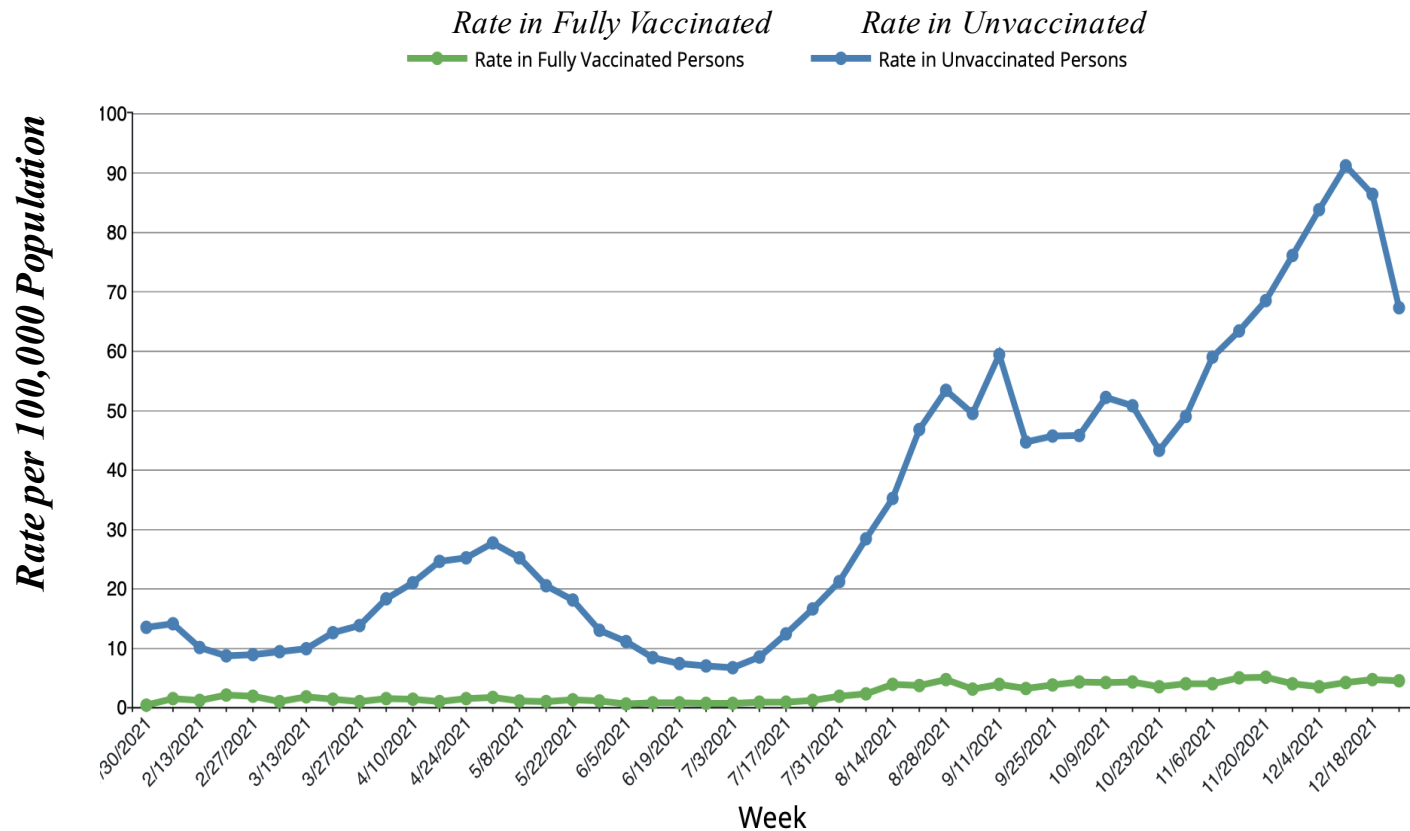


COVID-19 cases in children

Fig 6. United States: Number of Child COVID-19 Cases Added in Past Week*



AGE-ADJUSTED RATES OF COVID-19-ASSOCIATED HOSPITALIZATIONS BY VACCINATION STATUS IN ADULT AGES ≥ 18 YEARS, JANUARY – DECEMBER 2021



Source: <https://covid.cdc.gov/covid-data-tracker/#covidnet-hospitalizations-vaccination>

