



Ask Dr. Arwady

11/30/2021



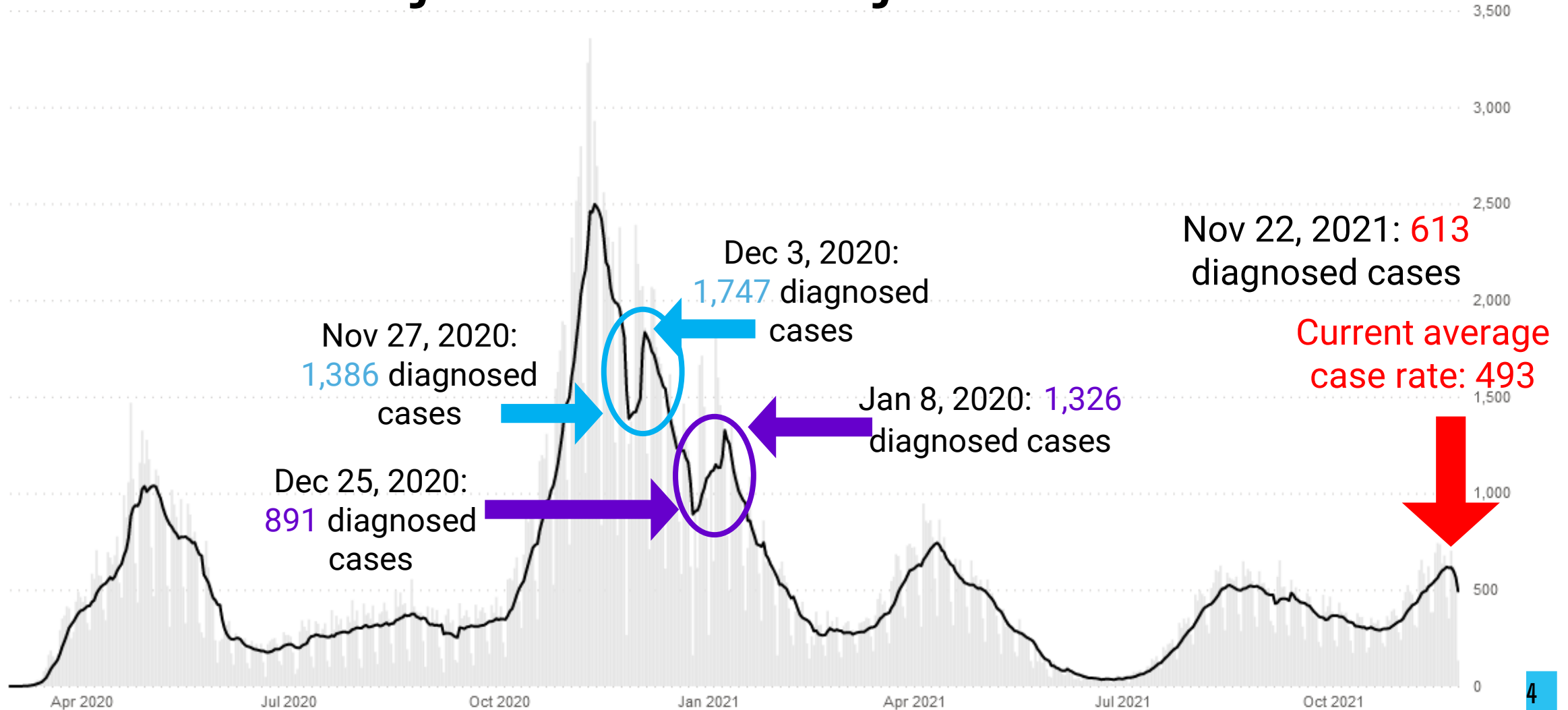
Chicago COVID-19 Community Transmission and Risk Matrix

