



# Ask Dr. Arwady

November 1, 2022

# Chicago MPV (Monkeypox) Case Summary

Fewer than 10 total deaths in all of U.S. (nearly 30,000 cases) and fewer than 40 deaths globally (nearly 77,000 cases).

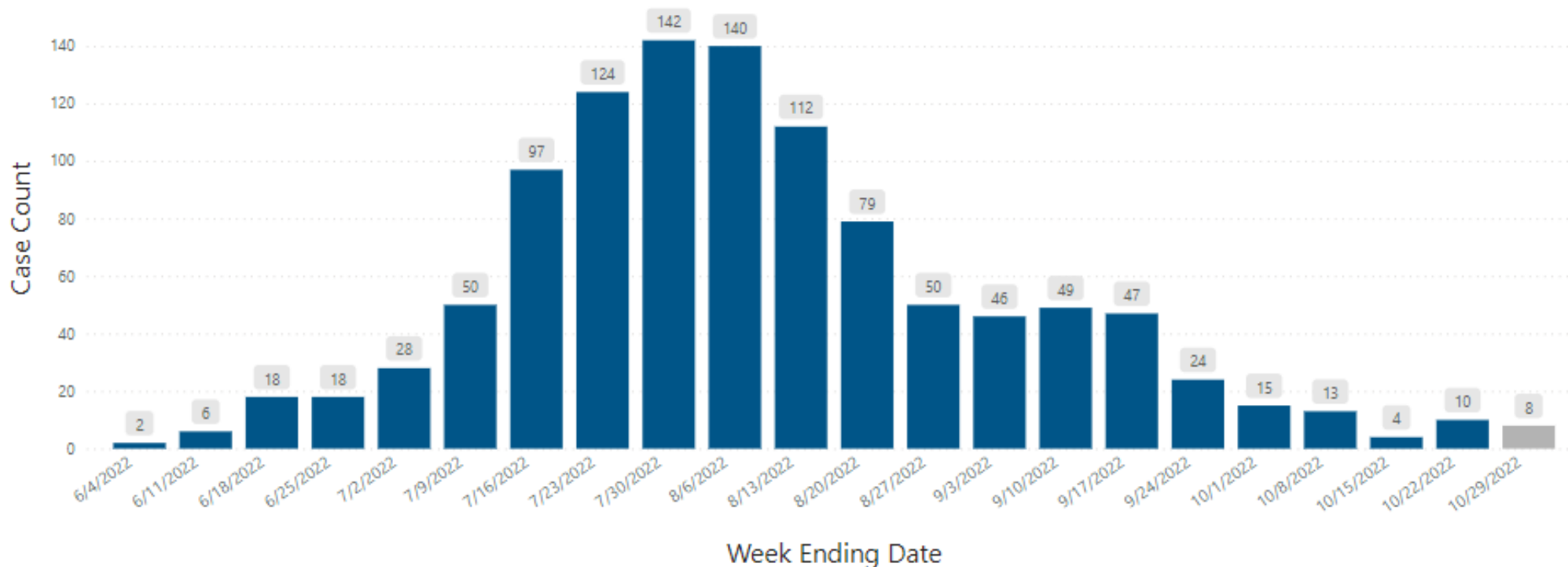
Data last updated 10/31/2022. Counts include cases with specimen collections through 10/26/2022 to account for reporting lags. Data are updated M-F at 2:00p.m., except for City holidays. All data are provisional and subject to change.

Cumulative Cases  
**1,082**

Cumulative Hospitalizations  
**70**

Cumulative Deaths  
**3**

## MPV (Monkeypox) Cases Diagnosed in Chicago Residents, by Week



\*Data represented in the gray-colored bar(s) are not yet complete.



# MPV VACCINE ELIGIBILITY

## ANYONE who:

- ★ Had skin-to-skin or intimate contact (e.g., household members with close physical contact or intimate partners) with someone diagnosed with MPV.
- ★ Exchanges goods or services for sex.
- ★ Lives with HIV, especially persons not in HIV care or not regularly taking their HIV medications.
- ★ Is eligible for or is currently taking PrEP (pre-exposure prophylaxis) to help prevent infection with HIV.

**OR:**

- ★ Is a sexually active bisexual, gay and other same gender-loving men, or sexually active transgender individuals.

**OR:**

- ★ Sexual partners of those included above or individuals who anticipate meeting criteria above in the future.



**CDPH**

Chicago Department  
of Public Health

FOR MORE INFO, AND HOW YOU CAN PROTECT YOURSELF  
AFTER VACCINATION, VISIT **CHICAGO.GOV/MPV**

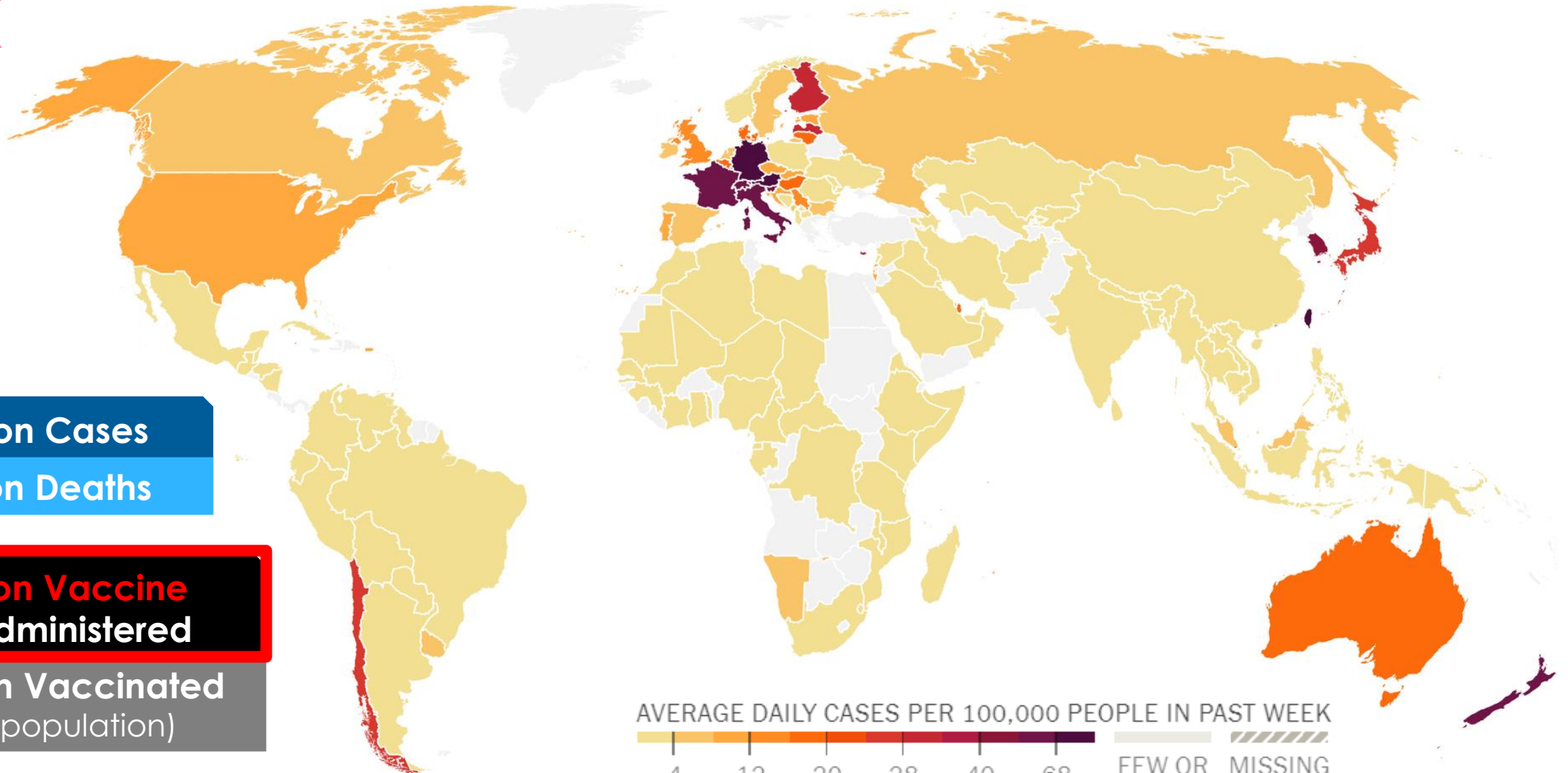


**DON'T LET**

**COVID HAUNT YOU.**

Get the new COVID Bivalent Booster

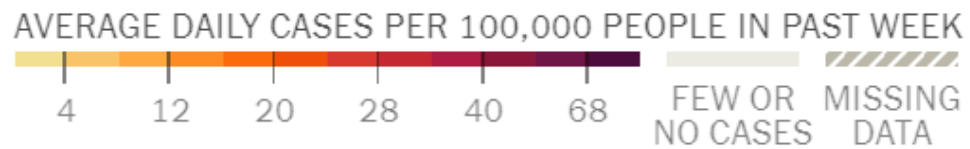
# Average daily COVID-19 cases per 100,000 population



