



# State of COVID-19

Dr. Ricardo Gonzalez-Fisher

*Convening Across Sectors for Colorado's Health  
Equity and Wellness*

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October 22, 2022





Colorado Community Engagement Alliance Against COVID-19 Disparities

What is CO-CEAL?

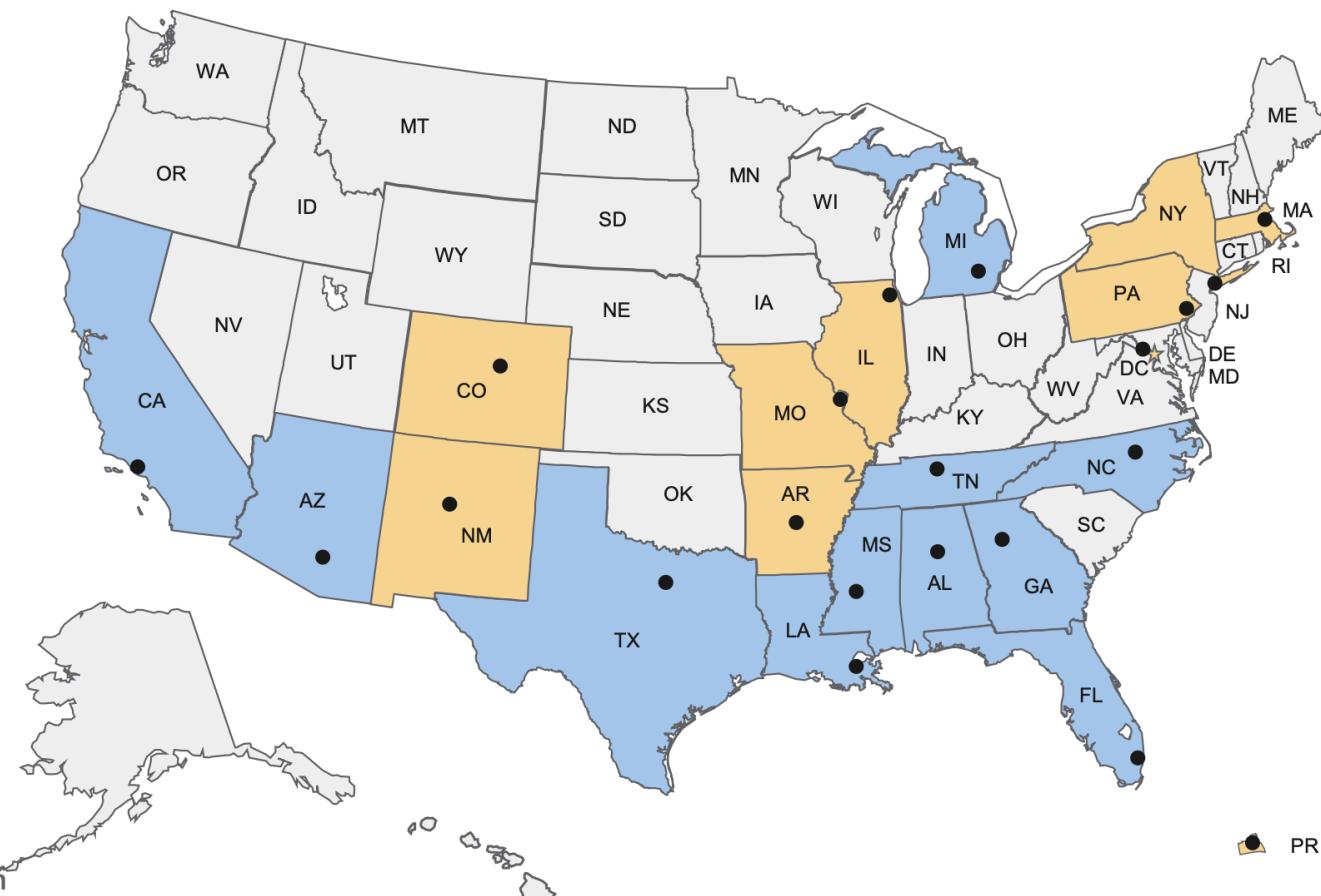
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# CEAL Teams

CEAL initially supported research teams in 11 states to focus on urgent community-engaged research and outreach focused on COVID-19 awareness and education among communities hardest hit by the pandemic. In April 2021, CEAL welcomed **10 additional teams** to the Alliance.

## Current Teams

- Alabama
- Arizona
- California
- Florida
- Georgia
- Louisiana
- Michigan
- Mississippi
- North Carolina
- Tennessee
- Texas



## 2021 Additions

- Arkansas
- Colorado
- DMV
- Illinois
- Massachusetts
- Missouri
- New Mexico
- New York
- Pennsylvania
- Puerto Rico

# NIH CEAL Overview

*NIH Community Engagement Alliance (CEAL) Against COVID-19 Disparities was established to lead outreach and engagement efforts in underserved ethnic and racial minority communities disproportionately affected by the COVID-19 pandemic and in overall vaccine and therapeutic trials in the future.*

## COMMUNITIES OF FOCUS

African Americans • Hispanic/Latinos • American Indians/Alaskan Natives • Asian Americans, Native Hawaiians & Pacific Islanders



**Establish Partnerships  
within the Community**



**Address Misinformation  
within Communities of  
Color**



**Grow an Understanding  
and Trust in Science**



**Accelerate the Uptake of  
Beneficial Treatments**

## POLICY, EDUCATION, AND COMMUNICATION

Deploy a set of public messages that  
**present accurate information about  
COVID-19.**

## CEAL RESEARCH COORDINATION

Create mechanisms, processes, and  
structures to **conduct urgent  
community-engaged research and  
outreach** within the target community.

# COVID-19 Vaccine and Testing Knowledge/Hesitancy

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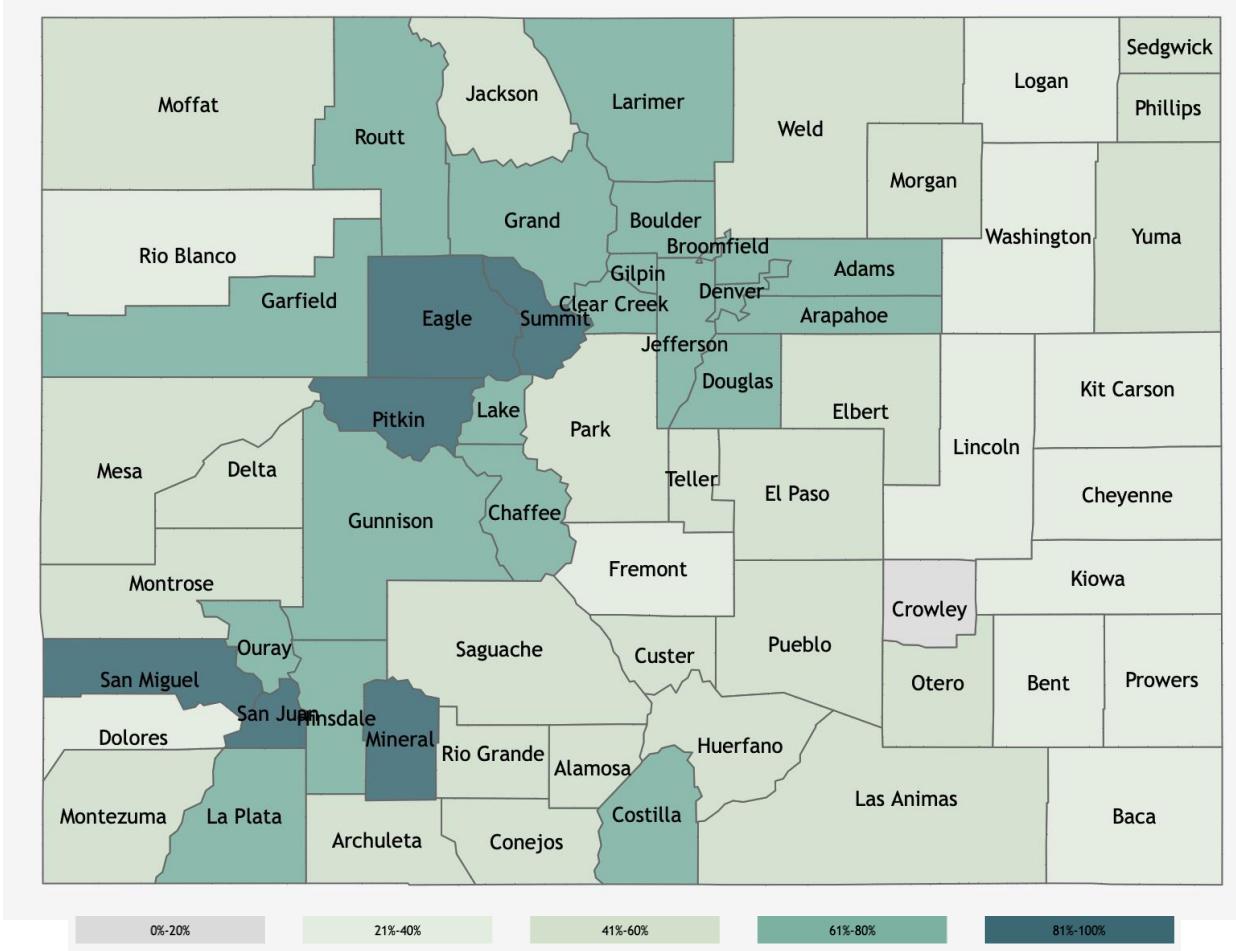
3 rounds of 5 Community Translations  
creating messages and materials

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Community Connectors and Data  
Collectors surveying 5 cohorts in each  
community

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Baseline survey followed by 2  
subsequent surveys on knowledge,  
attitudes, intents and actual vaccination



# Communities and Geography

- Urban – focused in the Denver Metro Area
    - LatinX/Hispanic (Denver + Pueblo)
    - Black/African American
    - American Indian/Alaska Native
  - Rural – two communities of focus
    - Black/Immigrant – Morgan/Weld Counties
    - LatinX/Hispanic – SLV

# COVID 19 update – as of September 2022

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# COVID Update

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Numbers update

Omicron & BA.5

Vaccines & Stopping the spread

Treatments

COVID complications

A glimpse of the future



The number of people infected by the disease continues to change every day. Covid is definitely "still a thing".