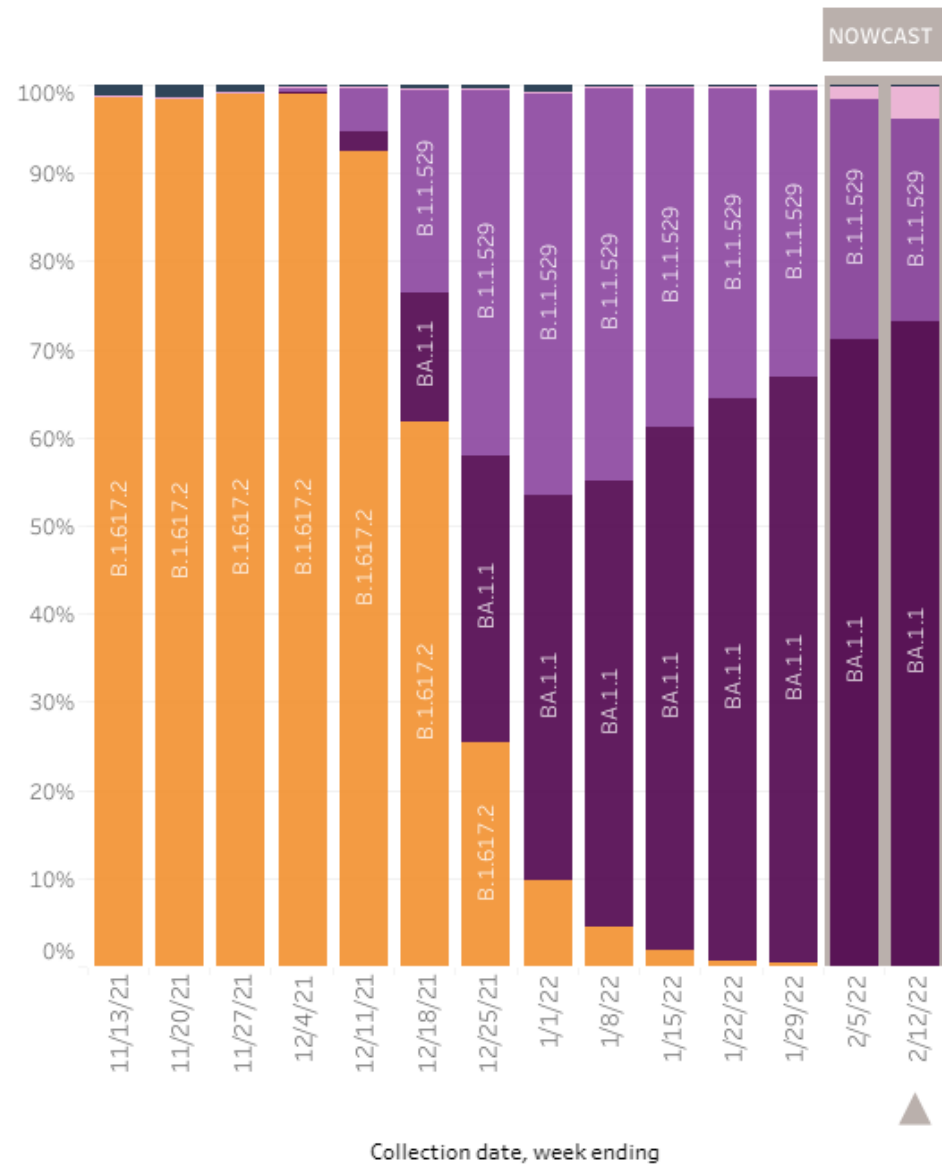
Variants

United States: 2/6/2022 – 2/12/2022 NOWCAST

USA

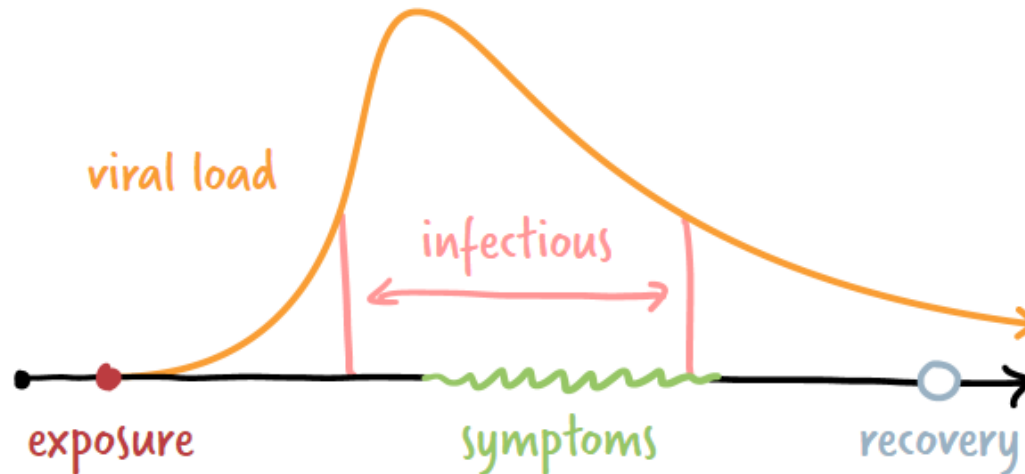
WHO label	Lineage #	US Class	%Total	95%PI
Omicron	BA.1.1	VOC	73.2%	69.0-77.1%
	B.1.1.529	VOC	22.9%	19.1-27.1%
	BA.2	VOC	3.9%	2.8-5.3%
Delta	B.1.617.2	VOC	0.0%	0.0-0.0%
Other	Other*		0.0%	0.0-0.0%

United States: 11/7/2021 – 2/12/2022



VARIANTS

- Variants for mRNA viruses are common (mutations during replication)
- Concerns for increased spread and false negative results
- **Changes clinical disease**
- Vaccines work against variants