**628 Million Cases**  
**6.5 Million Deaths**

**12.8 Billion Vaccine Doses Administered**

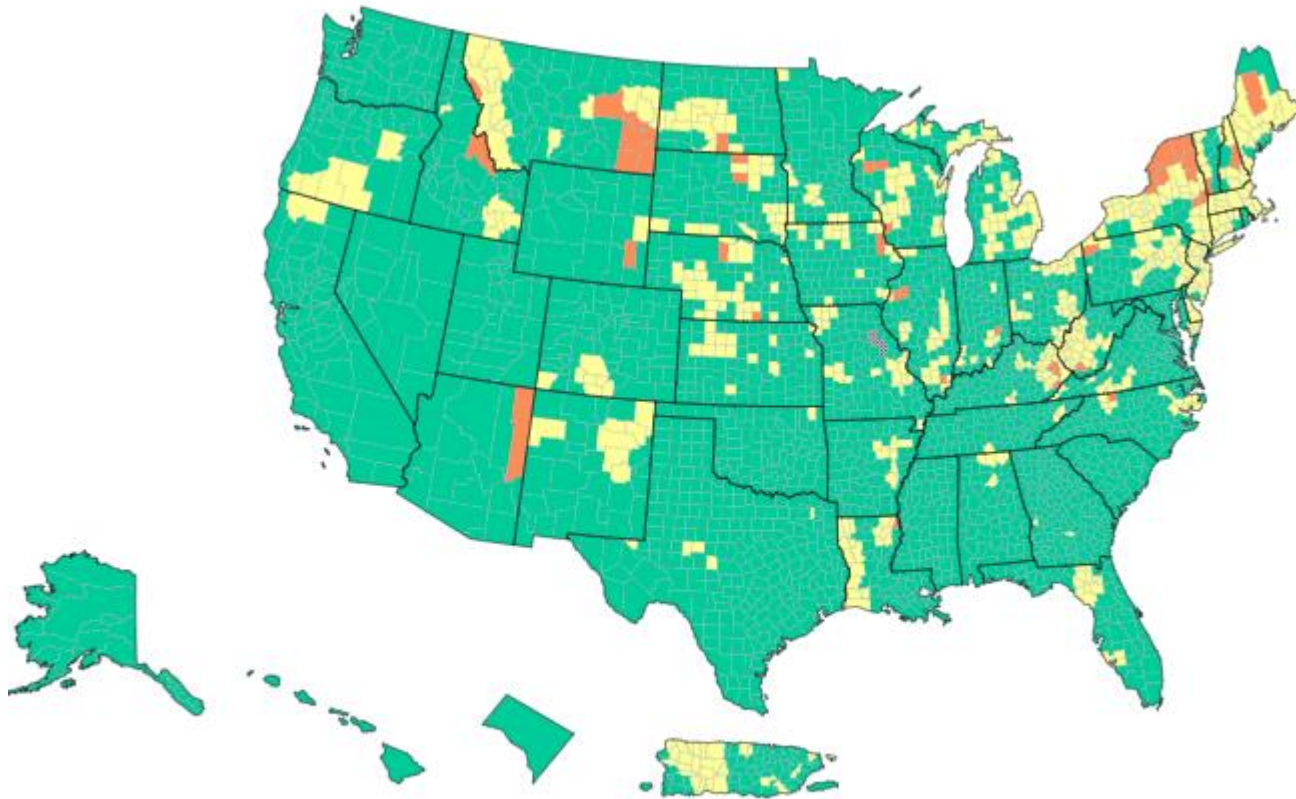
**5.4 Billion Vaccinated (70.5% of population)**



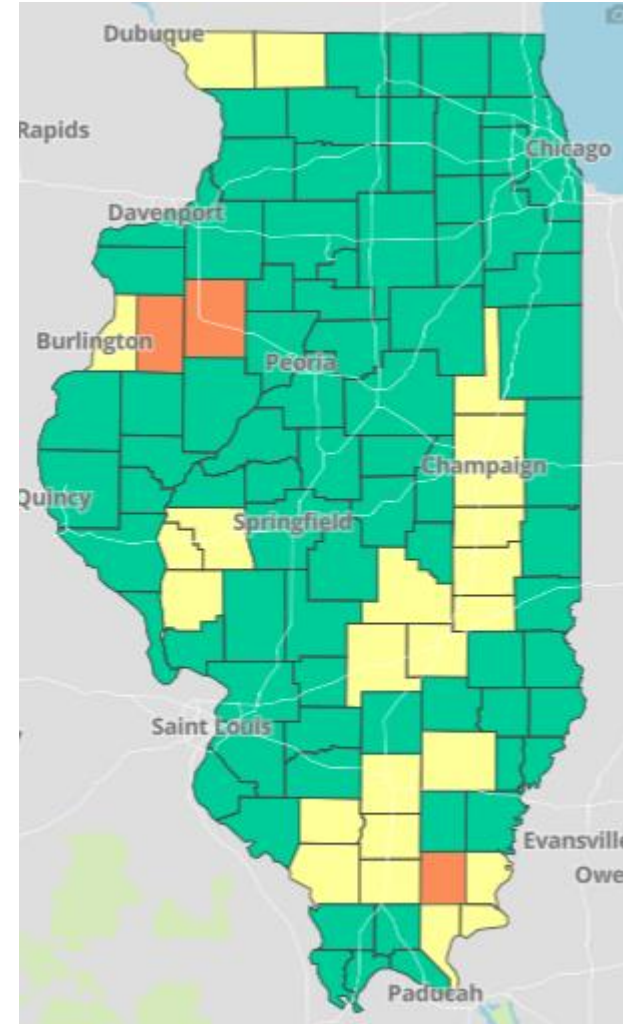
# LAST WEEK: 1% of U.S. Counties reported High COVID Community Level and 18% reported Medium Level.



Low Medium High



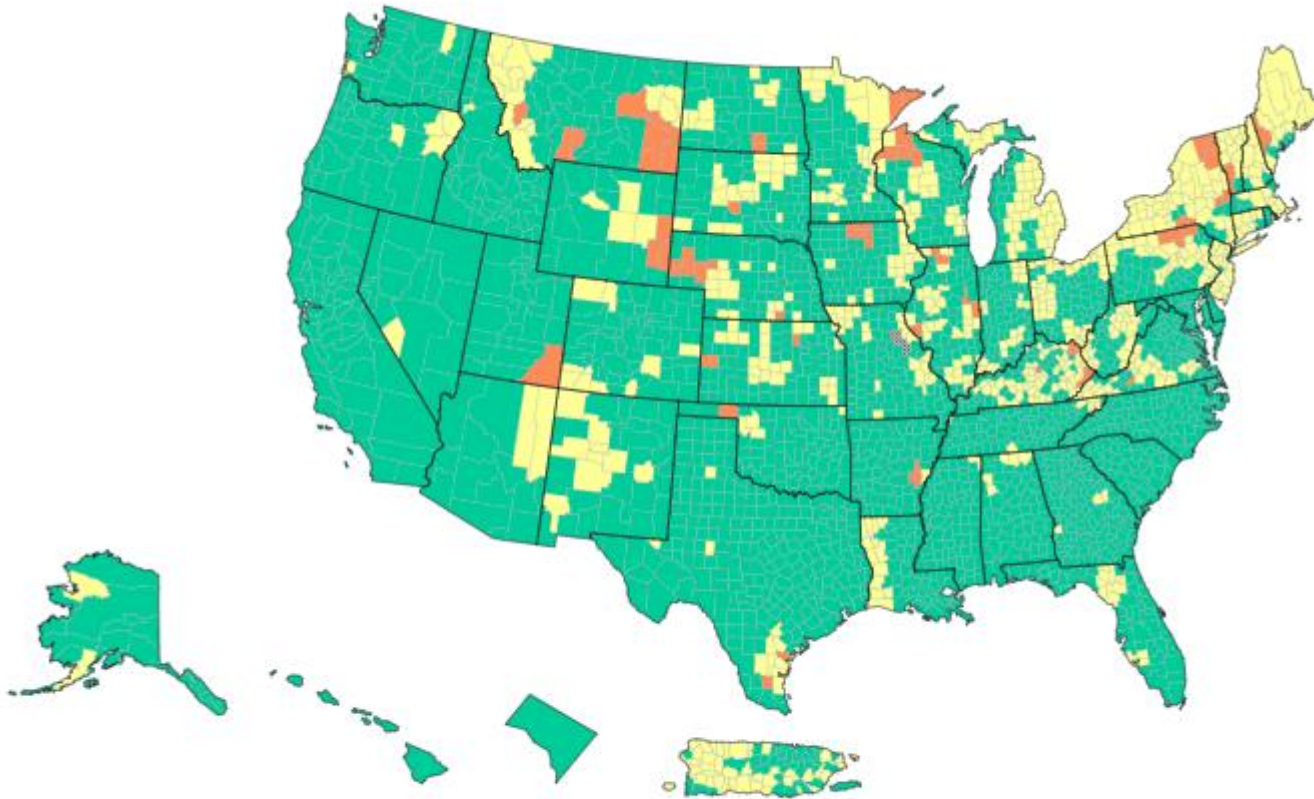
GU AS MP VI



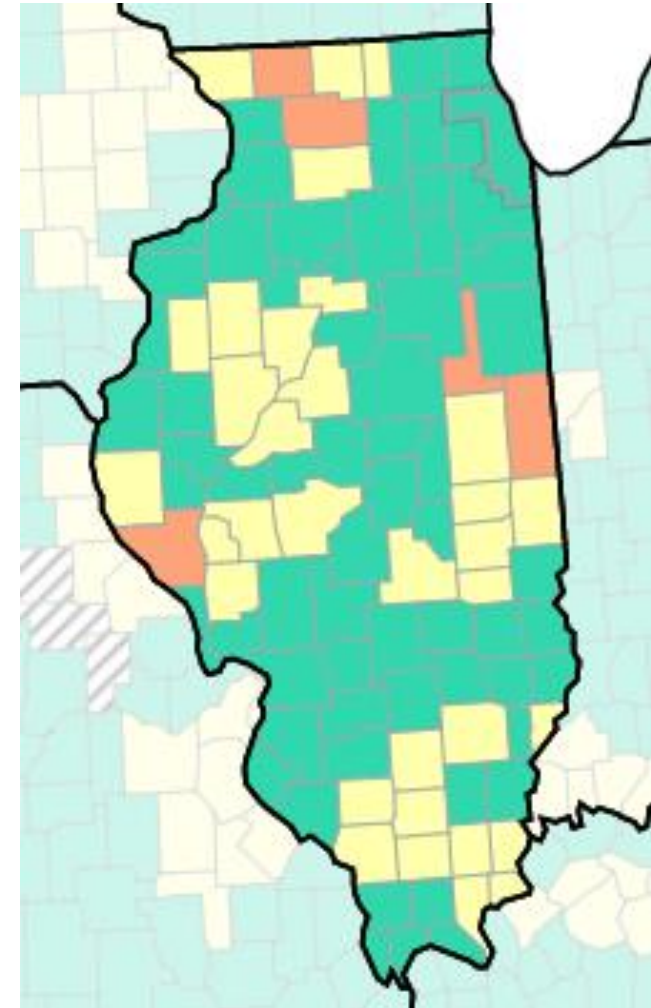
# THIS WEEK: 2% of U.S. Counties reported High COVID Community Level and 22% reported Medium Level.