Fifty percent of respondents have had, or believe they've had, COVID-19 at some point since the pandemic began. Among these people, 5% have been infected this month, and 10% say their most recent brush with the virus was last month. This equates to roughly 7% of the total adult population in the U.S., or roughly 18.5 million Americans who have had the virus since July 2022.

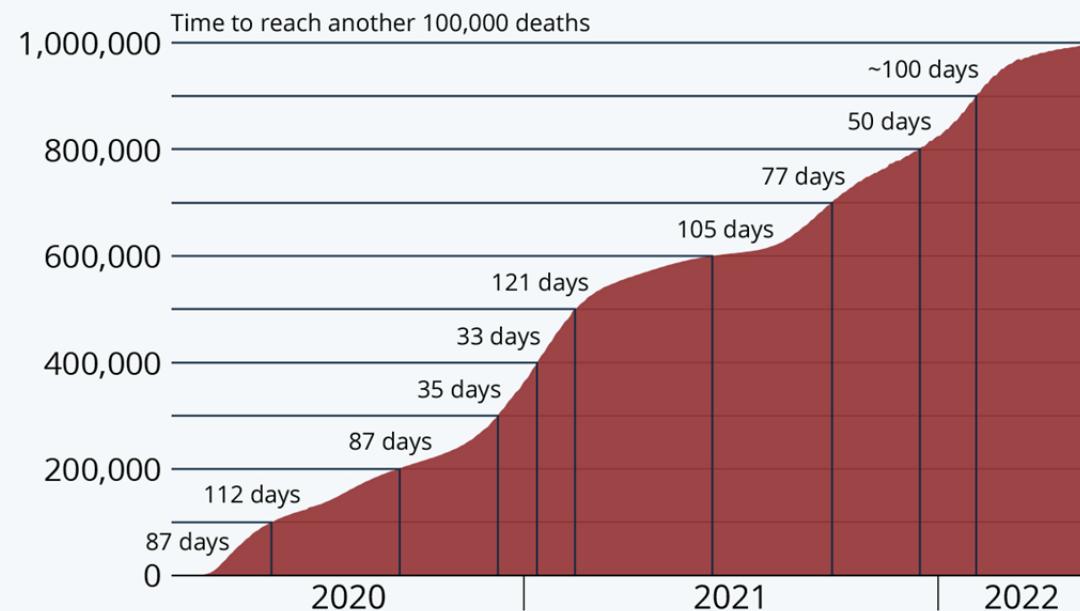
Nearly four in ten Americans say someone they know has been reinfected with COVID-19 in the past few weeks (38%).

While the impact of the disease varies by location, there are more than 519.5 million confirmed cases of people with COVID-19 around the globe and more than 6.2 million people have died from the disease, according to the WHO.

According to the CDC's rough picture of the outbreak in the U.S. by Sept 8/2022 we have 94,888,931 cases, 1,043,921 deaths.

## U.S. Hits Grim Milestone of 1 Million Covid Deaths

Cumulative number of Covid-19 deaths in the United States



Source: U.S. Centers for Disease Control and Prevention



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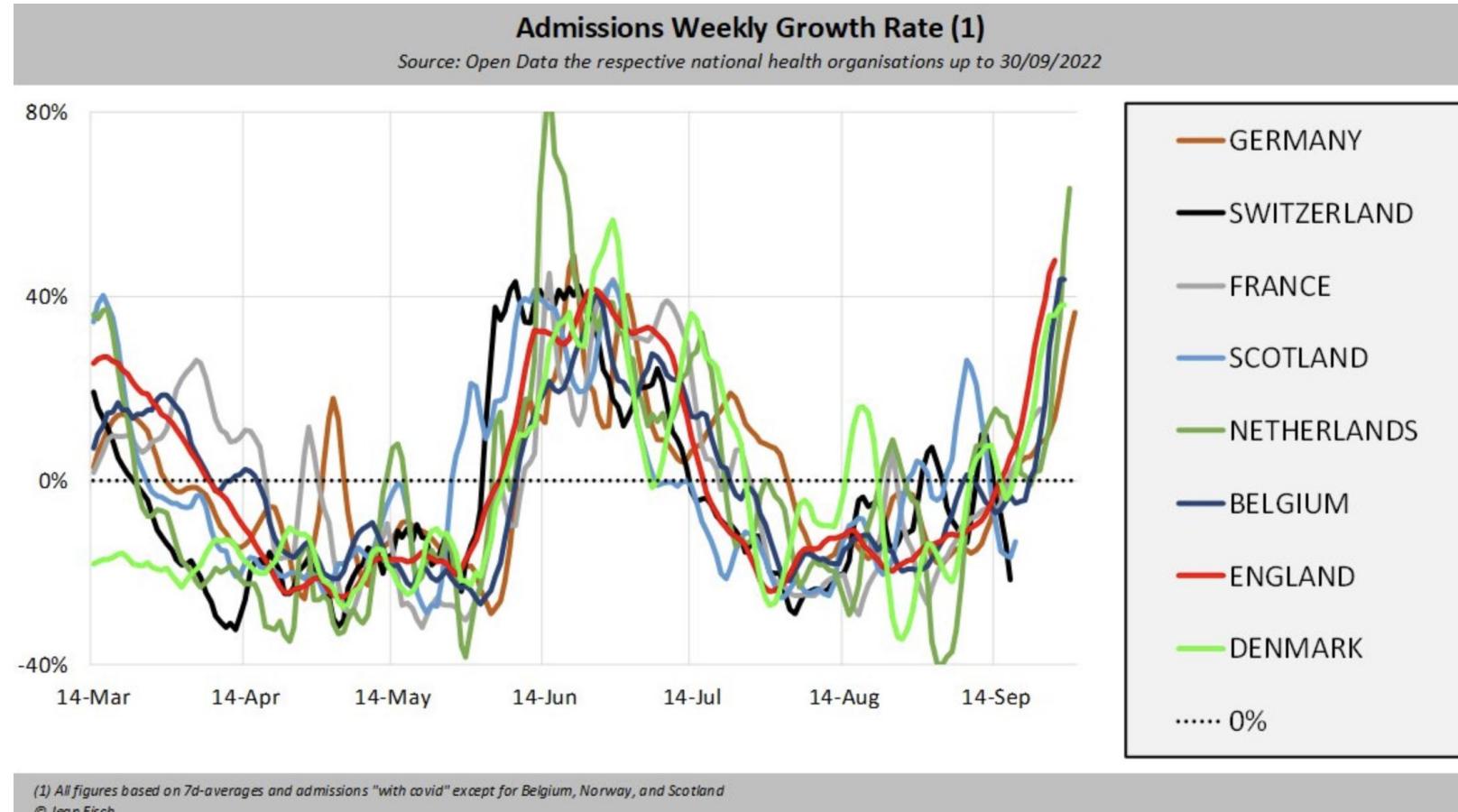
# Variants – Omicron & BA.5

Omicron variants are now dominant in Colorado, with BA.5 estimated at 19% of infections as of mid June – CDC

BA.5 is the most infectious variant seen to date - 50 mutations, including 26 that are unique to the variant—and more than 30 on the spike protein