	VERY HIGH TRANSMISSION	HIGH TRANSMISSION	SUBSTANTIAL TRANSMISSION	LOWER TRANSMISSION	LOW TRANSMISSION
COVID-19 CASES DIAGNOSED PER DAY Chicago residents - 7-day rolling daily average	800+	400 - 799 Current: 493 Decreased due to holiday testing	200 - 399	20 - 199	<20
COVID-19 TEST POSITIVITY Chicago residents - 7-day rolling daily average	10%+	6.6 - 9.9%	5.0 - 6.5%	2 - 4.9% Current: 3.5% Increasing	<2%
HOSPITAL BEDS (NON-ICU) OCCUPIED BY COVID PATIENTS Chicago hospitals - 7-day rolling daily average	1250+	750 - 1249	250 - 749 Current: 300 Increasing	100 - 249	<100
ICU BEDS OCCUPIED BY COVID PATIENTS Chicago hospitals - 7-day rolling daily average	400+	300 - 399	100 - 299	20 - 99 Current: 86 Increasing	<20

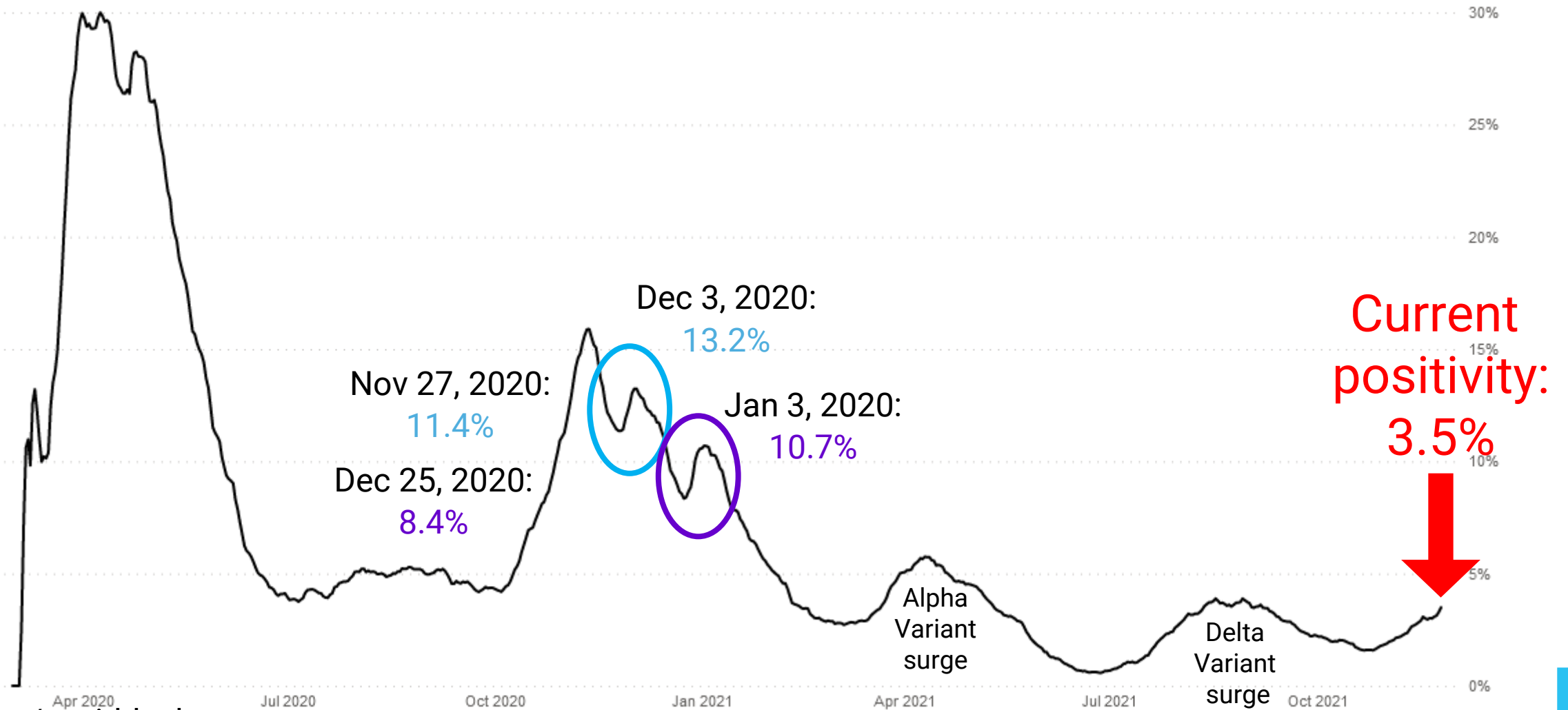
Source: Chicago Department of Public Health, data current as of November 30, 2021. These metrics represent general community COVID transmission and should not be applied to individual settings that have mitigation practices in place.