Low Medium High



GU AS MP VI





# Additional COVID-19 Indicators for Chicago

Chicago COVID-19 Emergency Department encounters  
**LOW CONCERN**

Chicago Wastewater Sampling  
**LOW CONCERN**

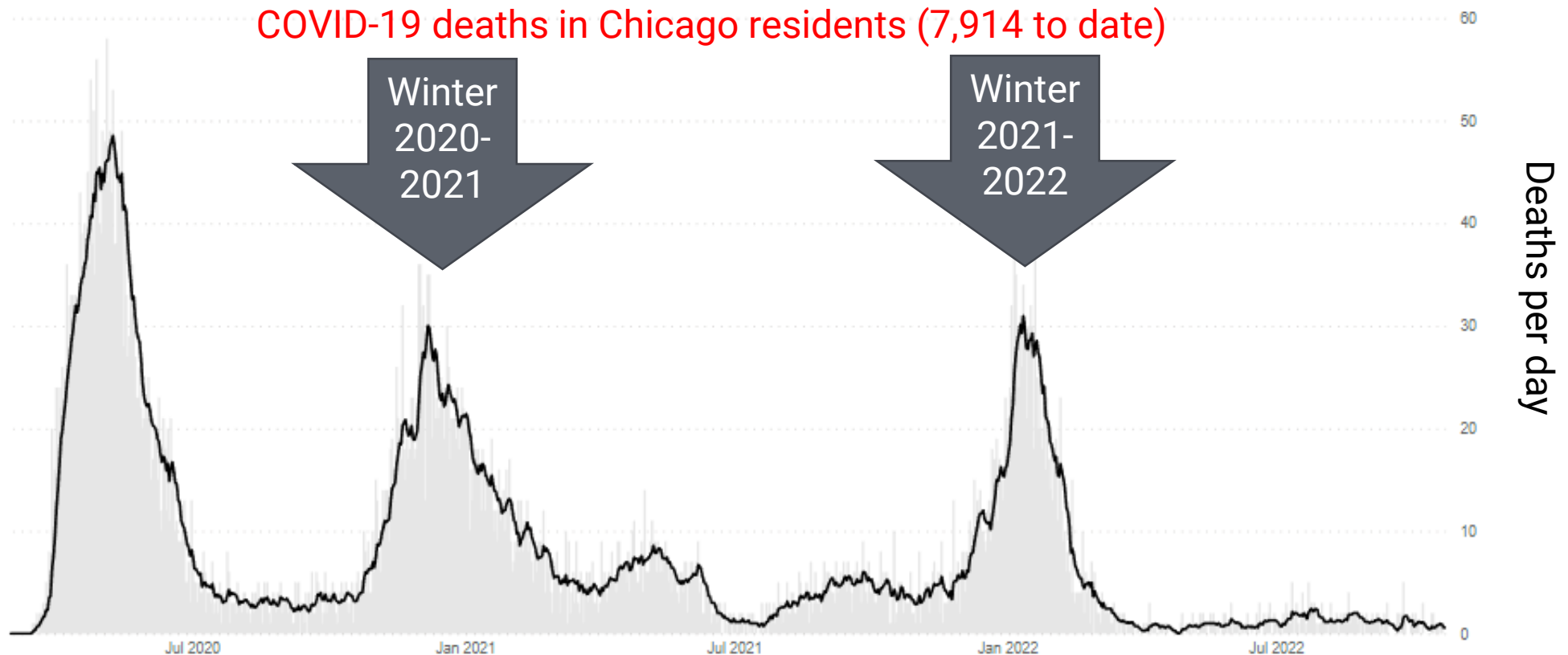
Chicago Variant Risk Assessment  
**LOW CONCERN**

Chicago's COVID-19 Risk Level is **LOW**



**THANKFULLY, COVID IS NOT TOP OF MIND...  
BUT IT IS ALSO **NOT** OVER**

COVID-19 deaths in Chicago residents (7,914 to date)





# 7,914 COVID-19 deaths (and counting) in Chicago residents

- Since the pandemic began, COVID has been the **2<sup>nd</sup> leading cause of death** (after heart disease) in Chicago
- Even now, **5 to 7 COVID-19 deaths each week** just in Chicago residents
- Even just in the past six months, U.S. has averaged **300 to 500 COVID deaths each day**
- At this rate, between 110,000 and 180,000 Americans will continue to die each year of COVID-19

# 48,006 COVID-19 hospitalizations (and counting) in Chicago

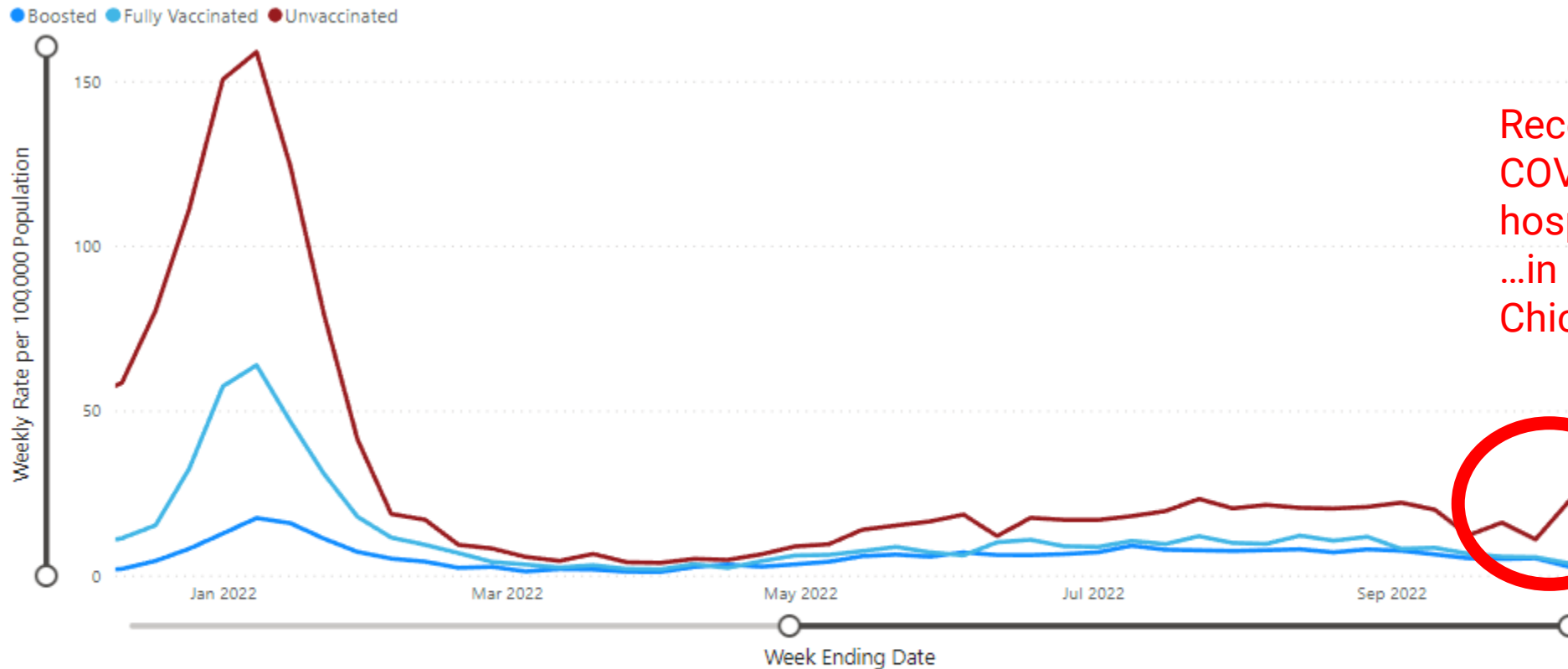


- Even now, **15 to 25 people newly hospitalized with COVID-19 EVERY DAY** in Chicago
- Even now, 1 of every 25 to 30 Chicago hospital beds is occupied with a COVID-19 patient

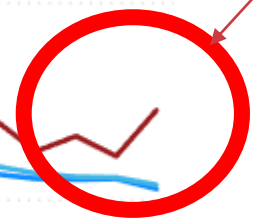
Chicago COVID-19 hospitalizations (47,841 to date)



# Since the Omicron variant became dominant in Chicago: Hospitalization rates have been **2.7X higher** in **unvaccinated** compared to **boosted**



Recent increase in COVID hospitalizations ...in unvaccinated Chicagoans



\*Rates are adjusted for age

Since the Omicron variant became dominant in Chicago, unvaccinated people had a **2.2X** higher risk of being hospitalized with COVID-19 compared to fully vaccinated people