Best at evading vaccine immunity and more capable of re-infecting individuals

Vaccines and stopping transmission are more important than ever



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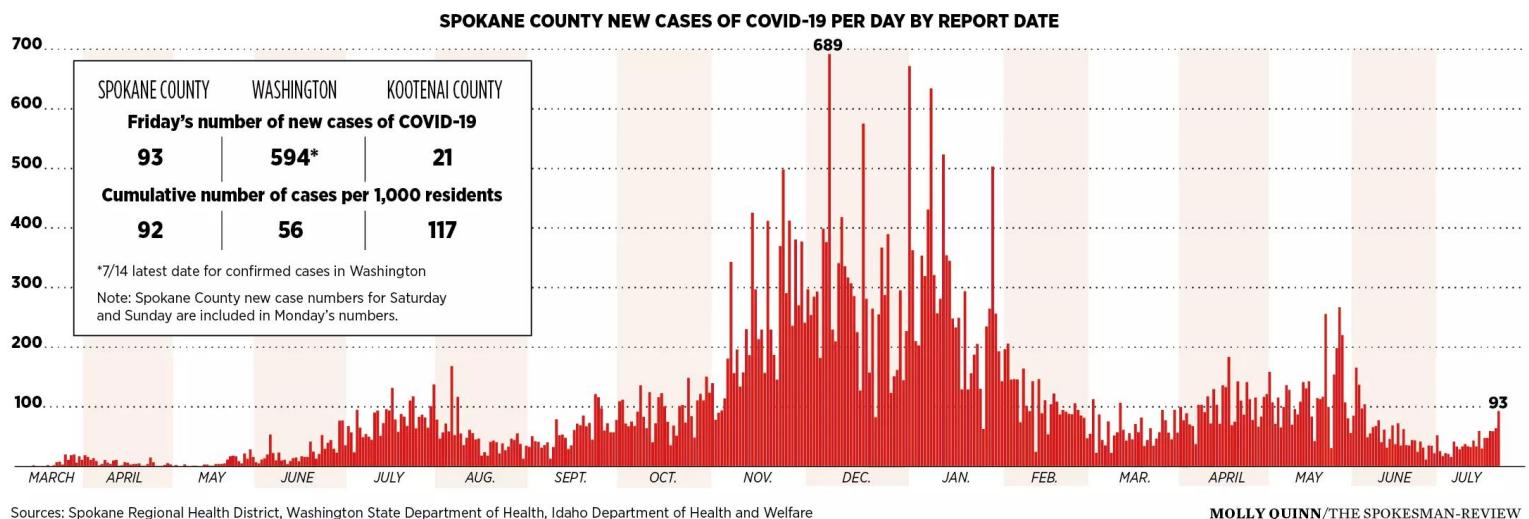
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# Strict measures are critical for slowing the spread of the disease



- Near the beginning of the pandemic, public health experts directed their efforts toward "flattening the curve" -fewer patients would allow hospitals to better manage the demands of patients who are sick with COVID-19 and other illnesses.
- But toward the end of 2020, a steady increase in cases in the U.S. was becoming a third wave (or, maybe, a continuation of a single wave that started in the spring and never stopped).
- As cold weather drove more people indoors, many government officials, implemented new restrictions that included curfews, limiting the number of people who could gather indoors, and establishing mask mandates.
- The idea is that herd immunity would start to protect even those people who have not been infected. While the timeline for population immunity is still uncertain, researchers believe we will likely not reach it any time soon.
- As was seen with the highly contagious Delta variant, which became the predominant virus during the summer of 2021, experts are now concerned that outbreaks of the Omicron variant—the current predominant virus—could affect overall progress.

# Despite continued transmission and new variants, most Americans less inclined to take precautions

Jan 2020-Aug 2022

- At this point in the Covid-19 pandemic, much of the United States has slowly moved away from following or enforcing mitigation measures.
- Among public health leaders, there has been growing division around this pivot, and that stems from frustration around how the pandemic has been managed in the United States

## Half of Americans report having COVID-19

Despite continued transmission and new variants, most Americans less inclined to take precautions or alter behavior

**50%** 

of Americans have had or suspect they have had COVID-19 at some point since January 2020

**68%** 

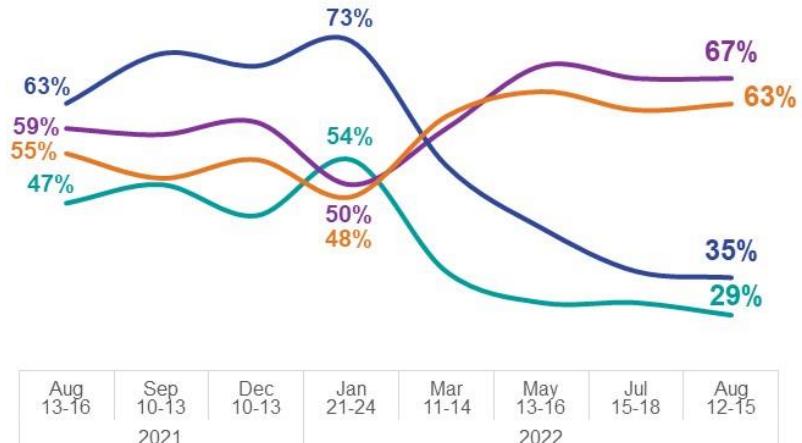
of Americans who have had COVID-19 and are vaccinated say they had a breakthrough infection

**38%** 

of Americans know someone who has been reinfected with COVID-19 in the past few weeks

### Percentage of Americans who have \_\_\_\_\_ in the past week

■ Worn a mask outside the home at least sometimes ■ Social distanced  
■ Visited friends or relatives ■ Gone out to eat



Axios/Ipsos poll: Despite continued transmission and new variants, most Americans less inclined to take precautions or alter behavior  
16 August 2022

# Experience with infection less likely to modify behavior

Among those taking a vacation, few have taken extra steps to avoid a COVID-19 infection prior to their trip.

The most practiced behavior? Washing or sanitizing hands more frequently – but fewer than half report doing this (45%).

2/3 report going out to eat and visiting people outside of their household,

social distancing remains at an all-time low (29% -down from 47% one year ago)

1/5 have canceled or skipped attending large gatherings – again, lower than in mid-February, on the tail end of the spike in cases due to the Omicron variant (49%).



# Vaccination remains a key strategy for avoiding infection

Vaccines continue to be vital tools to reduce risks of serious illness and death

Although Omicron is better at evading vaccine immunity, vaccines are still highly effective at preventing serious illness

Boosters are important for those who have completed their primary series, especially if this was completed > 6 months ago

Second boosters for adults 50 and older are also important

# New bivalent boosters – why?

**Greater protection** against infection and transmission, by boosting our first line of defense—neutralizing antibodies

**Longer protection** against infection and severe disease, even just by a few months.  
(Unfortunately, we are at the mercy of time to know whether this will happen, but we are hopeful given data from our bivalent Beta vaccine clinical trials)

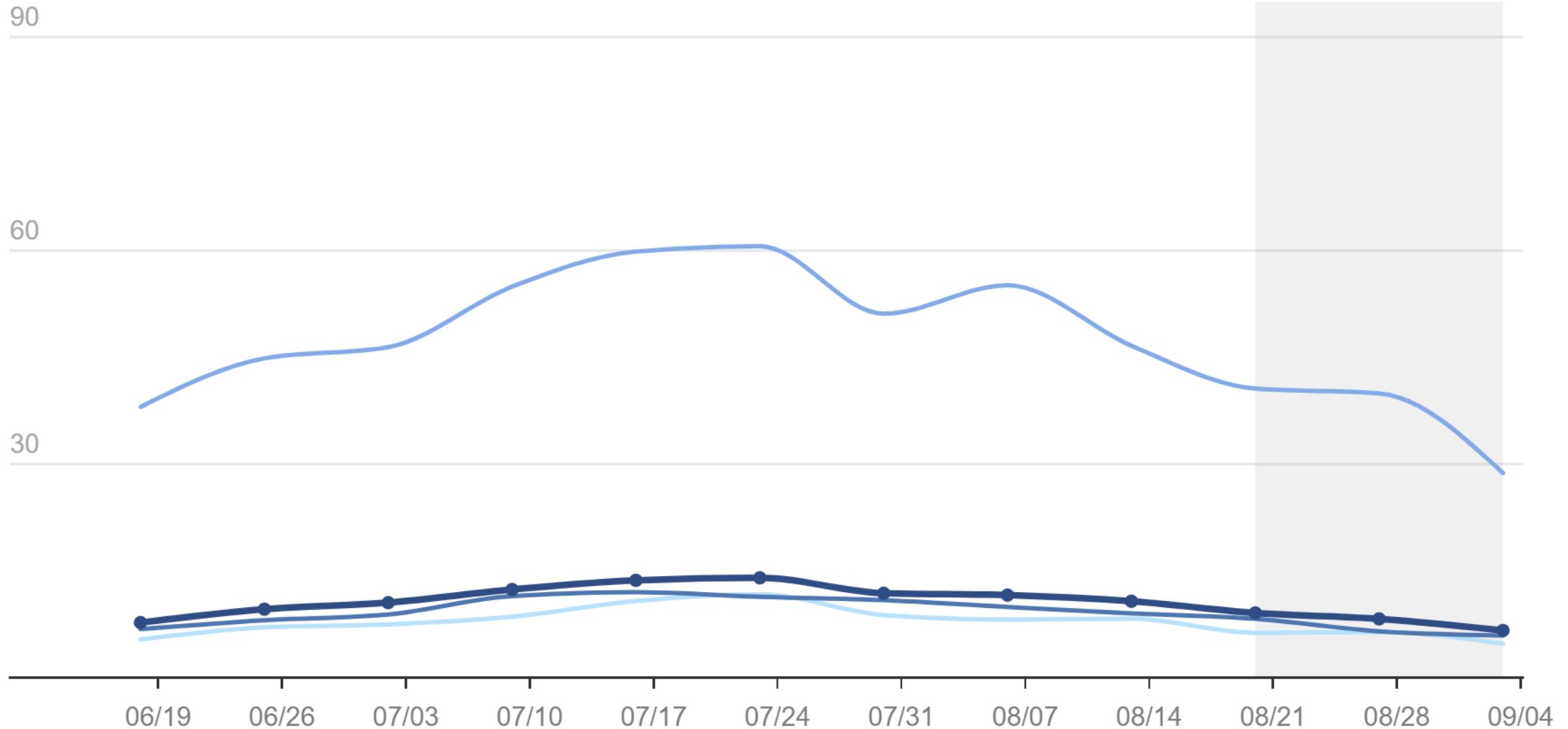
**Broader protection** or the ability to create antibodies that “see” more virus parts and “attach” more strongly compared to the antibodies we have right now.