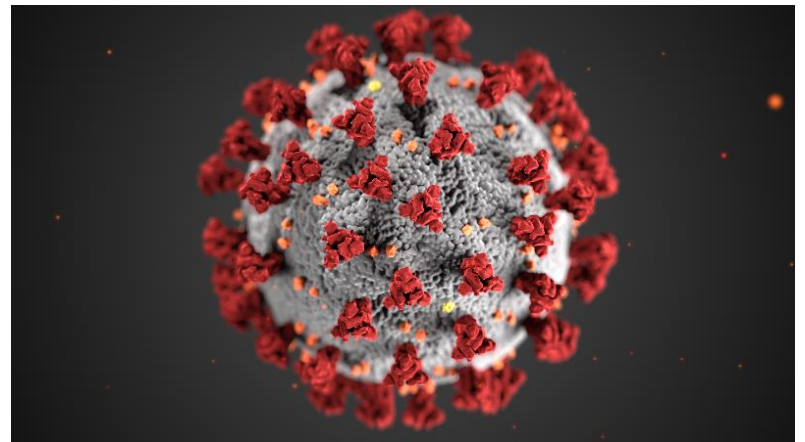


OMICRON: SUMMARY OF DATA

- Remains the dominant variant worldwide and in the US
- Median incubation period of 3 days (may be as short as 33 hours)
 - Contact tracing or quarantine is not useful (i.e., spread already happened)
- High frequency of asymptomatic infections
- Increasing cases are largely due to Omicron's escape from natural immunity and a primary series of COVID-19 vaccines
 - Diagnostic testing: Antigen tests of symptomatic persons may be falsely negative in the first 0-2 days

OMICRON: SUMMARY OF DATA

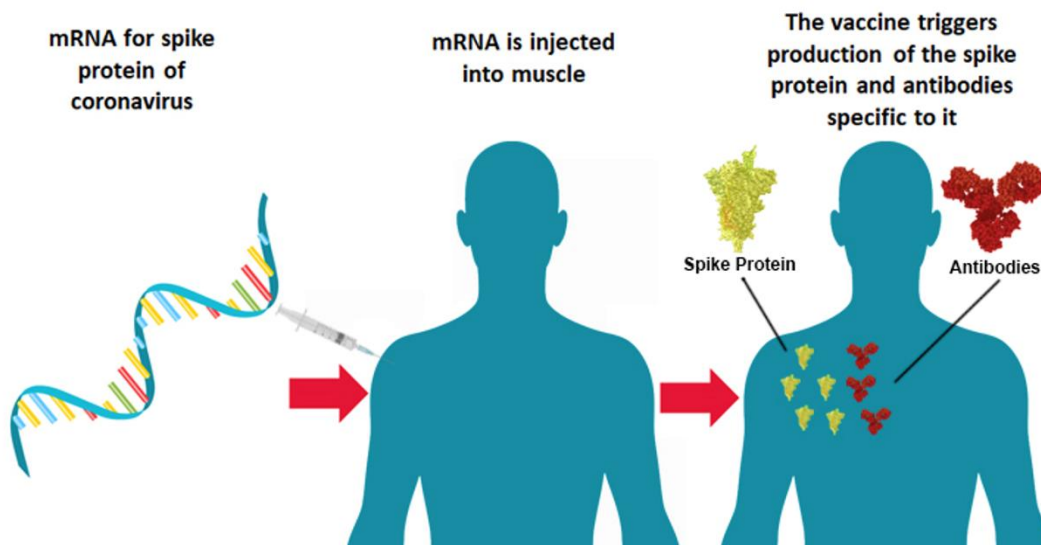
- Recent studies demonstrate that a primary series of COVID-19 vaccinations plus a booster are highly effective in preventing serious disease
- COVID-19 repeated testing is NOT a preventive strategy as demonstrated by multiple outbreaks in the community, cruise ships and professional sports teams



Immunization



How do mRNA Vaccines work?



Facts about COVID-19 mRNA Vaccines

They cannot give someone COVID-19.

- mRNA vaccines do not use the live virus that causes COVID-19.

They do not affect or interact with our DNA in any way.

- mRNA never enters the nucleus of the cell, which is where our DNA (genetic material) is kept.
- The cell breaks down and gets rid of the mRNA soon after it is finished using the instructions.

In December, compared to fully vaccinated persons in each group shown below, the monthly rates of COVID-19-associated hospitalizations were:

16x Higher in Unvaccinated Adults Ages 18 Years and Older

8x Higher

in Unvaccinated Adolescents
Ages 12-17 Years

12x Higher

in Unvaccinated Adults
Ages 18-49 years

17x Higher

in Unvaccinated Adults
Ages 50-64 years

17x Higher

in Unvaccinated Adults
Ages 65 Years and Older

For more information about COVID-NET, please see

<https://www.cdc.gov/coronavirus/2019-ncov/covid-data/covid-net/purpose-methods.html>

Rates of COVID-19-Associated Hospitalizations by Vaccination and Additional or Booster Dose Status

In December, compared to fully vaccinated persons with additional or booster doses in each age group shown below, the monthly rates of COVID-19-associated hospitalizations were:

45x Higher

in Unvaccinated Adults
Ages 50-64 years

51x Higher

in Unvaccinated Adults
Ages 65 Years and Older

Vaccine boosters



Adults

All previously vaccinated adults without severe allergic reactions to the vaccine should get boosters.

Use CDC criteria for timing. Adults (>18 yo) can get any FDA-approved vaccine as a booster.

Children

Children aged 12 and over should get boosters.

Use CDC criteria for timing. Only the Pfizer vaccine can be used as a booster.

"Essential" workers

Strongly recommend vaccination and boosters for those that are in customer-facing roles, crowded conditions or were vaccinated in early waves (e.g. essential workers)

Use CDC criteria for timing.

Previously Infected

No clear guidance. You can wait until after an isolation period (10-days) and after symptom improvement. For better immune response, some experts suggest waiting 30 - 90 days from infection to get a booster.

Discuss with your provider.