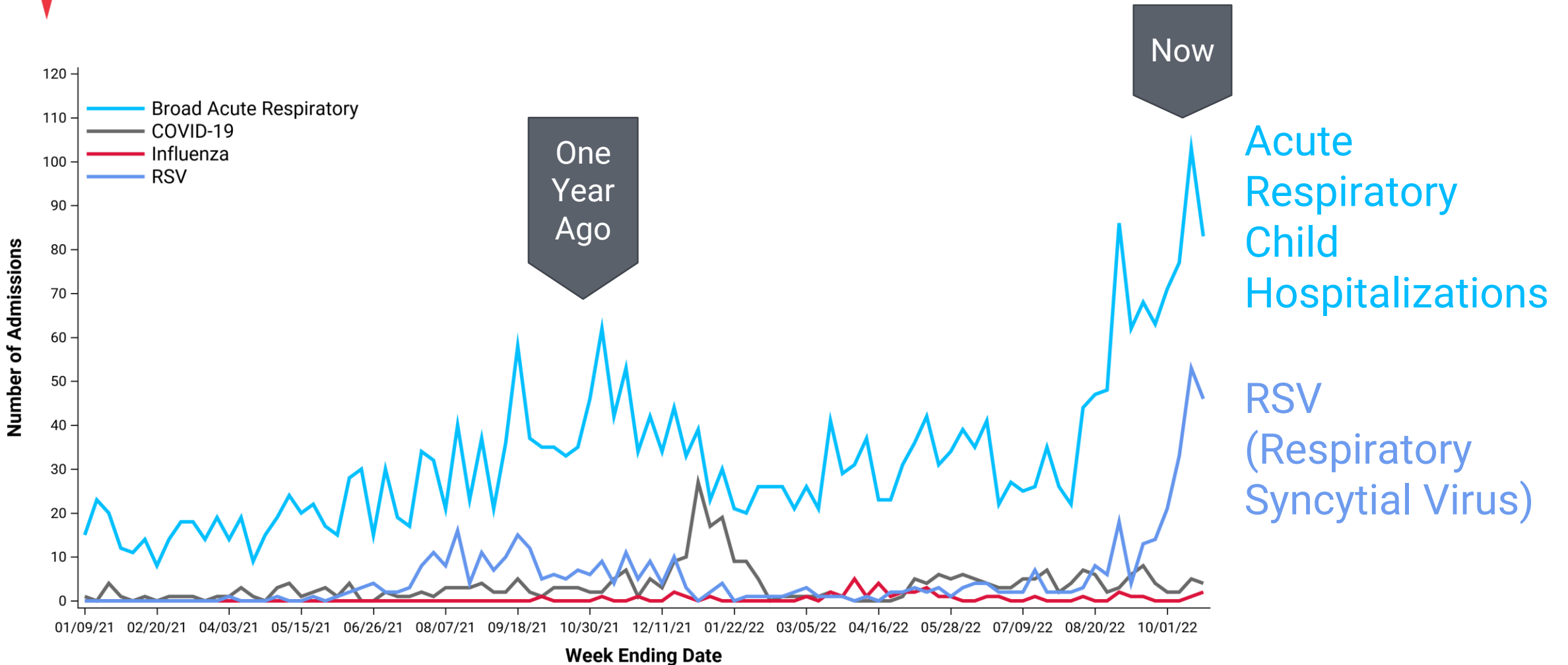
Since the Omicron variant became dominant in Chicago, unvaccinated people had a **2.7X** higher risk of being hospitalized with COVID-19 compared to people who were boosted

**Sources:**

Includes cases among Chicago residents reported into the Illinois Electronic Disease Surveillance System (I-NEDSS) with date of specimen collection 12/12/2021-10/8/2022, pulled 10/26/2022. Vaccination status obtained from the Illinois Comprehensive Automated Immunization Registry (I-CARE) registry.

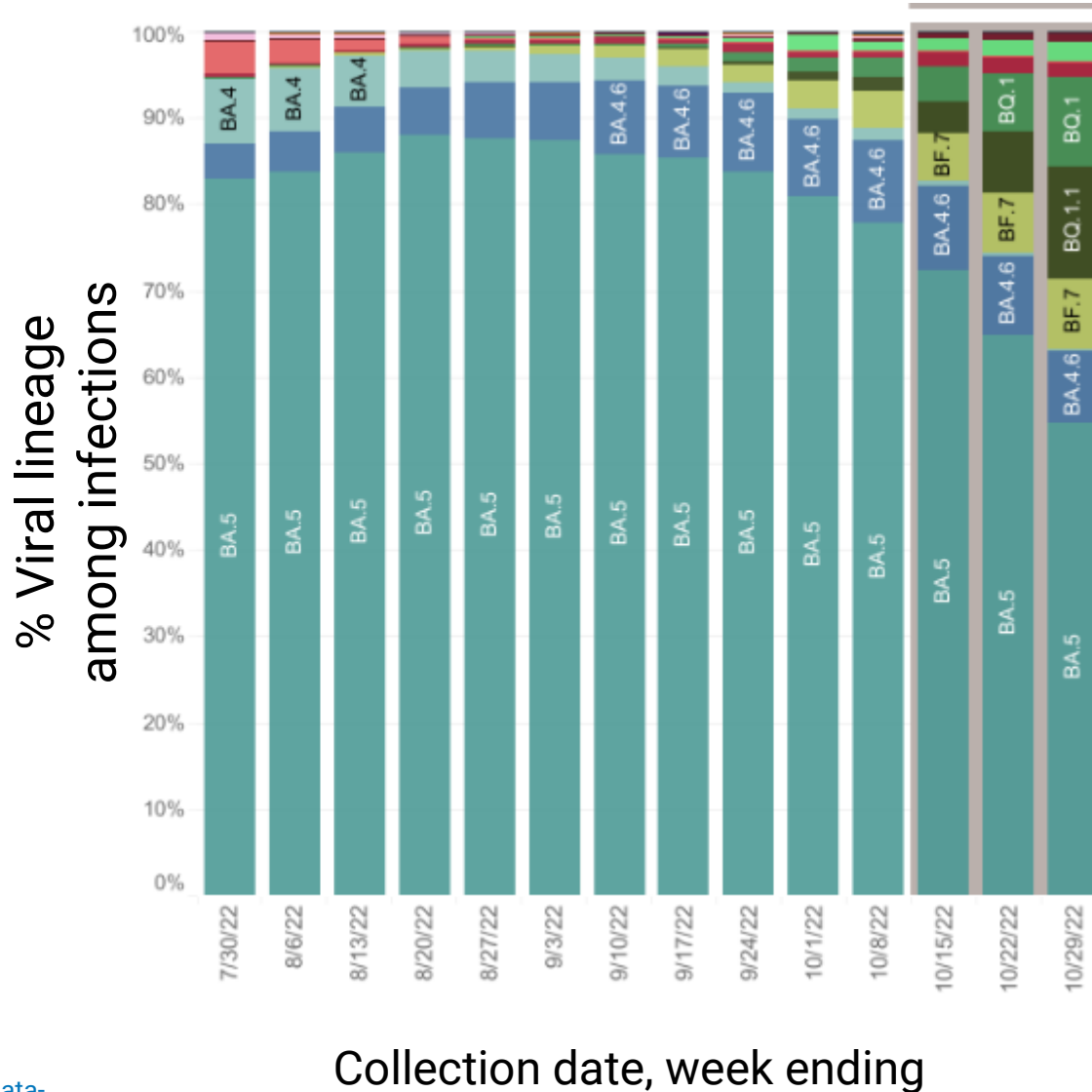
# AND: Surge in **Child** Respiratory Illnesses and Hospitalizations

Pediatric Admissions at **Chicago Hospitals** due to Acute Respiratory Illnesses: January 2021-present



# Variant Surveillance, Midwest Region

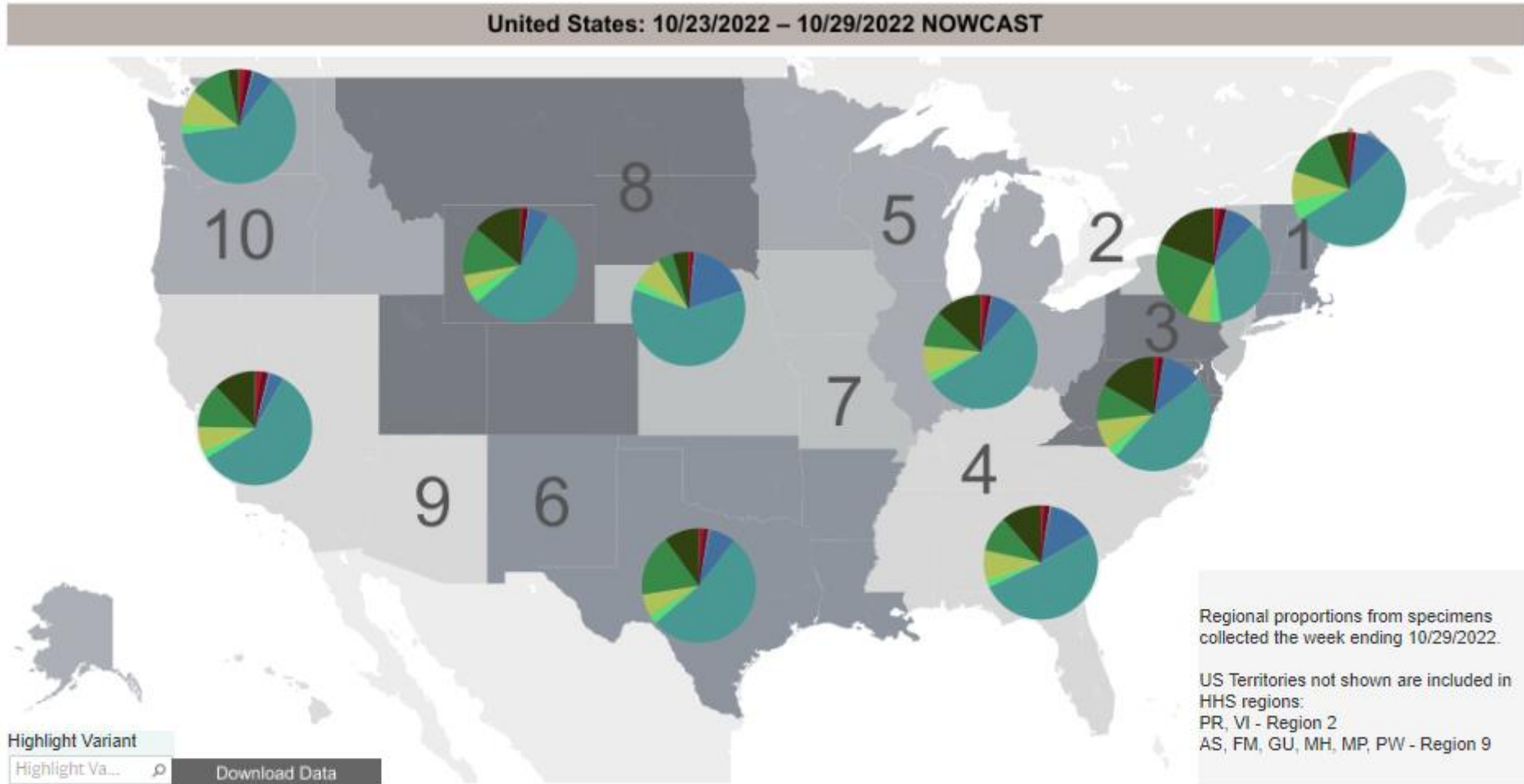
## Continued evolution of more infectious Omicron subvariants



**It's STILL ALL OMICRON**  
 However, watching subvariants closely.

- BA.2.75.2 (1.1%)**
- BA.5.2.6 (2.2%)**
- BA.2.75 (2.0%)**
- BA.4 (0.3%)**
- BQ.1 (10.3%)**
- BF.7 (8.0%)**
- BQ.1.1 (13.1%)**
- BA.4.6 (8.3%)**
- BA.5 (54.7%)**  
 (1 week prior: 66.3%)

# Variant proportions in the U.S.



Lineages called using pangolin v4.1.3, pangolin-data v1.15.1 and usher v0.5.4.