Pfizer bivalent booster available for ages 12 and up.

Moderna bivalent booster available for ages 18 and up.

Hospitalizations per 100,000 people (age-adjusted)

Recent data may be incomplete.



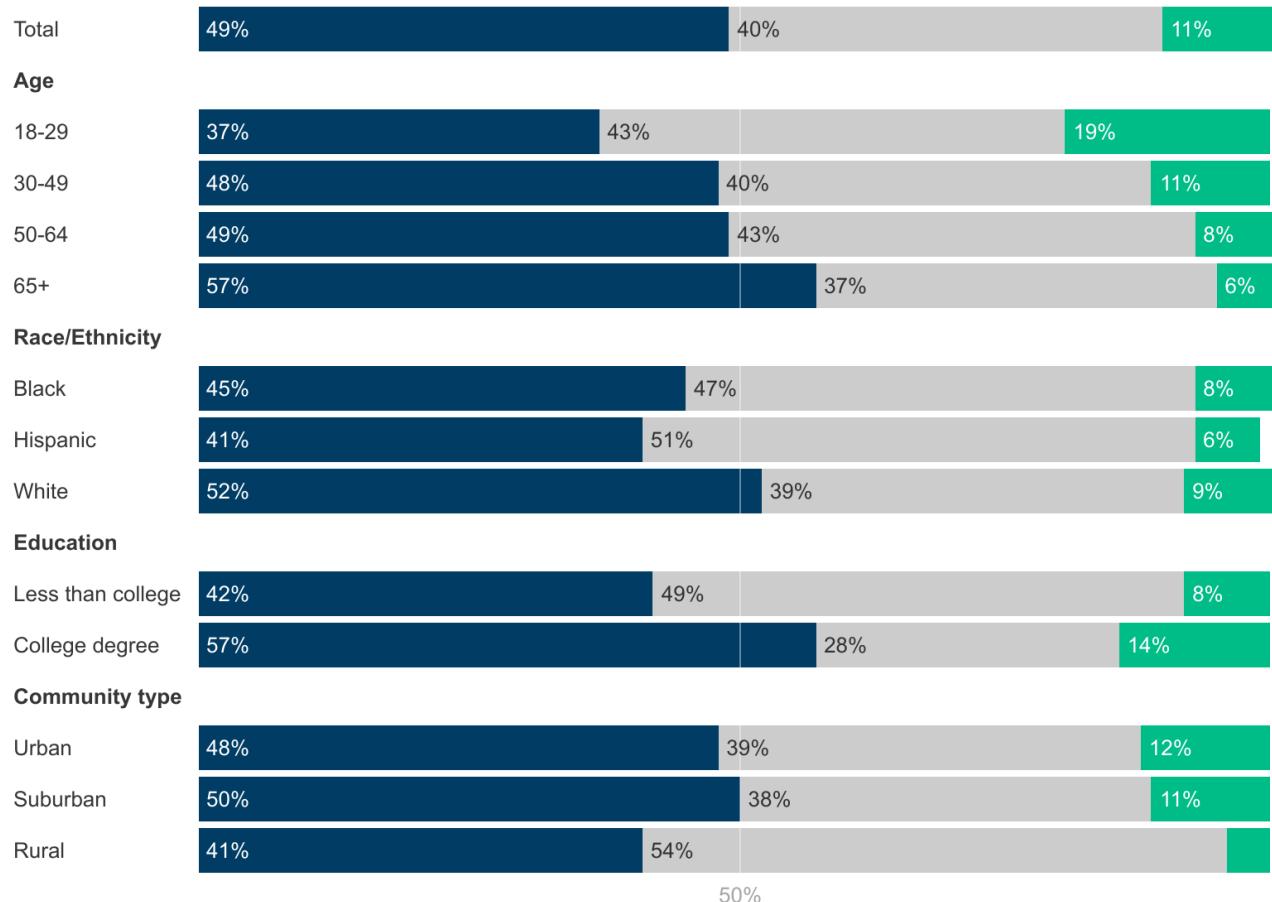
Hospitalizations by vaccination status in New York City. Top blue line is unvaccinated. Bottom lines are 1 booster and 2 boosters.

Figure 2

## Two In Five Fully Vaccinated Adults Aren't Sure If The Updated COVID-19 Booster Dose Is Recommended For Them

As far as you know, has the CDC recommended vaccinated people like you get the new, updated COVID-19 booster, has it not yet recommended the new booster for people like you, or are you not sure?

■ Yes ■ Not sure ■ No



NOTE: Among those who are fully vaccinated or fully vaccinated and received at least one booster dose, representing 73% of the population. See topline for full question wording.

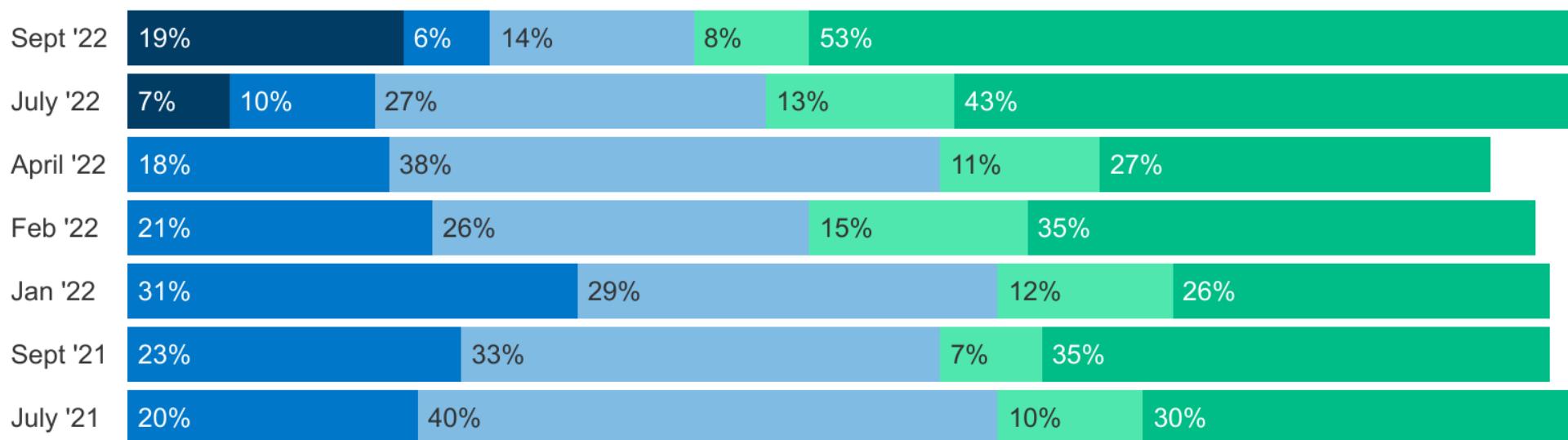
SOURCE: KFF COVID-19 Vaccine Monitor (Sept 15-26, 2022)

Figure 4

## One In Five Parents Of Children Under Age Five Now Say Their Child Has Gotten Vaccinated, Half Say They "Definitely" Won't Get It

Thinking about your child between the ages of 6 months and 4 years, have they received at least one dose of a COVID-19 vaccine, or not? If not, do you think you will get them vaccinated...?

■ Got vaccine ■ Right away ■ Wait and see ■ Only if required ■ Definitely not



NOTE: Among parents or guardians of children between the ages of 6 months through 4 years. July 2021-April 2022 question was asked of parents or guardians of children under the age of five with question wording: "Once there is a COVID-19 vaccine authorized and available for your child's age group, do you think you will..." See topline for full question wording.

SOURCE: KFF COVID-19 Vaccine Monitor

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# Paxlovid

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- Recommended for high risk groups: age or other risk factors



**nirmatrelvir/ritonavir (Paxlovid) can be prescribed for mild to moderate COVID-19 in non-hospitalized patients aged 12 years or older who are at high risk of progression to severe disease due to age, obesity, cancer, or chronic diseases such as type 1 or type 2 diabetes**

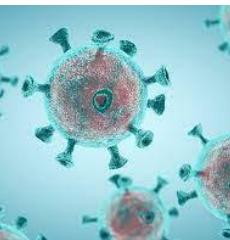
# Test and treat

## Rebound COVID

- Health Alert Network of the US Centers for Disease Control and Prevention (CDC) issued a health advisory on May 24
- “a brief return of symptoms may be part of the natural history of SARS-CoV-2...infection in some persons, independent of treatment with Paxlovid and regardless of vaccination status.”



COVID-19 rebound in people who've taken Paxlovid appears to be mild and short-lived, resolving, on average, in 3 days without additional anti-COVID-19 treatment.