Vaccines for Children Under 5

- Pfizer is the only vaccine available for children < 18 in the United States
- Vaccine clinical trials assess 3 main questions:
 - 1) Does the vaccine cause side effects (safety)
 - 2) Does the vaccine generate antibodies (immunogenicity)
 - 3) Does the vaccine decrease COVID disease as compared to placebo (efficacy)
- Timeline:
 - EUA for 12 -15 (30 microgram dose): May 2021
 - EUA for 5 – 11 (10 microgram dose): October 2021
 - Trial for 6 months - < 5 (3 microgram dose) started summer 2021
 - In December, Pfizer announced that the vaccine met pre-specified immunogenicity outcomes in children 6 - 24 months, but NOT in children 2-4 years
 - There were no safety concerns



United States | 0 - 17 Years

104,840

Total Admissions

Aug 01, 2020 - Feb 01, 2022

669

Current 7-Day Average

Jan 26, 2022 - Feb 01, 2022

815

Prior 7-Day Average

Jan 19, 2022 - Jan 25, 2022

914

Peak 7-Day Average

Jan 10, 2022 - Jan 16, 2022

-17.9%

Percent change from prior 7-day
avg. of Jan 19, 2022 - Jan 25, 2022

-26.8%

Percent change from peak 7-day
avg. of Jan 10, 2022 - Jan 16, 2022

New Admissions of Patients with Confirmed COVID-19 per 100,000 Population by Age Group, United States Aug 01, 2020 - Feb 01, 2022

By Jurisdiction and Age Group

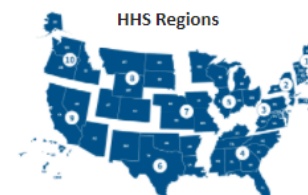
By Jurisdiction

Select a Jurisdiction

United States

Select an Age Group

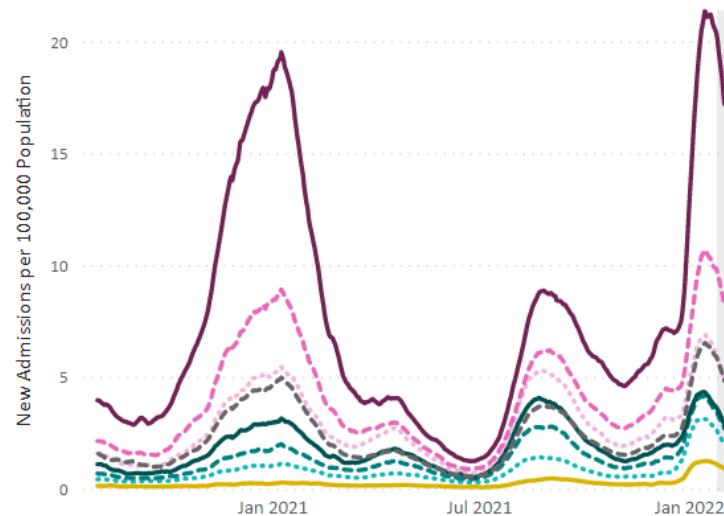
0 - 17 Years



United States | 0 - 17 Years



United States | All Age Groups



Age Group — 0 - 17 Years — 18 - 29 Years — 30 - 39 Years — 40 - 49 Years — 50 - 59 Years — 60 - 69 Years — 70+ Years — All Ages

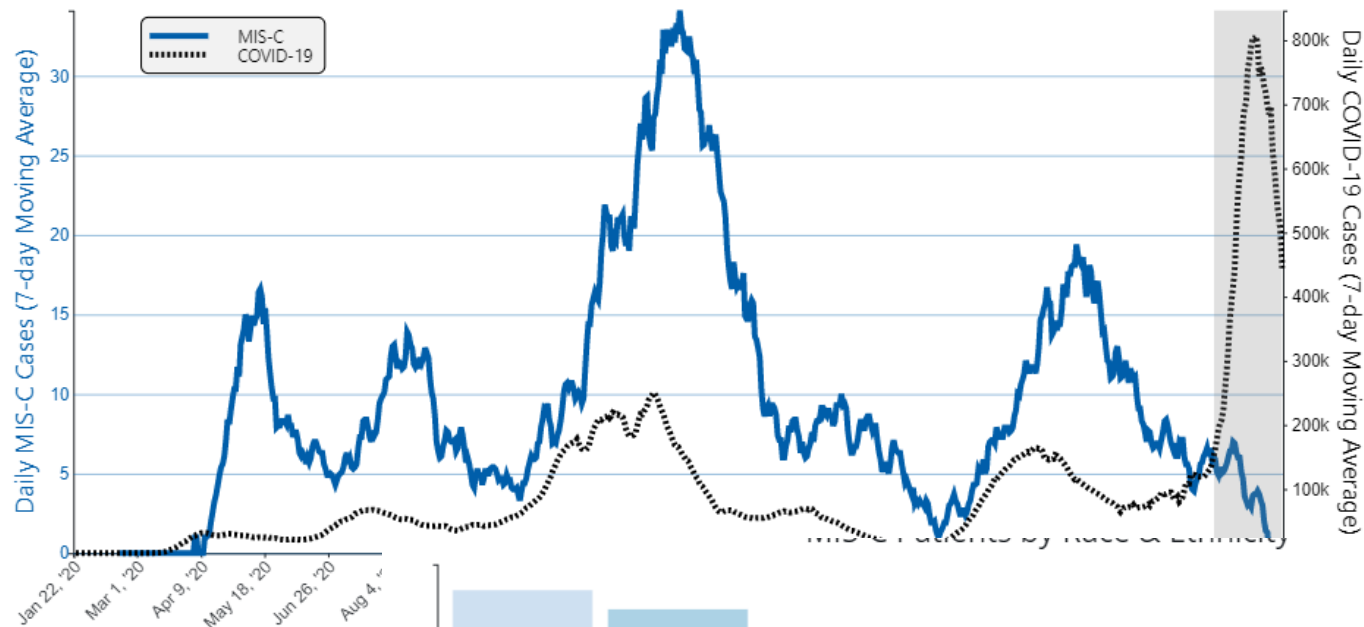
Based on reporting from all hospitals (N=5,265). Due to potential reporting delays, data reported in the most recent 7 days (as represented by the shaded bar) should be interpreted with caution.