Updated October 28, 2022





# THINK YOU'RE UP TO DATE WITH YOUR COVID VACCINES?

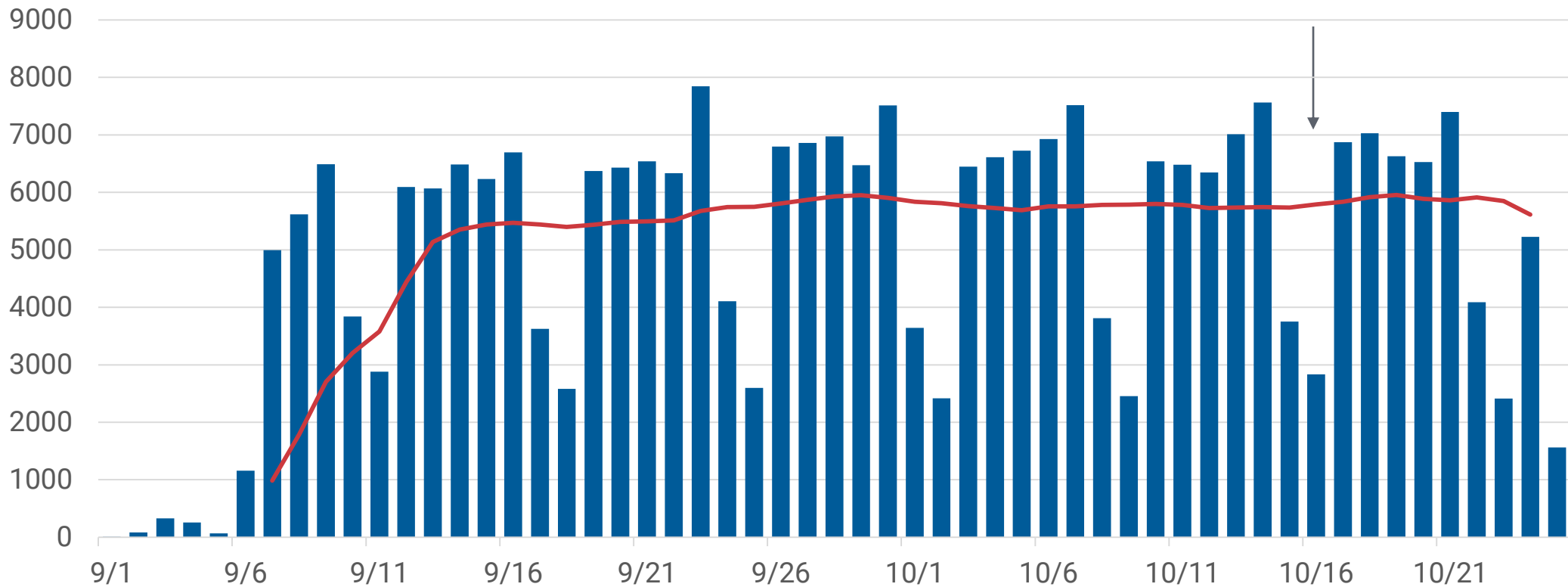
IF YOU HAVEN'T  
BEEN VACCINATED  
SINCE LABOR DAY...



Previously vaccinated Chicagoans age 5+ are eligible for the new bivalent booster and the best protection against Omicron.

# Over **273,000 doses** of the Fall 2022 bivalent boosters have been administered to Chicagoans

*Administration of updated, Fall 2022 booster doses remains steady. 7DRA: ~5800*





# Demographics of Chicagoans who received an updated COVID-19 vaccine

Age Group	Count	(%)
5-11 yrs	1994	0.7%
12-17 yrs	8075	3%
18-29 yrs	30039	11%
30-39 yrs	52884	19%
40-49 yrs	39509	14%
50-59 yrs	38445	14%
60-69 yrs	47496	17%
70-79 yrs	37293	14%
80+ yrs	17443	6%

Race-ethnicity	Count	(%)
Latinx	38907	14%
Black, non-Latinx	46687	17%
White, non-Latinx	153102	57%
Asian, non-Latinx	22747	8%
AIAN, non-Latinx	1453	1%
NHPI, non-Latinx	587	0%
Other, non-Latinx	4235	2%
Unknown	5460	2%

Sex	Count	(%)
Female	149203	55%
Male	122128	45%
Unknown	1847	1%

# Overall, Estimated **14.6%** of eligible Chicagoans have received an updated, Fall 2022 COVID booster



	No. of Chicagoans eligible for updated vaccine (est.)*	No. of eligible who received updated vaccine	Percent eligible who have received updated vaccine
<b>Race/Ethnicity</b>			
Latinx	515,466	38,913	7.5%
Black, non-Latinx	430,634	46,690	10.8%
White, non-Latinx	642,750	153,111	23.8%
Asian, non-Latinx	142,684	22,754	15.9%
<b>Age Group</b>			
05-11 yrs	95,428	1,994	2.1%
12-17 yrs	126,428	8,075	6.4%
18-29 yrs	355,371	30,039	8.5%
30-39 yrs	353,730	52,884	15.0%
40-49 yrs	275,982	39,509	14.3%
50-59 yrs	254,005	38,445	15.1%
60-69 yrs	214,507	47,496	22.1%
70-79 yrs	125,546	37,293	29.7%
80+ yrs	65,400	17,443	26.7%

Data reported to I-CARE through 10/26/2022. Number eligible includes Chicagoans aged 12 years or older who completed a primary series or received a monovalent booster dose at least 2 months prior to October 22, 2022.



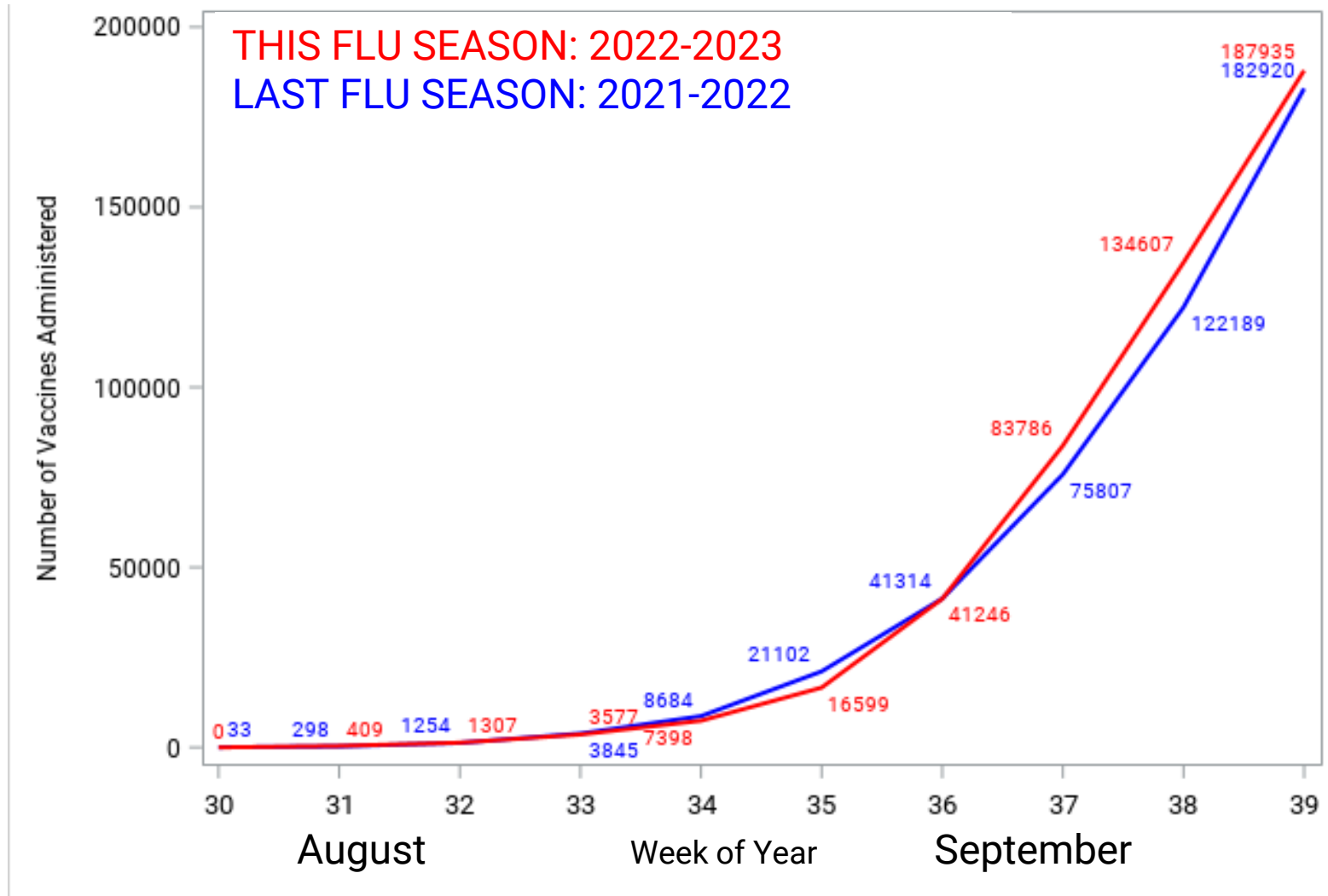
THE COMBO YOU  
**DON'T WANT**

GET BOTH  
VACCINES.