It is unclear at this point that rebound is related to drug treatment. As an additional analysis of the EPIC-HR clinical trial data showed that about 1% to 2% of participants in both the treatment and placebo groups tested positive after testing negative



More questions than answers

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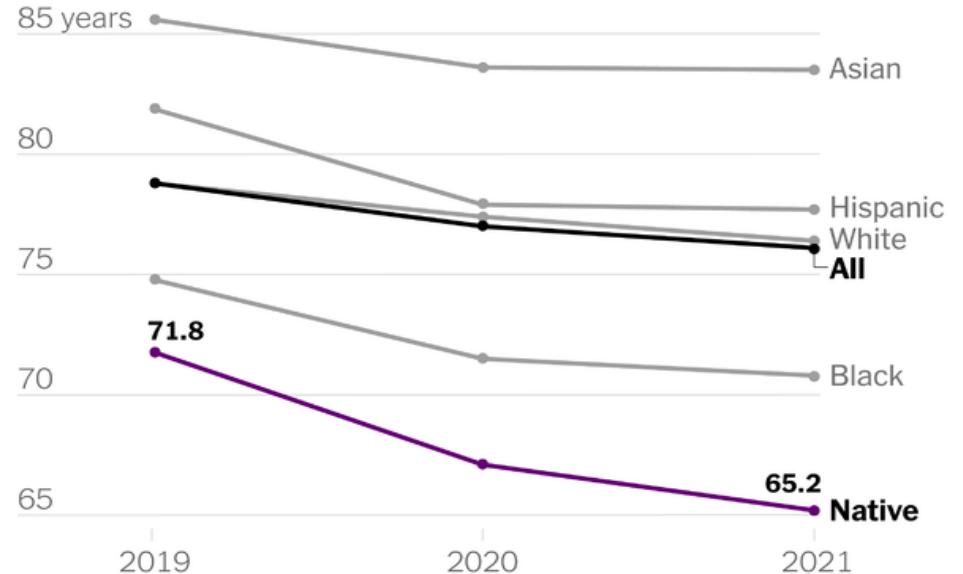
# COVID-19 Complications



- Mortality has had an impact on life expectancy and will have a high impact in the next generation of Americans
- More than 6 million people have died from COVID-19 worldwide (above 1 million in the US)

- Worrisome when drops in life expectancy are measured in tenths of a year
- The current drop erases the equivalent of more than four decades of life expectancy gains in the US
- The average Native American person is now expected to live as long as the average American did in 1944
- The main causes for Covid's death toll in these communities appears to involve poverty, higher rates of underlying health problems, as well as worse access to health care.
- Covid magnified those health disparities, causing a drop in life expectancy with no modern precedent in the U.S.

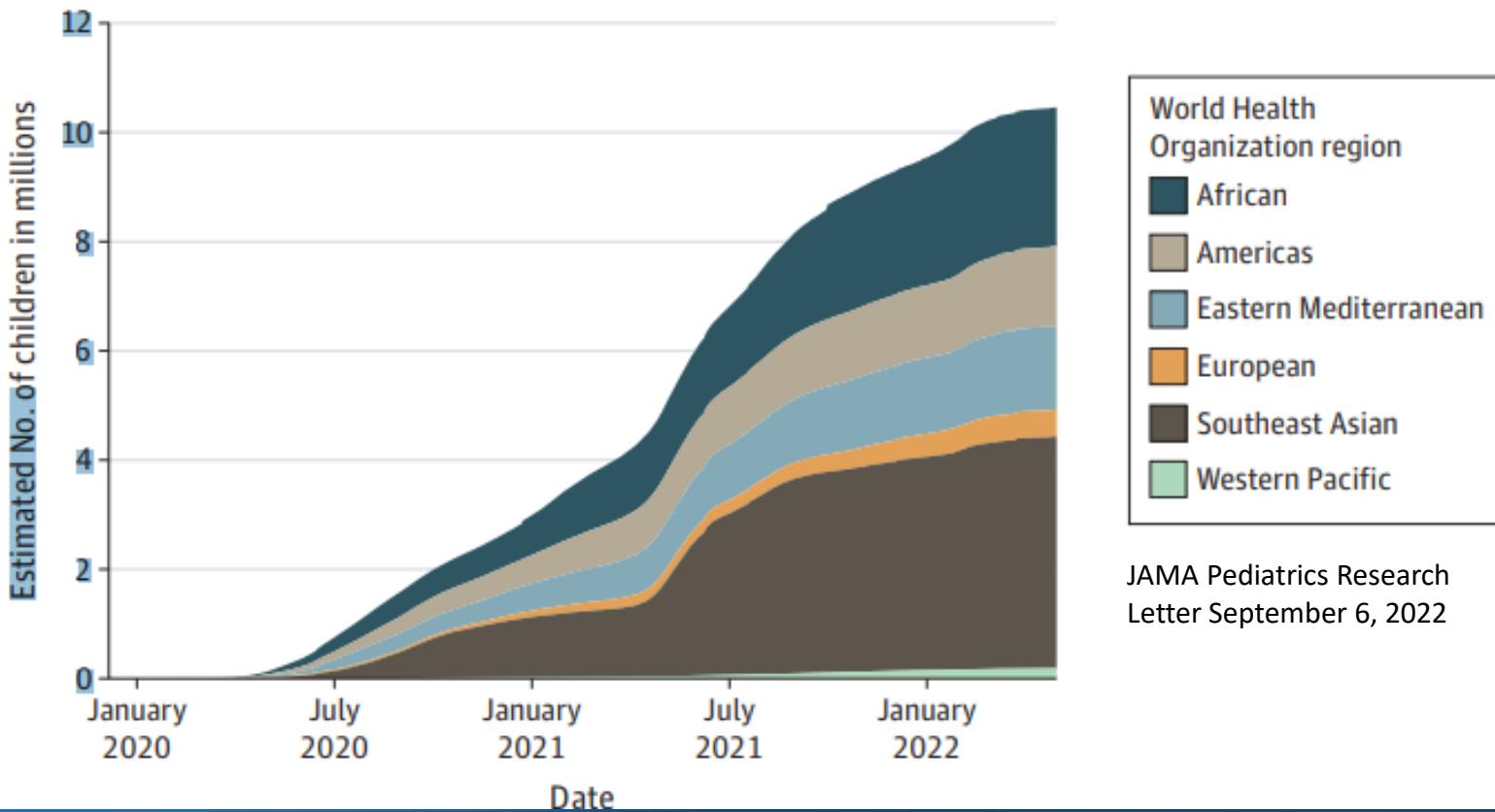
**U.S. life expectancy**



# Orphanhood and Caregiver Loss Among Children Based Global Excess COVID-19 Death Estimates

Figure. World Health Organization (WHO) Regional and National Estimates of Orphanhood and Primary and/or Secondary Caregiver Loss From January 1, 2020, Through May 1, 2022

A Regional estimates



JAMA Pediatrics Research  
Letter September 6, 2022

Table. Estimates of Orphanhood and Caregiver Loss Using Adjusted Excess Deaths<sup>a</sup>

Data source	No. (95% credible interval)			
	Composite deaths	Orphanhood	Orphanhood and primary caregiver loss	Orphanhood and primary and/or secondary caregiver loss
<b>December 31, 2021</b>				
The Economist	18.0 (14.4-21.5)	9.2 (7.5-10.9)	9.7 (8.0-11.5)	12.3 (9.8-14.8)
IHME	18.3 (17.7-18.8)	9.7 (9.1-10.3)	10.3 (9.7-10.9)	12.9 (12.2-13.5)
WHO	15.6 (13.9-17.3)	6.9 (5.8- 8.0)	7.2 (6.1-8.4)	9.5 (8.1-11.0)
<b>April 1, 2022</b>				
The Economist	21.3 (17.2-25.4)	11.0 (9.1-12.9)	11.6 (9.7-13.6)	14.8 (11.9- 17.6)
IHME	20.5 (19.9-21.1)	10.6 (10.0-11.2)	11.2 (10.6-11.9)	14.1 (13.4-14.8)
WHO	17.5 (15.7-19.3)	7.5 (6.4-8.7)	7.9 (6.7-9.2)	10.5 (8.9-12.0)

Abbreviations: IHME, Institute for Health Metrics and Evaluation; WHO, World Health Organization.

<sup>a</sup> Estimates are reported in millions and used *The Economist*, IHME, and WHO excess data through 2021 (end of reporting period for IHME and WHO data sets) and adjusted using Johns Hopkins University data through May 1, 2022. Composite death data are calculated as the maximum COVID-19 and excess

deaths at the country level. We used excess deaths for most countries because excess deaths tend to be greater than reported COVID-19 deaths; in those countries where excess deaths are negative or lower than COVID-19 deaths (for example, because of lockdown-associated reductions in motor vehicle fatalities and other types of injuries), we derived pandemic orphanhood and caregiver loss estimates from reported COVID-19 deaths.

# COVID-19 complications

## Long covid

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- More than 6 million people have died from COVID-19 worldwide (nearly 1 million in the US)
- Mortality is not the only adverse consequence of COVID-19. Many survivors suffer long-term impairment, officially termed postacute sequelae of SARS-CoV-2 infection.

Symptoms lasting more than 30 days after acute COVID infection—

More likely in those who have more severe COVID-19, but severe acute disease is not a prerequisite.

The most common symptom of long COVID is fatigue. More severe cases involve damage to a variety of organ systems (the lungs, heart, nervous system, kidneys, and liver have all been implicated), along with mental health impairment.

Physiological pathways may involve direct consequences of the viral infection along with inflammatory or autoimmune responses.

New Federal report states Long COVID may qualify as an ADA disability.