Small shifts in historic data may occur due to changes in the CMS Provider of Services file, which is used to identify the cohort of included hospitals. Data since December 1, 2020 have had error correction methodology applied. Data prior to this date may have anomalies that are still being resolved. Note that the above graphs are often shown on different scales. Data prior to August 1, 2020 are unavailable.

Last Updated: Feb 03, 2022

Unified Hospital Dataset, White House COVID-19 Team, Data Strategy and Execution Workgroup

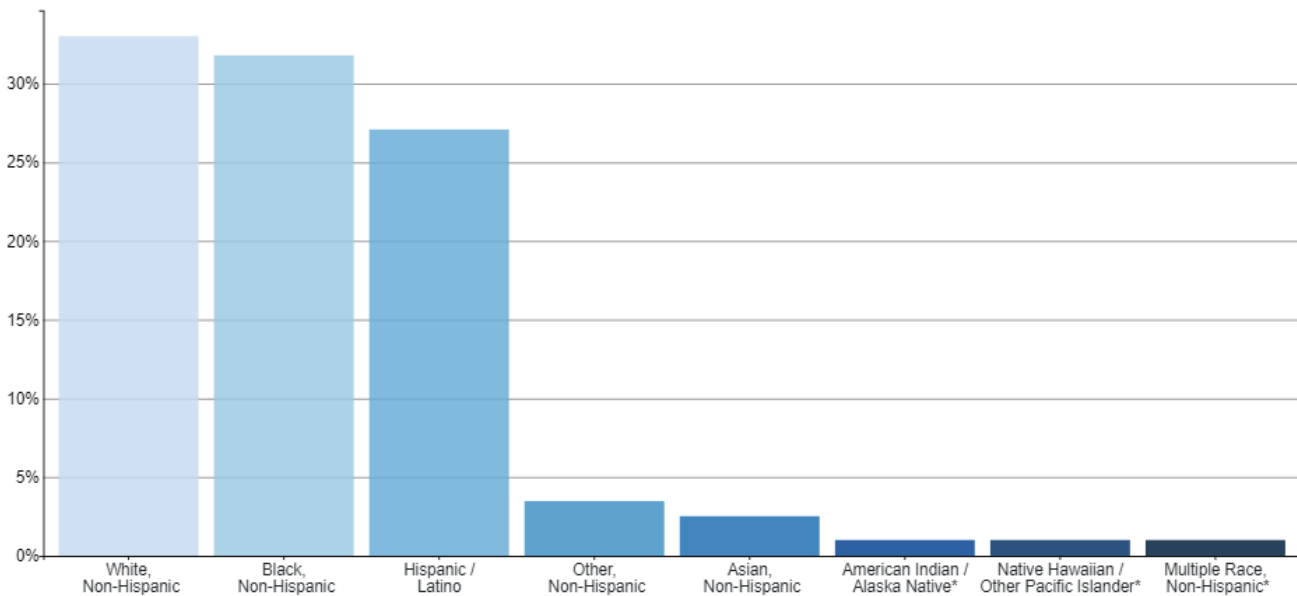
Daily MIS-C Cases and COVID-19 Cases Reported to CDC (7-Day Moving Average)