[CHICAGO.GOV/FLU](https://chicago.gov/flu)



# Overall, influenza vaccine uptake in Chicago this fall is **SIMILAR** to last year

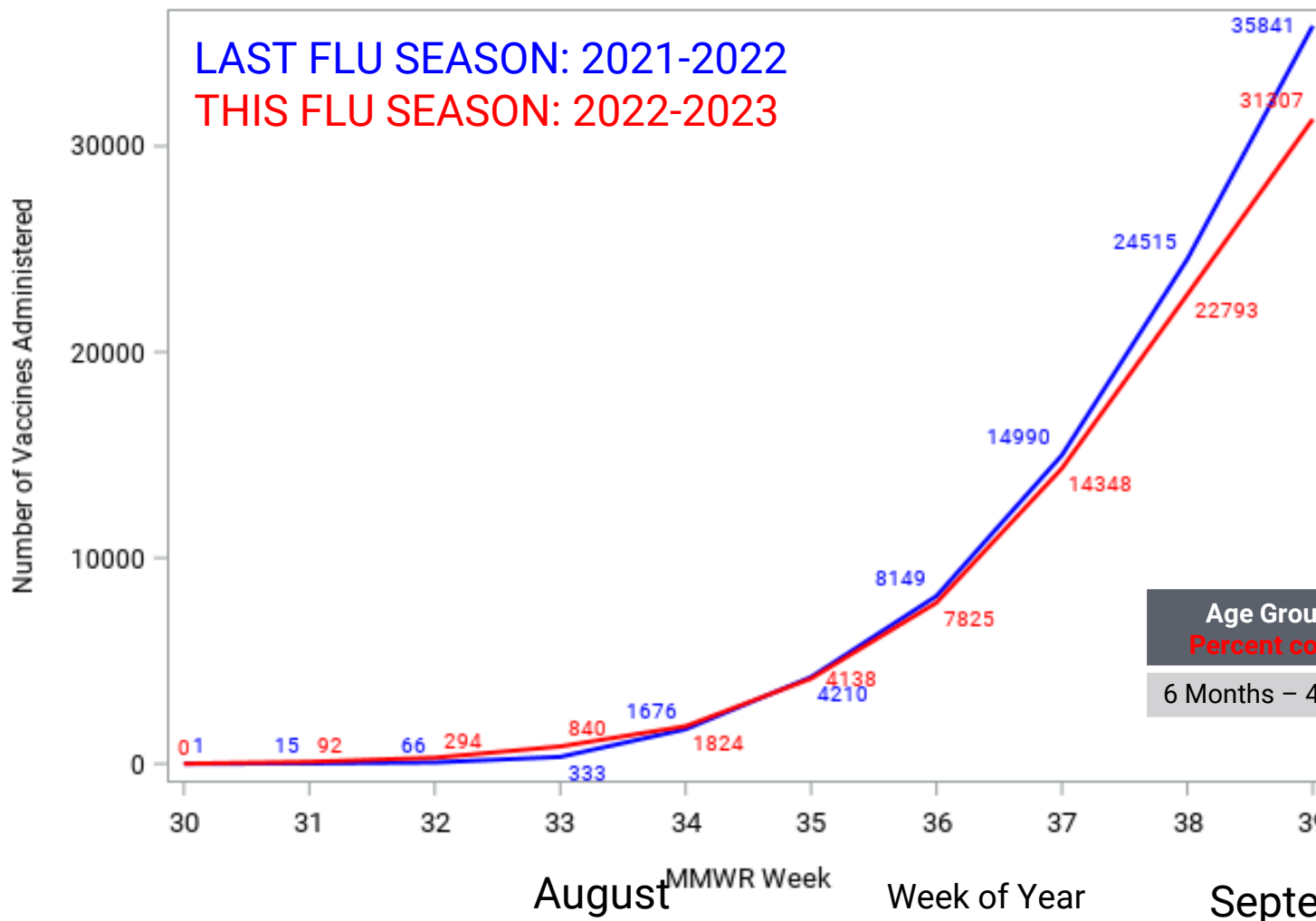


- About 5,000 more doses of flu vaccine given so far this season in Chicago compared to last season
- 2,236 Chicago providers have given flu vaccines in the last 2.5 months
  - This is about 180 fewer providers than at the same time last year

# However, influenza vaccine uptake in Chicago children under 18 has been notably **LOWER** than at this point last year



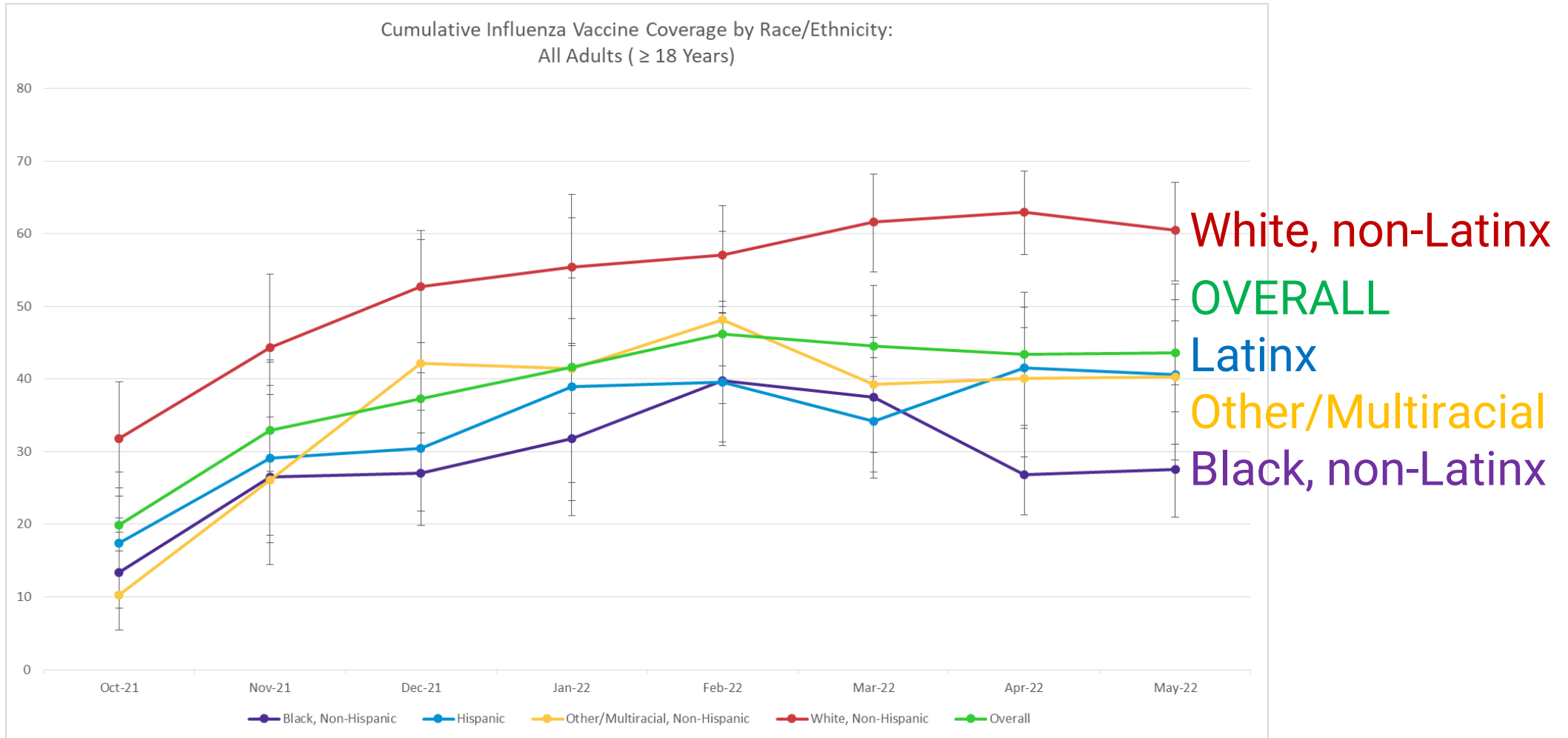
Cumulative Influenza Doses Administered to Chicagoans Under 18 Years by Week, 2022-23 and 2021-22



Age Group and Percent coverage	17 – 18 Season	18 – 19 Season	19 – 20 Season	20 – 21 Season	21 – 22 Season
6 Months – 4 Years	82.5	76.6	80.3	73.8	71.6

\*Cumulative doses by week. MMWR Week 30 is the last week of July/ first week of August \*MMWR Weeks 31-35 cover the month of August/ first week of September  
\*MMWR Weeks 36-39 cover the month of September

# Racial/Ethnic Disparities in Chicago Adult Influenza Vaccine Uptake: 2021-22 C Vaccine Coverage Estimates





**REGISTRATION ENCOURAGED ★ WALK-INS WELCOME**  
All clinics are Saturdays from 9am-2pm



**THIS SATURDAY**

Extended Saturday flu/COVID vaccine clinics with City Colleges through December

<b>LOCATION:</b>	<b>DATE:</b>	<b>REGISTER AT:</b>
Malcolm X	November 5	<a href="https://rebrand.ly/MalcolmXCollege">rebrand.ly/MalcolmXCollege</a>
Truman	November 12	<a href="https://rebrand.ly/TrumanCollege">rebrand.ly/TrumanCollege</a>
Kennedy-King	November 19	<a href="https://rebrand.ly/KennedyKing">rebrand.ly/KennedyKing</a>
Wright	December 3	<a href="https://rebrand.ly/WrightCollege">rebrand.ly/WrightCollege</a>
Olive-Harvey	December 10	<a href="https://rebrand.ly/Olive-Harvey">rebrand.ly/Olive-Harvey</a>
Daley	December 17	<a href="https://rebrand.ly/DaleyCollege">rebrand.ly/DaleyCollege</a>

**The new COVID-19 bivalent booster is available!**

**Types of vaccines:** Flu, COVID-19 primary series from Pfizer and Moderna starting 6 months+, and Pfizer bivalent boosters from 5 years+



## A Look at the Science



bioRxiv posts many COVID-19-related papers. A reminder: they have not been formally peer-reviewed and should not guide health-related behavior or be reported in the press as conclusive.