## Post-COVID-19 Symptoms and Conditions Among Children and Adolescents—United States, March 1, 2020–January 31, 2022

Lyudmyla Kompaniets, PhD<sup>1</sup>; Lara Bull-Otterson, PhD<sup>1</sup>; Tegan K. Boehmer, PhD<sup>1</sup>; Sarah Bacu<sup>1,2</sup>; Pablo Alvarez, MPH<sup>1,2</sup>; Kai Hong, PhD<sup>1</sup>; Joy Hsu, MD<sup>1</sup>; Aaron M. Harris, MD<sup>1</sup>; Adi V. Gundlapalli, MD, PhD<sup>1</sup>; Sharon Saydah, PhD<sup>1</sup>

Post-COVID-19 (post-COVID) symptoms and conditions\* are new, recurring, or ongoing health problems that occur 4 or more weeks after infection with SARS-CoV-2 (the virus that causes COVID-19). Previous studies have characterized and estimated the incidence of post-COVID conditions among adults (*1,2*), but data among children and adolescents are limited (*3–8*). Using a large medical claims database, CDC assessed nine potential post-COVID signs and symptoms (symptoms) and 15 potential post-COVID conditions among 781,419 U.S. children and adolescents aged 0–17 years with laboratory-confirmed COVID-19 (patients with COVID-19) compared with 2,344,257 U.S. children and adolescents without recognized COVID-19 (patients without COVID-19) during March 1, 2020–January 31, 2022. The analysis identified several symptoms and conditions with elevated adjusted hazard ratios among patients with COVID-19 (compared with those without). The highest hazard ratios were recorded for acute pulmonary embolism (adjusted hazard ratio [aHR] = 2.01), myocarditis and cardiomyopathy (1.99), venous thromboembolic event (1.87), acute and unspecified renal failure (1.32), and type 1 diabetes (1.23), all of which were rare or uncommon in this study population. Conversely, symptoms and conditions that were most common in this study population had lower aHRs (near or below 1.0). Patients with COVID-19 were less likely than were patients without to experience respiratory signs and symptoms, symptoms of mental conditions, muscle disorders, neurological conditions, anxiety and fear-related disorders, mood disorders, and sleeping disorders. COVID-19 prevention strategies, including vaccination for all eligible children and adolescents, are critical to prevent SARS-CoV-2 infection and subsequent illness, including post-COVID symptoms and conditions (*9*).

\*Linked medical claims and commercial laboratory data from a health care encounter possibly restricted to children.

and adolescents aged 0–17 years who were continuously enrolled in a health insurance plan during March 1, 2019–January 31, 2022. Children and adolescents aged 0–17 years with laboratory-confirmed COVID-19 and those without recognized COVID-19<sup>§</sup> were matched 1:3 based on age at encounter, sex, and month of index date.<sup>¶</sup> Patients were followed for a minimum of 60 days and a maximum of 365 days or until January 31, 2022, whichever occurred first. Scientific literature on symptoms and conditions associated with post-COVID illness among children or adults was reviewed (*1–5*). Symptoms and conditions were identified by the first occurrence and classified based on the *International Classification of Diseases, Tenth Revision, Clinical Modification* (ICD-10-CM)

<sup>§</sup>A retrospective cohort of children and adolescents aged 0–17 years with continuous enrollment in an insurance plan during March 1, 2019–January 31, 2022, was identified within a subset of CDC-licensed HealthVerity data that included persons with a health care encounter possibly related to COVID-19. Patients with COVID-19 were selected from among patients with a positive SARS-CoV-2 test result during March 2020–November 2021 or ICD-10-CM code of B97.29 (other coronavirus as the cause of disease class elsewhere) during March–April 2020 or U07.1 code (COVID-19, identified [laboratory-confirmed]) during April 2020–November 2021 ([www.cdc.gov/nchs/data/icd/Announcement-New-ICD-code-coronavirus-3-18-2020.pdf](http://www.cdc.gov/nchs/data/icd/Announcement-New-ICD-code-coronavirus-3-18-2020.pdf)). Patients without COVID-19 were selected excluding patients who had any ICD-10-CM codes related to (A41.89, B34.2, B97.21, B94.8, J12.81, J12.82, J12.89, M3 U07.1, or U07.2), a positive SARS-CoV-2 test result, or recently COVID-19 (casirivimab/imedevimab, etesevimab/bamlanivimab/bebtelovimab, nirmatrelvir, molnupiravir, or remdesivir) during the study period. Vaccination status of patients was not known.

<sup>¶</sup>The index date for the group of patients with COVID-19 was the first claim with a COVID-19 diagnosis or a positive SARS-CoV-2 test result (whichever occurred first) without COVID-19 in the main analysis. The index date for the group of patients without COVID-19 was the first claim during the month in which the patient was assigned to a patient with COVID-19. The index date for the group of patients with COVID-19 in the sensitivity analysis was the first claim with a COVID-19 diagnosis or a positive SARS-CoV-2 test result, first health care encounter with an ICD-10-CM code of B97.29, or first prescription of R53.8.

# MMWR report on Long COVID symptoms in children

## Summary

### What is already known about this topic?

Children and adolescents might be at risk for certain post-COVID symptoms and conditions.

### What is added by this report?

Compared with patients aged 0–17 years without previous COVID-19, those with previous COVID-19 had higher rates of acute pulmonary embolism (adjusted hazard ratio = 2.01), myocarditis and cardiomyopathy (1.99), venous thromboembolic event (1.87), acute and unspecified renal failure (1.32), and type 1 diabetes (1.23), all of which were rare or uncommon in this study population.

### What are the implications for public health practice?

COVID-19 prevention strategies, including vaccination for all eligible persons aged ≥6 months, are critical to preventing SARS-CoV-2 infection and subsequent illness, and reducing the public health impact of post-COVID symptoms and conditions among persons aged 0–17 years.

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# New and emergent situations

What if the emergency is over?

Many uninsured people could lose access to free COVID-19 vaccines, testing and treatment as federal funds run out



## Monkey pox

Conspiracy theories are evolving relating COVID-19 vaccines to immune system suppression



Childhood hepatitis outbreak

Conspiracy theories

Too much isolation?

A perfect “match” for enterotoxin absorption

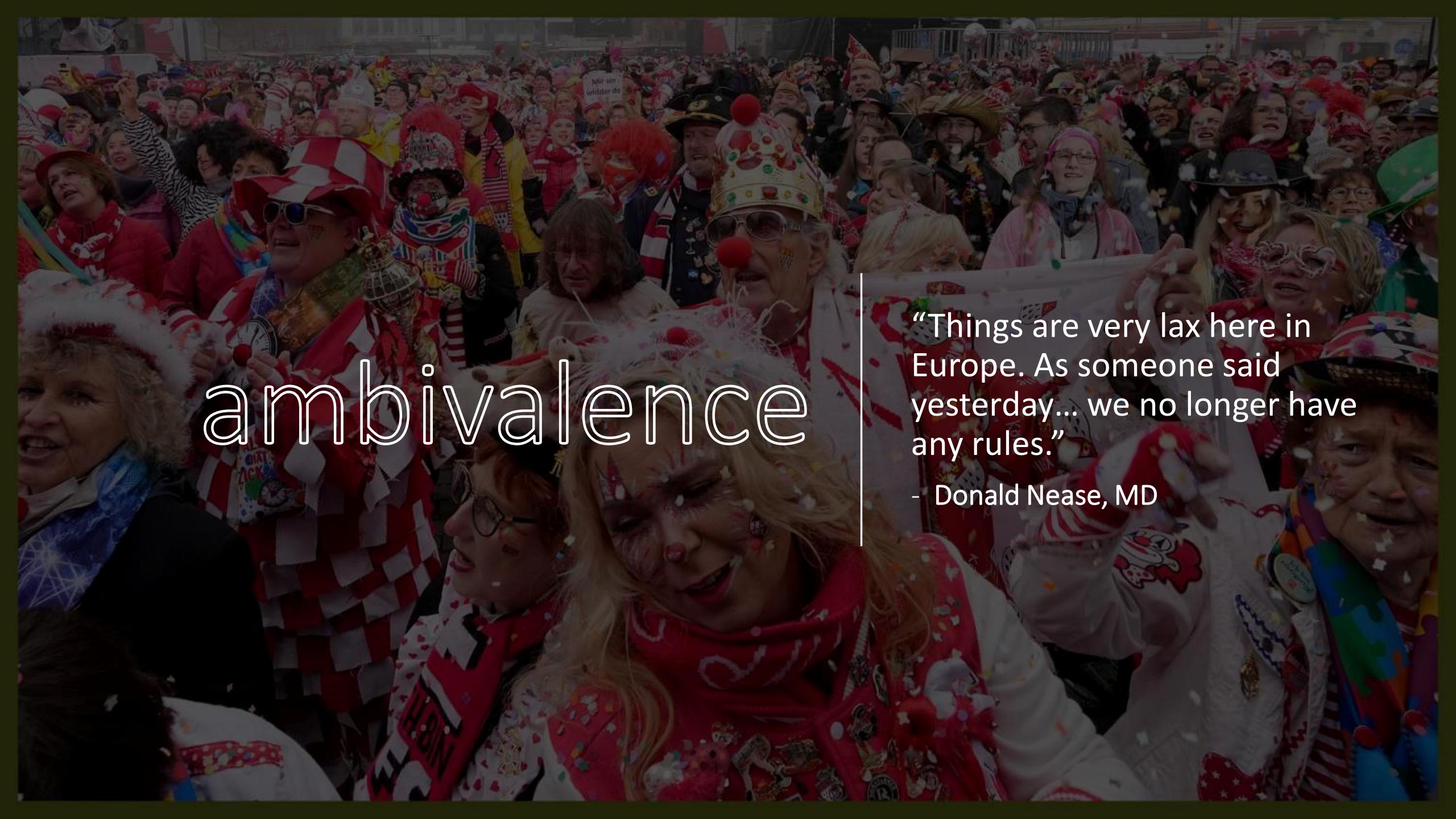
Could we expect others to occur?