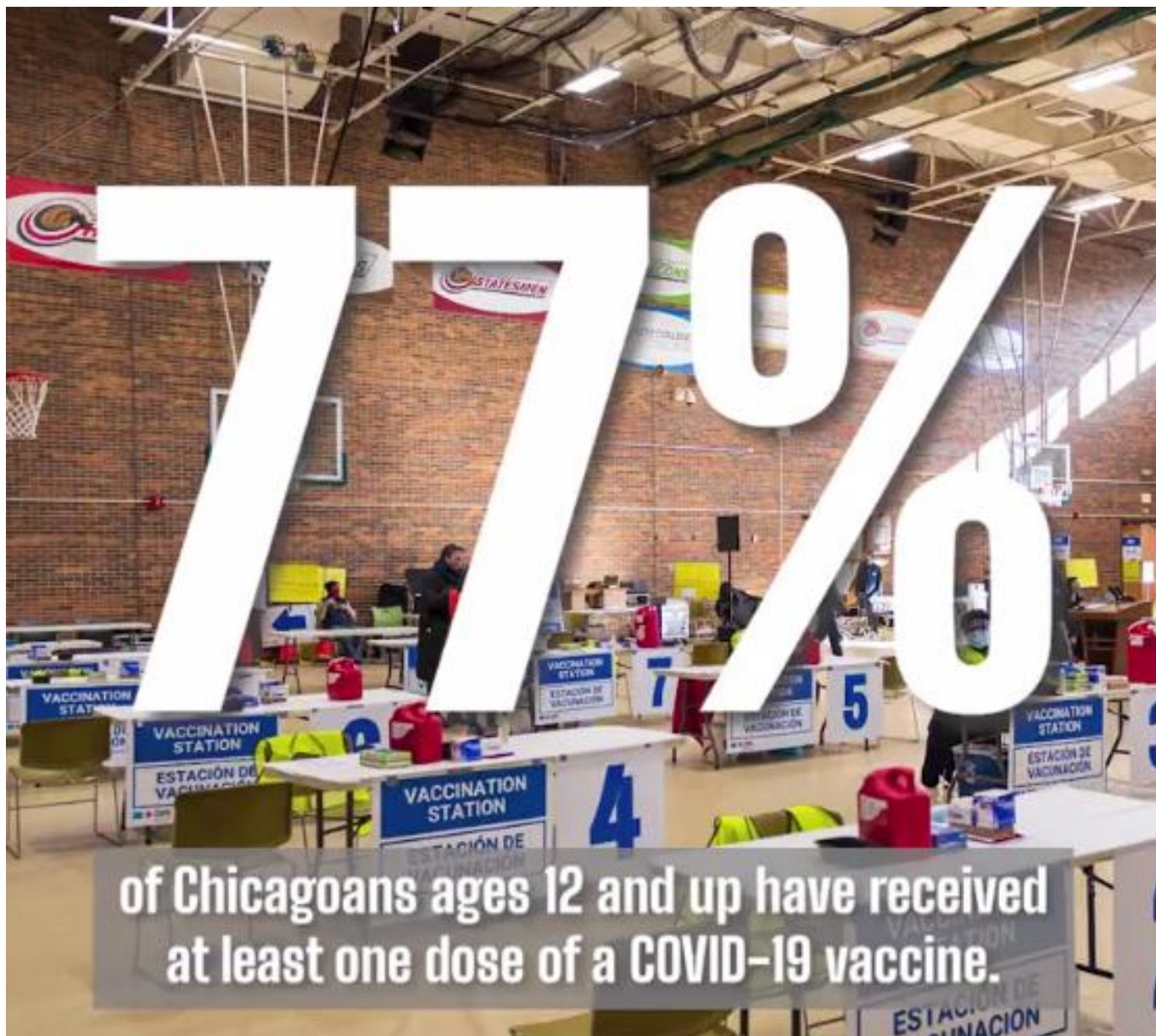


Chicago: New COVID cases appear to be decreasing, however trends will likely mirror 2020 holiday case rates



Chicago: COVID test positivity increases





But there's still more work to do!