# Three things we hope the updated fall 2022 COVID-19 boosters provide



1. **GREATER protection** against infection and transmission by boosting our **first** line of defense—neutralizing antibodies

**Previous Knowledge:** initial trials in mice showed success; early human trial preprint showed bivalent booster should enhance protection against Omicron specifically.

Preprint September 21, 2022.

Exposure to BA.4/BA.5 Spike glycoprotein drives pan-Omicron neutralization in vaccine-experienced humans and mice

Alexander Muik, Bonny Gaby Lui, Maren Bacher, Ann-Kathrin Wallisch, Aras Toker, Carla Iris Cadima Couto,

2. **LONGER protection** against infection and severe disease (extend by months)

**This can only be collected in real-time** so we will know the answer in a few months; given prior experience and Beta vaccine clinical trials, we expect it will be true.

3. **BROADER protection**—the ability to create antibodies that “see” more virus parts and attach more strongly to the antibodies we have now

**Previous Knowledge:** Do we make new B-cells, which are our bodies’ antibody factories in response to an updated vaccine? (Do we update our factory line when we see another variant?). **YES** Preprint September 22, 2022.

SARS-CoV-2 Omicron boosting induces de novo B cell response in humans

Find this author on Google Scholar

Find this author on PubMed

Wafaa B. Alsoussi, Sameer K. Malladi, Julian Q. Zhou, Zhuoming Liu, Baoling Ying, Wooseob Kim, Aaron J. Schmitz,

Preprint October 24, 2022. **Antibody responses to Omicron BA.4/BA.5 bivalent mRNA vaccine booster shot**

Qian Wang,  Anthony Bowen, Riccardo Valdez, Carmen Gherasim,  Aubree Gordon, Lihong Liu, David D. Ho

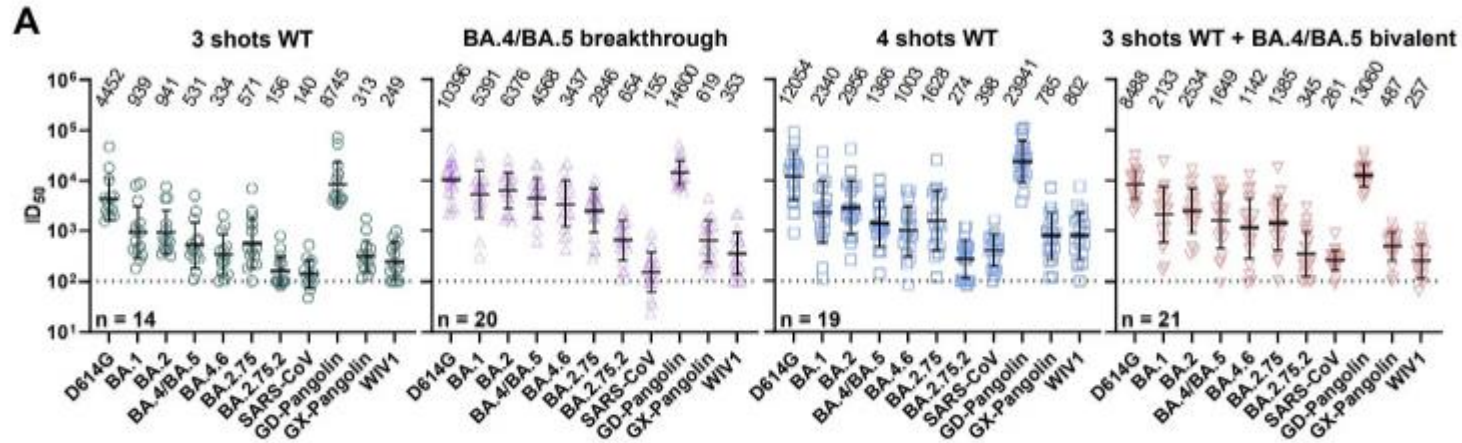
Preprint October 25, 2022.

**Immunogenicity of the BA.5 Bivalent mRNA Vaccine Boosters**

Ai-ris Y. Collier, Jessica Miller, Nicole P. Hachmann, Katherine McMahan, Jinyan Liu, Esther Apraku Bondzie,

### Wang paper

- Collected sera (blood) from:
  - Individuals after three or four doses of the original monovalent mRNA vaccines
  - Individuals receiving the new bivalent vaccines as a fourth dose
  - Individuals with BA.4/BA.5 breakthrough infection following mRNA vaccination.
- Sera tested for **neutralization** (in a petri dish—how many neutralizing antibodies made?) against
  - Ancestral SARS-CoV-2 strain
  - Several Omicron sub-lineages
  - Several related viruses
- At ~3-5 weeks post booster shot,
  - Individuals who received a fourth vaccine dose with a bivalent mRNA vaccine targeting BA.4/BA.5 had **similar** neutralizing antibody titers as those receiving a fourth monovalent mRNA vaccine against all SARS-CoV-2 variants tested, including BA.4/BA.5.



Neutralization profiles of serum samples against SARS-CoV-2 variants and other sarbecoviruses. Source: [Wang et al., Preprint.](#)

**Conclusion:** When given as a fourth dose, a bivalent mRNA vaccine targeting Omicron BA.4/BA.5 and an ancestral SARS-CoV-2 strain did not induce superior neutralizing antibody responses in humans, at the time period tested, compared to the original monovalent vaccine formulation.

In summary

1. Neutralizing antibodies increased after the fall 2022 booster. Not surprising, but good to see.
2. Neutralizing antibodies were not higher after the fall 2022 booster compared to the original formula booster.



# Does this mean the fall booster isn't working?

**ABSOLUTELY NOT!**

An increase in neutralizing antibodies helps prevent infection and transmission in the short term.

**The old vaccine formula did this, the updated vaccine formula does this.**

It's not a surprise, it's good news, and it will help us get through the winter.

But also, the study timeframe matters.

These studies checked people's blood 3-5 weeks after getting the fall booster and focus on the initial line of defense (neutralizing antibodies).

Prior research suggests that broader protection peaks about two months after getting an updated vaccine, after the body has had time to make new antibody factories.

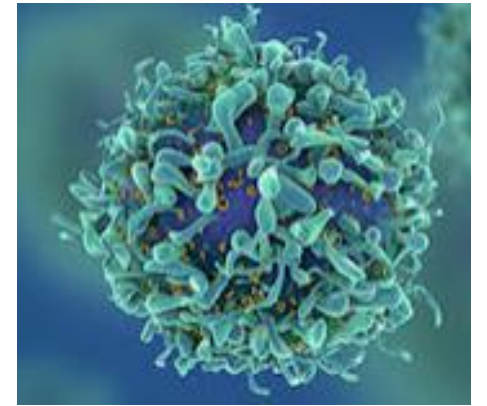
The *first time* we see a virus or get a new vaccine, our immune system learns how to protect us and develops **B cells**, which are antibody factories.

Each B cell makes a *single* antibody shape that can pump out huge quantities if needed.

When we *next* come into contact with the virus (or get another vaccine), our immune system revvs up **as fast as possible**.

So first, B cells start pumping out antibodies of shapes they've seen before ("B cell memory"). It's not until later that B cells update their factory line and start pumping out updated antibodies.

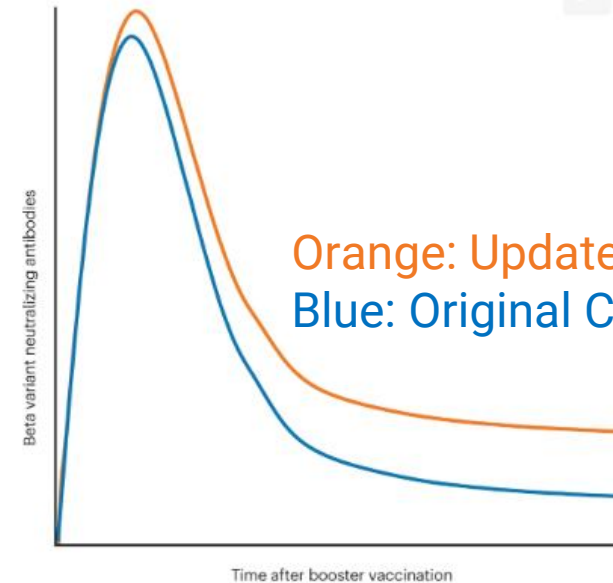
Prior research on COVID, shows this "factory update" happens about 2 months after exposure. So an updated booster's benefit may be marginal in the beginning, but better over time.



B cell:  
your antibody factory

### Neutralizing antibodies (Beta variant)

■ mRNA-1273.211 original + Beta ■ mRNA-1273 original only



Orange: Updated (Beta) booster trial  
Blue: Original COVID vaccine

Orange=updated Beta booster; blue=original formula. Source: [Nature Medicine](#)