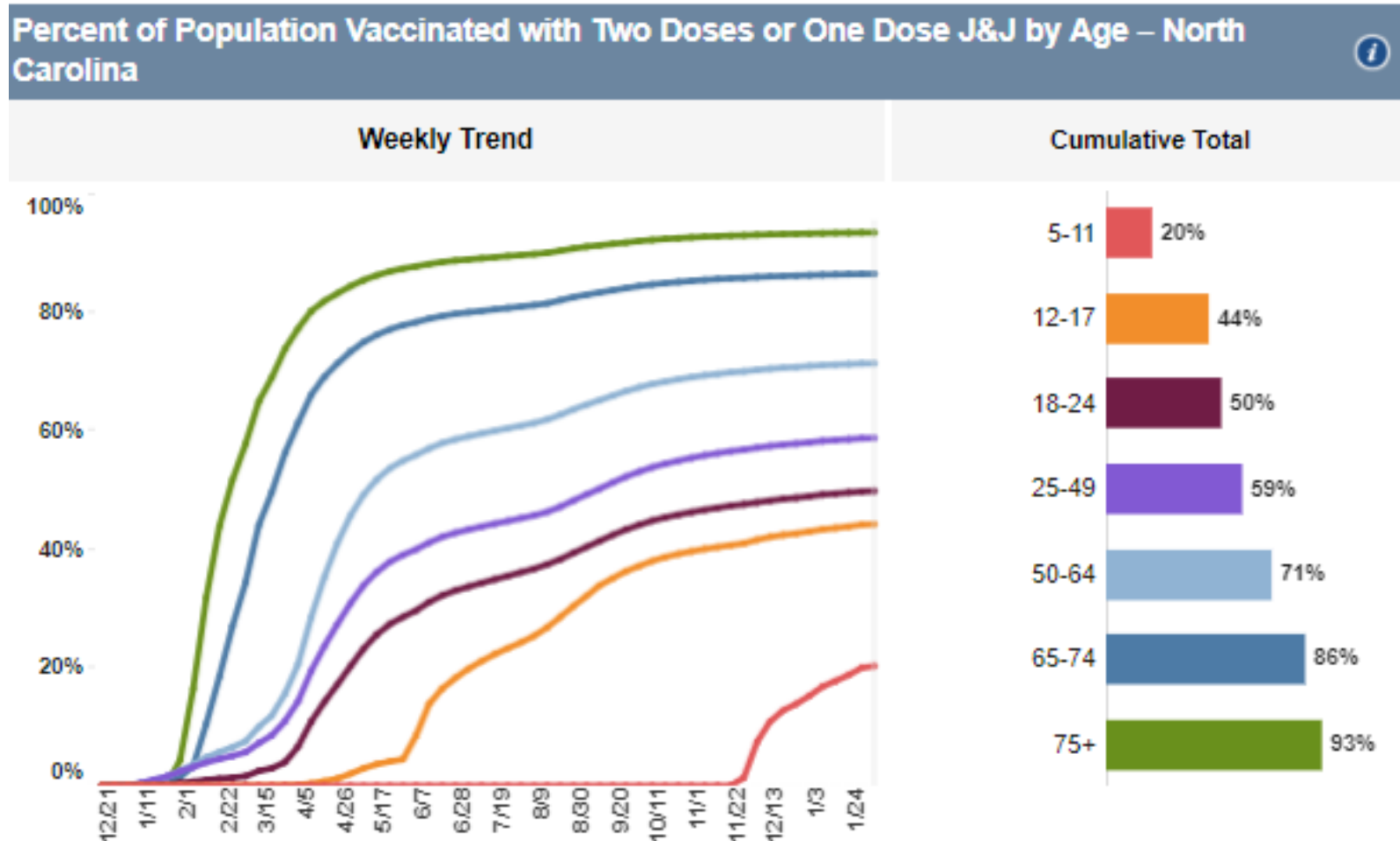
Last updated with cases reported to CDC on or before January 31, 2022*

TOTAL MIS-C PATIENTS MEETING CASE DEFINITION

6,851



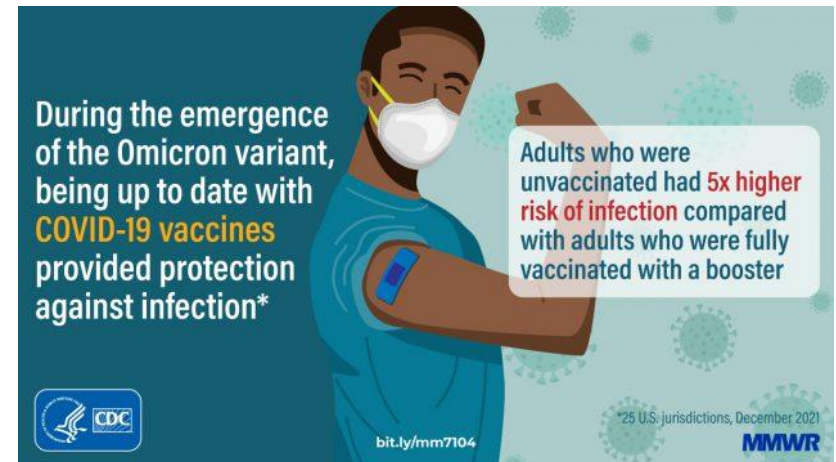
North Carolina Percent of Population with Full Vaccination Status



NCDHHS. (2022, February 3). NC Covid - Vaccinations. Vaccinations. Retrieved February 3, 2022, from <https://covid19.ncdhhs.gov/dashboard/vaccinations>