## Public health communication

Public health communications operate on the principles of transparency, reliability, and trust. If you can do damage to any of the principles, it can have potentially devastating consequences.





# ambivalence

“Things are very lax here in Europe. As someone said yesterday... we no longer have any rules.”

- Donald Nease, MD

# Americans may be tuning out specific details related to the pandemic

- 38% say they are very or somewhat familiar with the new sub-variant, (Omicron BA.5)
- 1/3 are at least somewhat familiar with recent news reports about “COVID-19 rebound” infections, but only 4% report knowing someone who has experienced this after taking Paxlovid (including President Biden)
- ¼ are familiar with Paxlovid, the antiviral pill used to treat COVID-19 this has been constant since November 2021.
- While half of Americans correctly identify that *“studies suggest that prior COVID-19 infections or antibodies from vaccines may not protect against the latest coronavirus variant, Omicron BA.5,”* 40% of Americans are unsure whether this statement is true or false

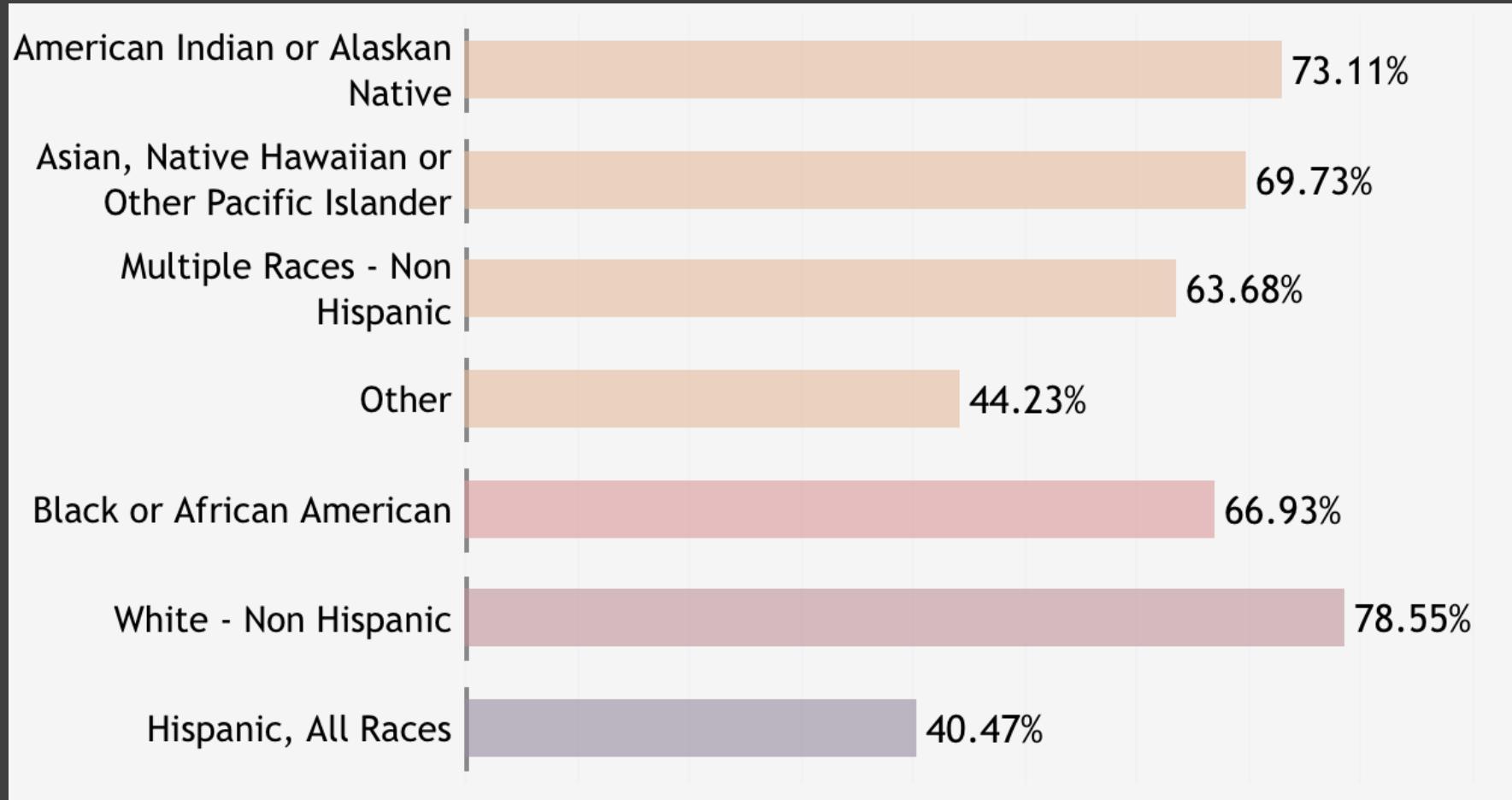
# CO-CEAL

# Wave 1 Data Snapshot

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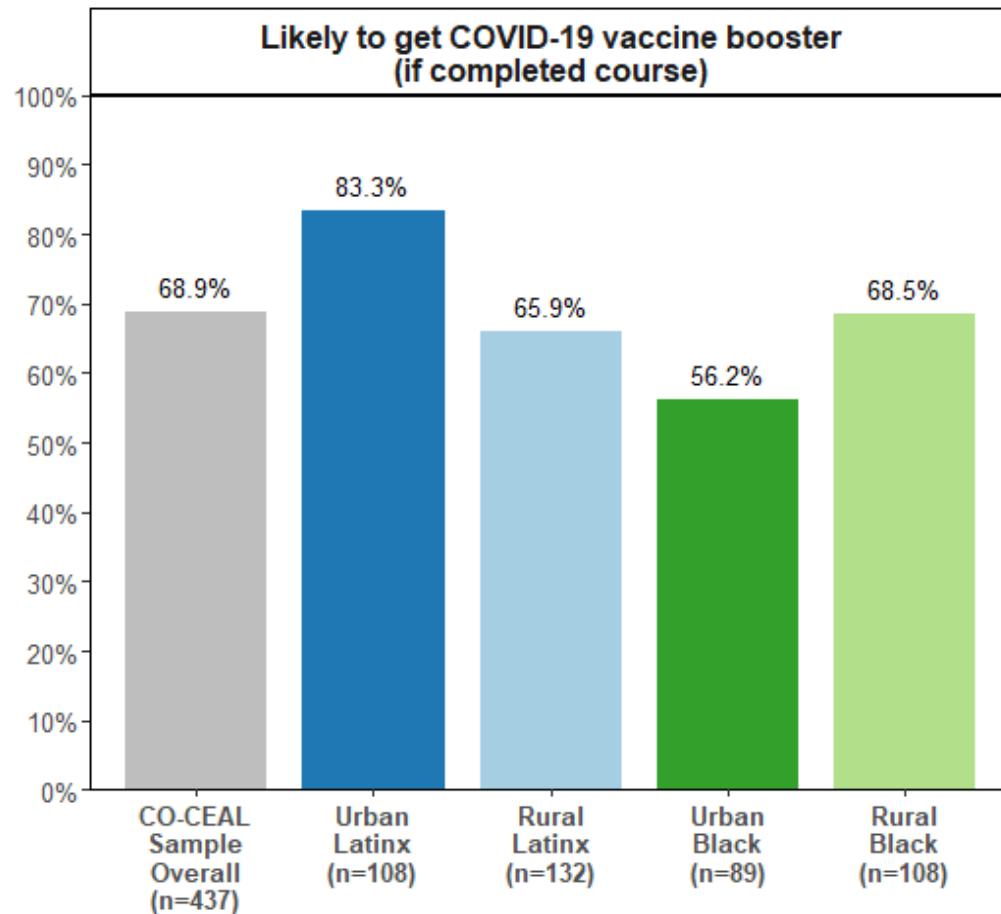
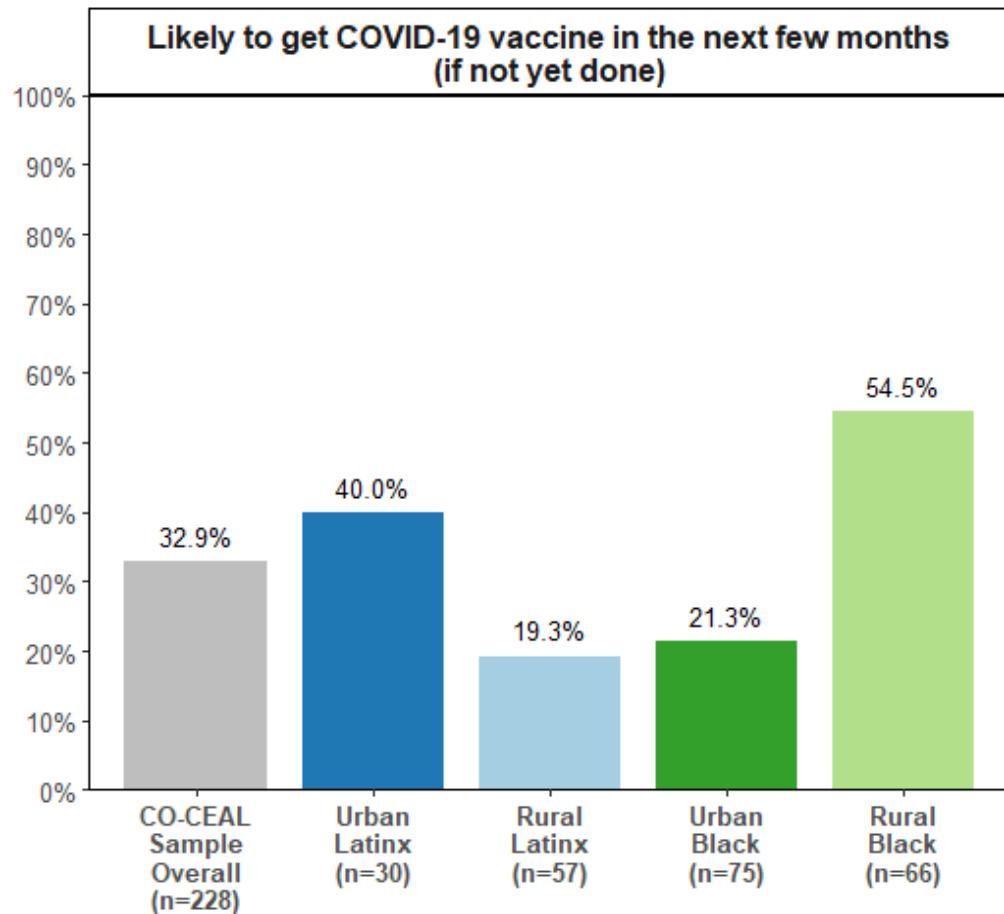
Collected Sept 2021 - Jan 2022