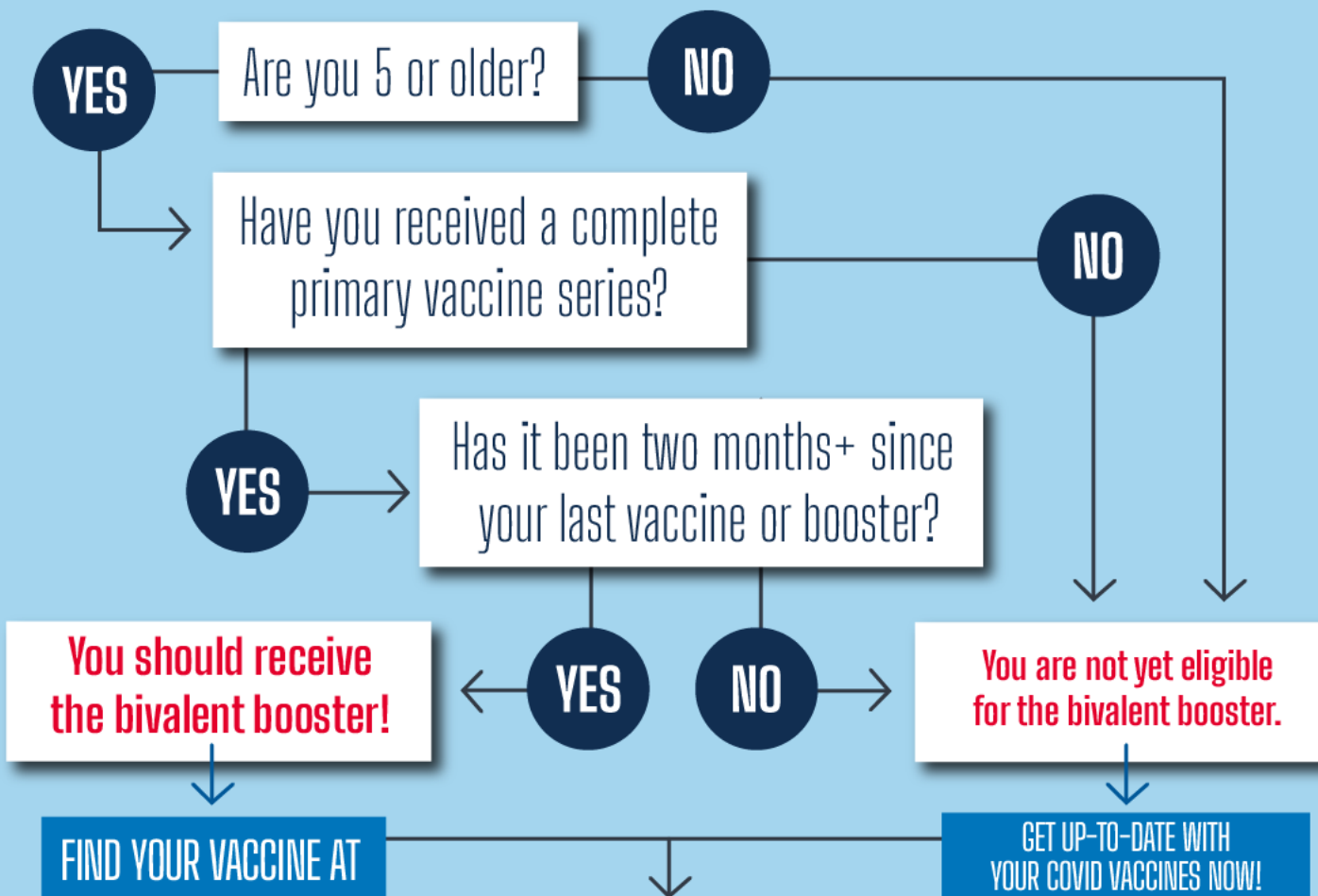
## Two new preprints provide excellent real-time information but they are not the whole story

- The two new preprints this week help us understand the **short-term impact** of fall boosters: **as good as prior formulations at boosting that short-term protection, but not necessarily better.**
  - These studies provide real-world data (as expected) showing that the fall 2022 COVID vaccine boosts neutralizing antibodies: this boost is critical to get us through the winter.
- We **already had real-world data showing that the fall boosters provide BROADER protection** than the older vaccine formulation and stimulate new B cell production.
  - **This should provide more protection over the long term;** prior studies showed that the longer-term effect of better protection kicked in about two months after updated booster.
- Watch this space for real-time studies about longer-term protection.
- **In the meantime, GET YOUR FALL 2022 BOOSTER!**





# DO I NEED TO GET A COVID BIVALENT BOOSTER THIS FALL?

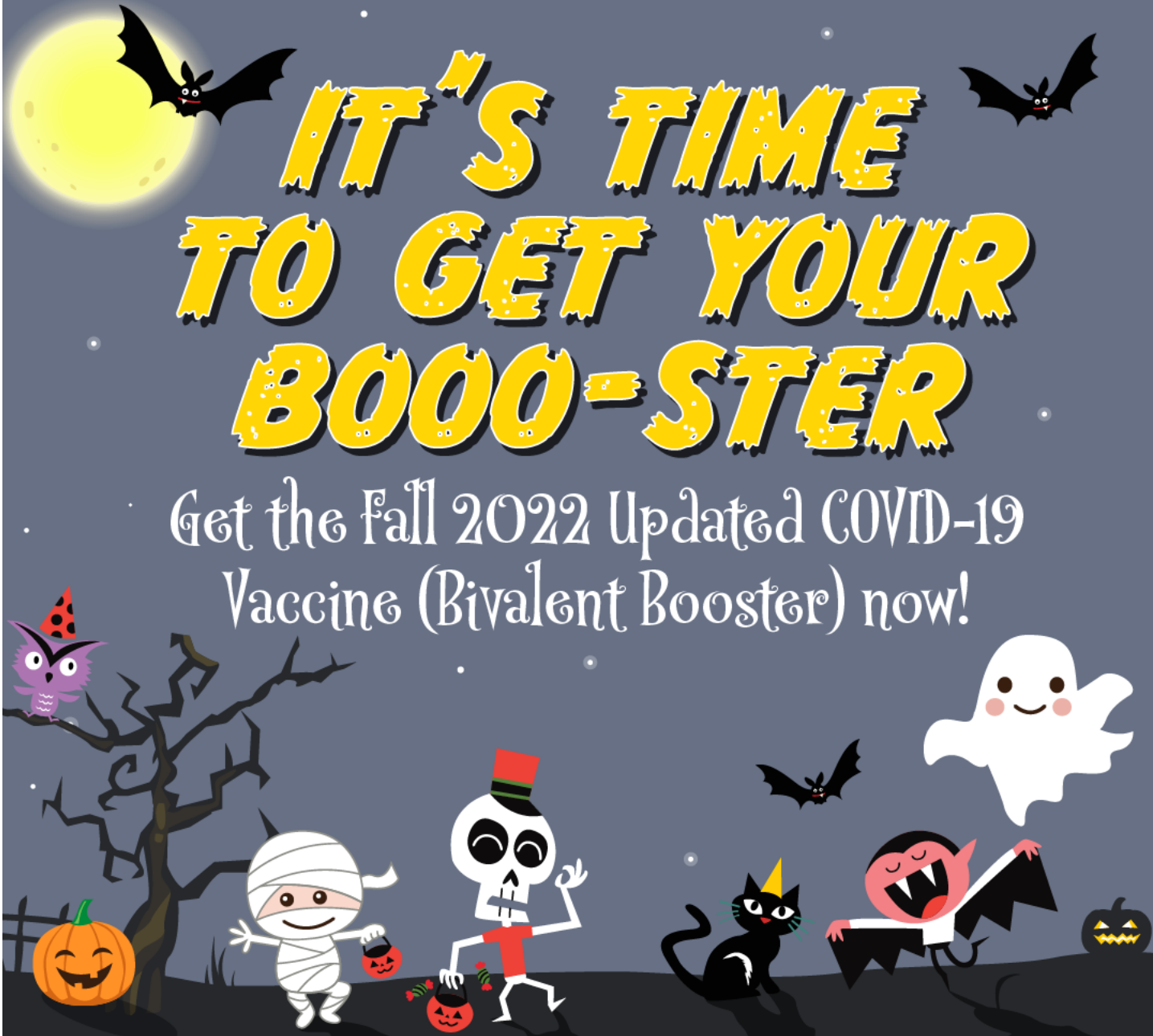


STILL FREE FOR ALL!

- Pharmacy
- Doctor's Office
- Pop-Up Clinic
- Standing Clinic
- AT HOME!!!

[chicago.gov/covidvax](https://chicago.gov/covidvax)





# IT'S TIME TO GET YOUR BOOO-STER

Get the Fall 2022 Updated COVID-19  
Vaccine (Bivalent Booster) now!

STILL FREE FOR ALL!

- Pharmacy
- Doctor's Office
- Pop-Up Clinic
- Standing Clinic
- AT HOME!!!

Gratuates **Over** Guns

"Healthy Chicago Equity Zone Washington Heights"

Presents

# FALL Festival

OCTOBER 15, 2022

CELEBRATE SAFELY WITH US

- FREE ENTRY
- FREE FOOD
- LIVE MUSIC
- FACE PAINTING
- PETTING ZOO
- PONY/ HAY RIDES
- HAMKIN PATCH

\$50 Visa Gift card w/ Covid Vaccine & Boosters

JULIAN HIGH SCHOOL (BACK FOOTBALL FIELD)

FUN FOR THE WHOLE FAMILY!

FREE FOOD • CANDY • RAFFLES • CHILDREN'S COSTUMES • HAUNTED TENT • VACCINATIONS • GOODIE BAGS • GAMES • PETTING ZOO • AND MUCH MORE!

PHALANX FAMILY SERVICES'

# FALL FEST & HALLOWEEN BOO-TACULAR!

A FREE COMMUNITY EVENT!

SAT OCT 22 12 - 4

Parking Lot at 119th & Halsted

\$50 VISA GIFT CARD WITH COVID VACCINE & BOOSTERS

CDPH, FAR SOUTH HCEZ, Jewel/Osco, ILLINOIS 54th DISTRICT STATE SENATOR EMIL JONES, ILLINOIS 27th DISTRICT STATE REPRESENTATIVE JUSTIN SLAUGHTER, CHICAGO 94th WARD ALDERMAN CAROLINE AUSTIN, 5th DISTRICT COOK COUNTY COMMISSIONER, CHEROKEE SIMMS

FOR MORE INFORMATION, CALL (773) 284-8943 OR VISIT PHALANXFAMILYSERVICES.COM

# COVID-19 VACCINATION COMMUNITY HOUSEHOLD Giveaway

OCTOBER 22ND, 2022

TIME: 11AM TO 2PM

NEW COVENANT HARVEST 1124 E 93RD ST CHICAGO, IL 60619

FREE TOILETRIES, CLEANING SUPPLIES, AND UTENSILS

HEALTHY CHICAGO EQUITY ZONE - BURNSIDE COMMUNITY LEAD

773-680-4542 773-948-0326 REGISTER ON EVENTBRITE

FOOD - MUSIC - DOOR PRIZES

PHALANX FAMILY SERVICES, CDPH, NEW COVENANT HARVEST, KINGDOM OF GOD MINISTRIES





Need a vaccine or a booster?  
Have questions?

visit

**CHI.GOV/COVIDVAX**

or call

**312-746-4835**



STILL FREE FOR ALL!

- Pharmacy
- Doctor's Office
- Pop-Up Clinic
- Standing Clinic
- AT HOME!!!