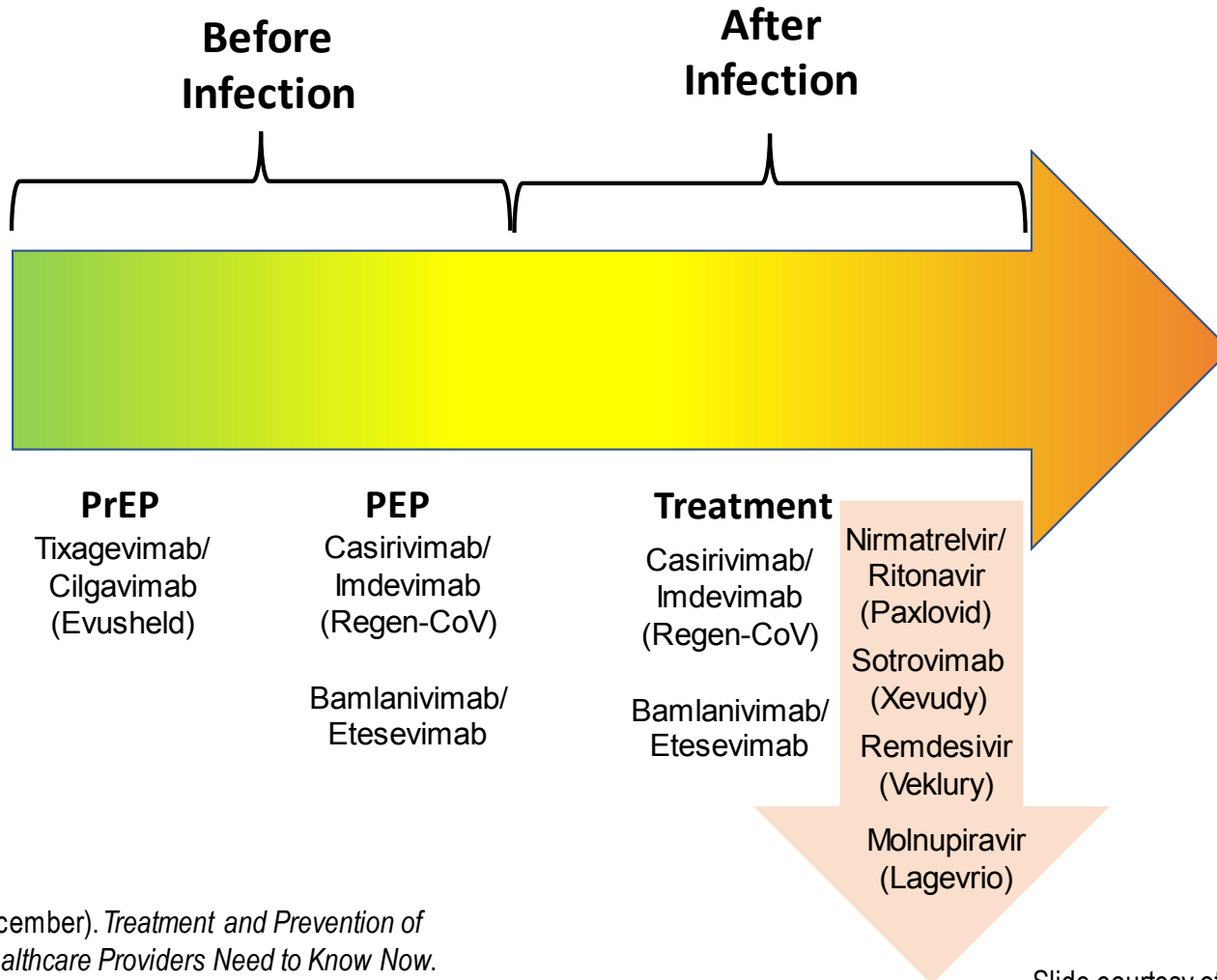
COVID-19 Incidence and Death Rates in Unvaccinated and Fully Vaccinated Adults +/- Booster Doses (Delta and Omicron Variants)

- COVID-19 vaccines reduced risks for infection and COVID-19–associated death during Delta variant predominance and infection risk during Omicron variant emergence.
- Protection was higher among persons who were **fully vaccinated and had received a booster dose** than among **fully vaccinated** persons who **had not** received a booster dose in December.
- The added benefits of booster doses were especially prominent among persons aged 50–64 and ≥65 years.



Johnson AG, Amin AB, Ali AR, et al. COVID-19 Incidence and Death Rates Among Unvaccinated and Fully Vaccinated Adults with and Without Booster Doses During Periods of Delta and Omicron Variant Emergence — 25 U.S. Jurisdictions, April 4–December 25, 2021. *MMWR Morb Mortal Wkly Rep* 2022;71:132–138. DOI: <http://dx.doi.org/10.15585/mmwr.mm7104e2>