# Colorado vaccination data as of July 13, 2022



# COVID-19 vaccine/booster intention (adult)

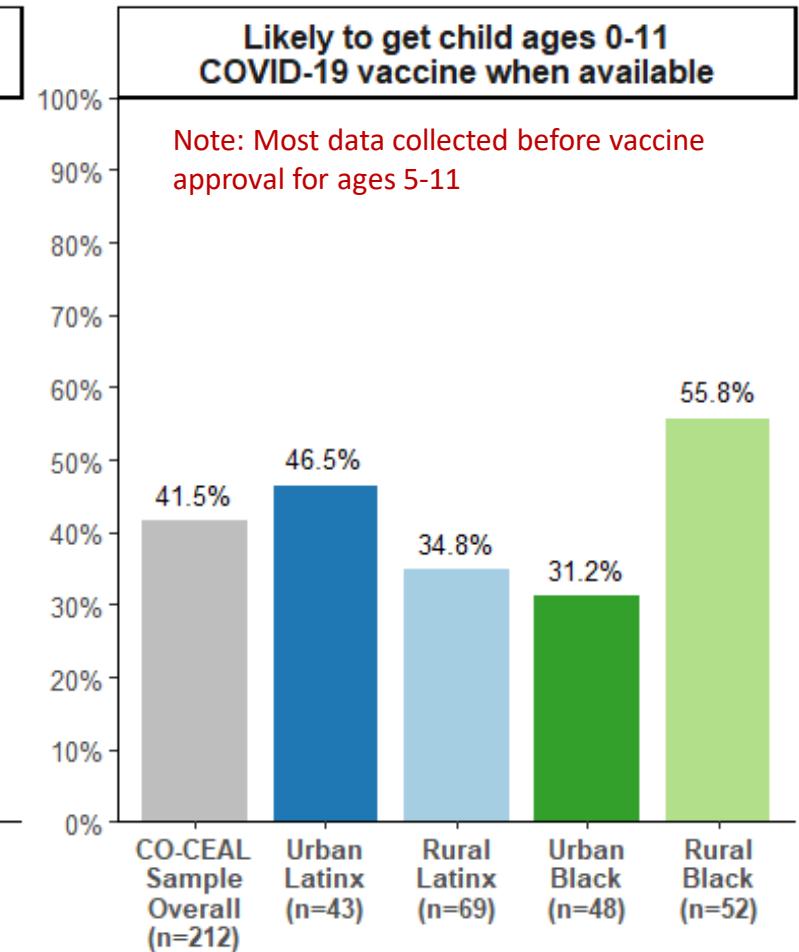
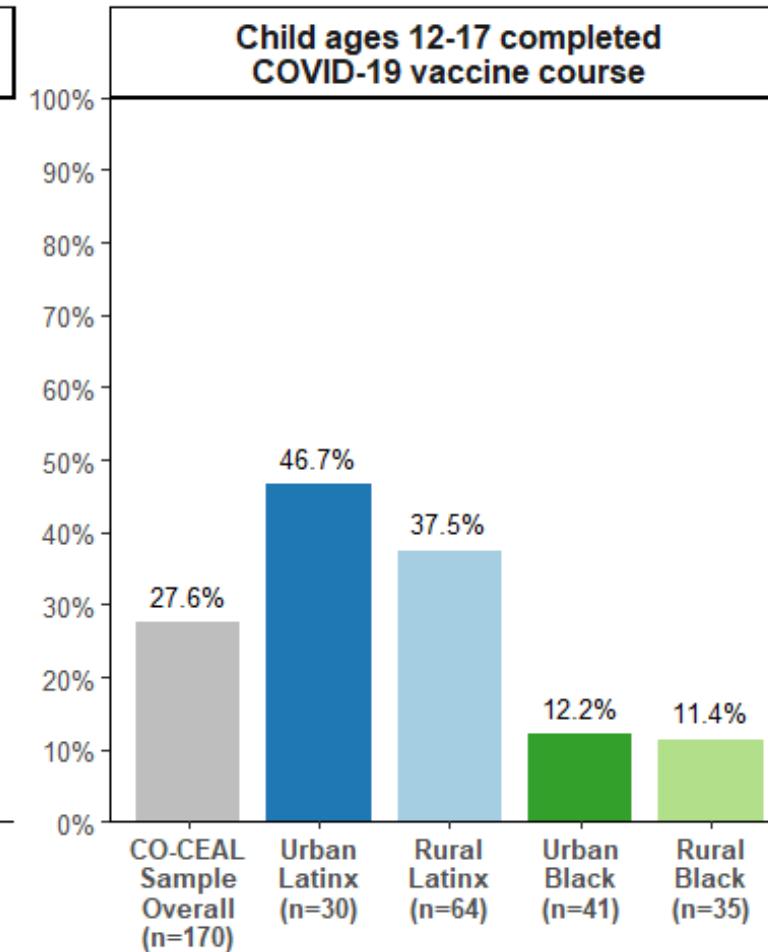
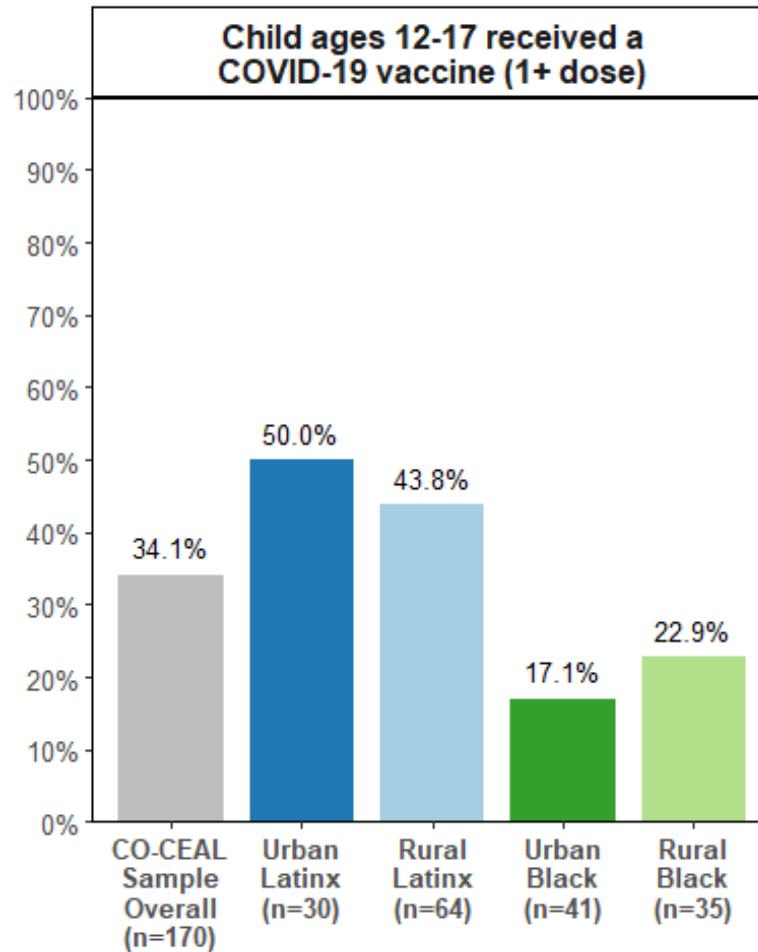
## CO-CEAL Data



Responded at least “5” on scale from 1 (“not at all likely”) to 7 (“very likely”)

# COVID-19 vaccination & intention (child)

## CO-CEAL Data



Responded at least “5” on scale from 1 (“not at all likely”) to 7 (“very likely”)

# Thank You

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