COVID-19 Treatments

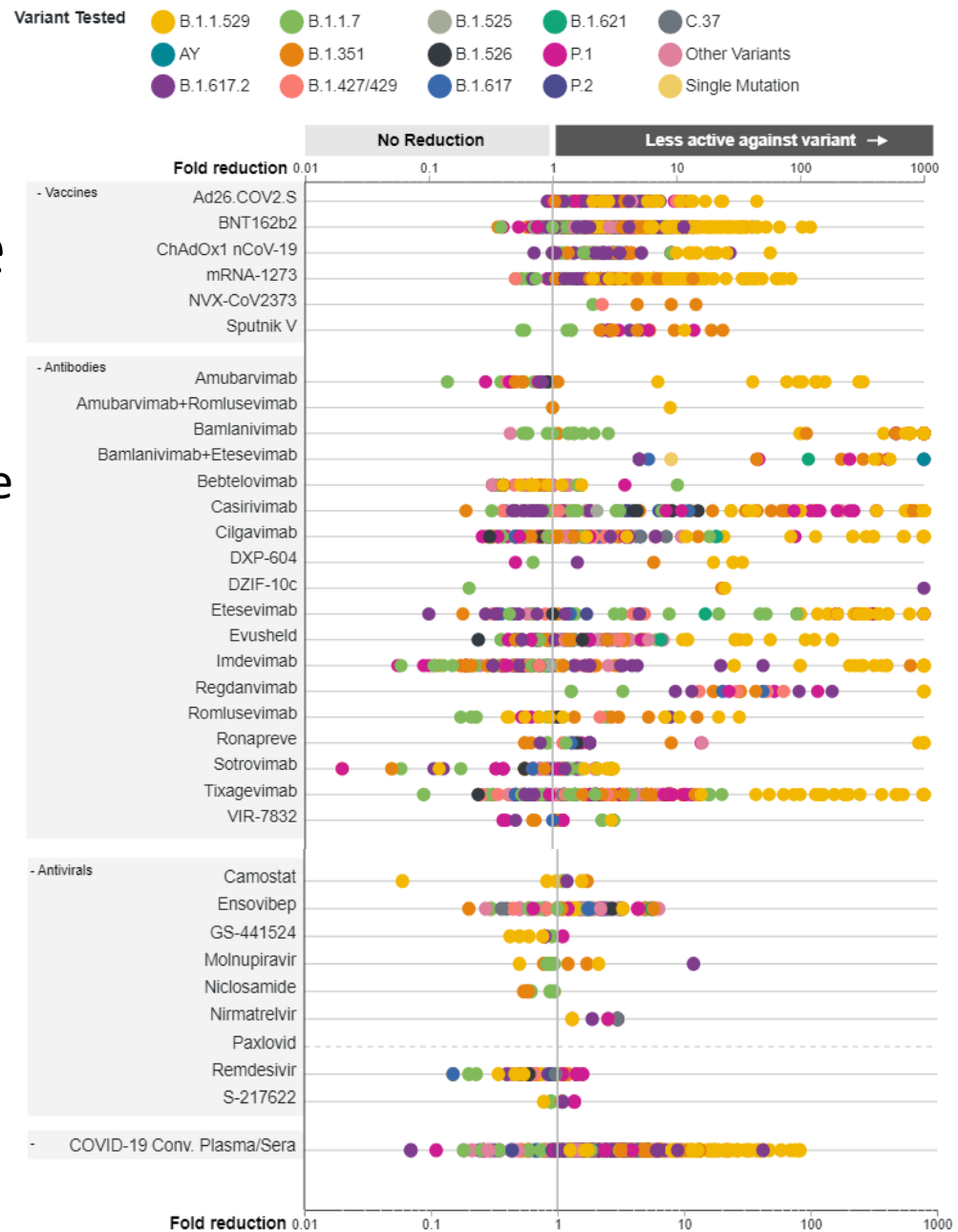


Wohl, D. (2021, December). *Treatment and Prevention of Covid-19 - What Healthcare Providers Need to Know Now.*

Slide courtesy of Dr. David Weber. UNC 2022

SARS-CoV-2 Variants: Reported in vitro The

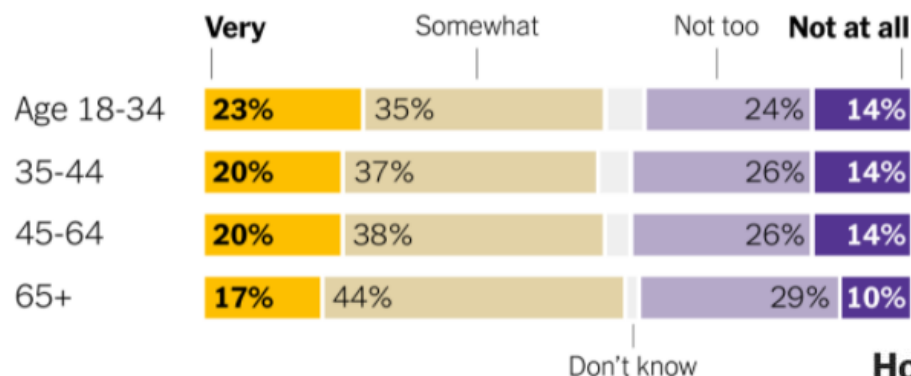
- Omicron = B.1.1.529
- Available monoclonal antibodies with Omicron activity
 - Sotrovimab
 - Evusheld
- Available COVID-19 vaccines have reduced effectiveness against Omicron
- mRNA boosted persons have good vaccine effectiveness to prevent and/or ameliorate COVID-19



Two COVID Americas:

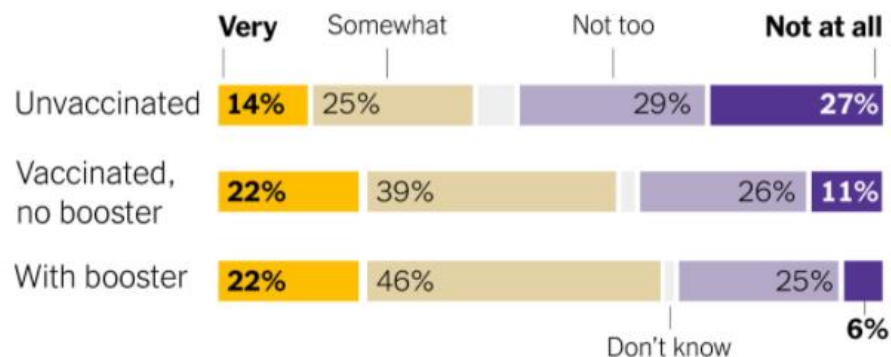
The unvaccinated are less worried than the boosted, according to a recent poll

How worried are you about getting sick from Covid-19 within the next year?



From a survey of 4,411 people conducted in Jan. 2022. | Source: Morning Consult

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From a survey of 4,411 people conducted in Jan. 2022. | Source: Morning Consult

Thank you.

For additional questions:

ica5@duke.edu

Resources

- <https://www.cdc.gov/coronavirus/2019-ncov/>
- <https://www.who.int/emergencies/diseases/novel-coronavirus-2019>
- Your Local Health Department

*Photos used in this presentation are freely available from
www.aap.org, www.CDC.gov or www.pexels.com*