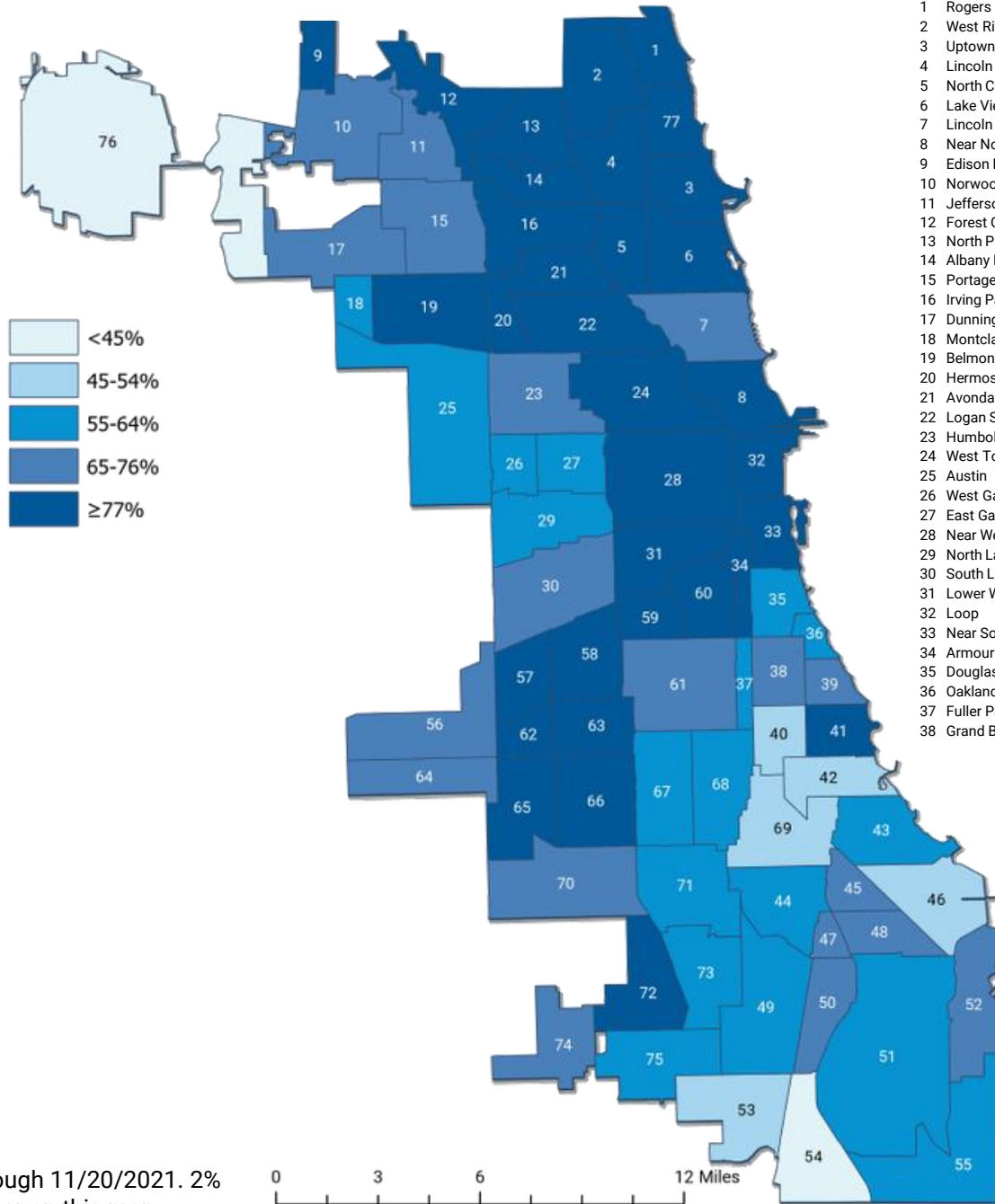


Percent of residents 12+ years-old with at least one dose of COVID-19 vaccine by community area

Citywide:
77.2%

Community Area Milestones

- **Roseland** reached 60%
- **Chicago Lawn** reached 77%
- **Near West Side** reached 80%
- **West Lawn** reached 90%



Community Areas:

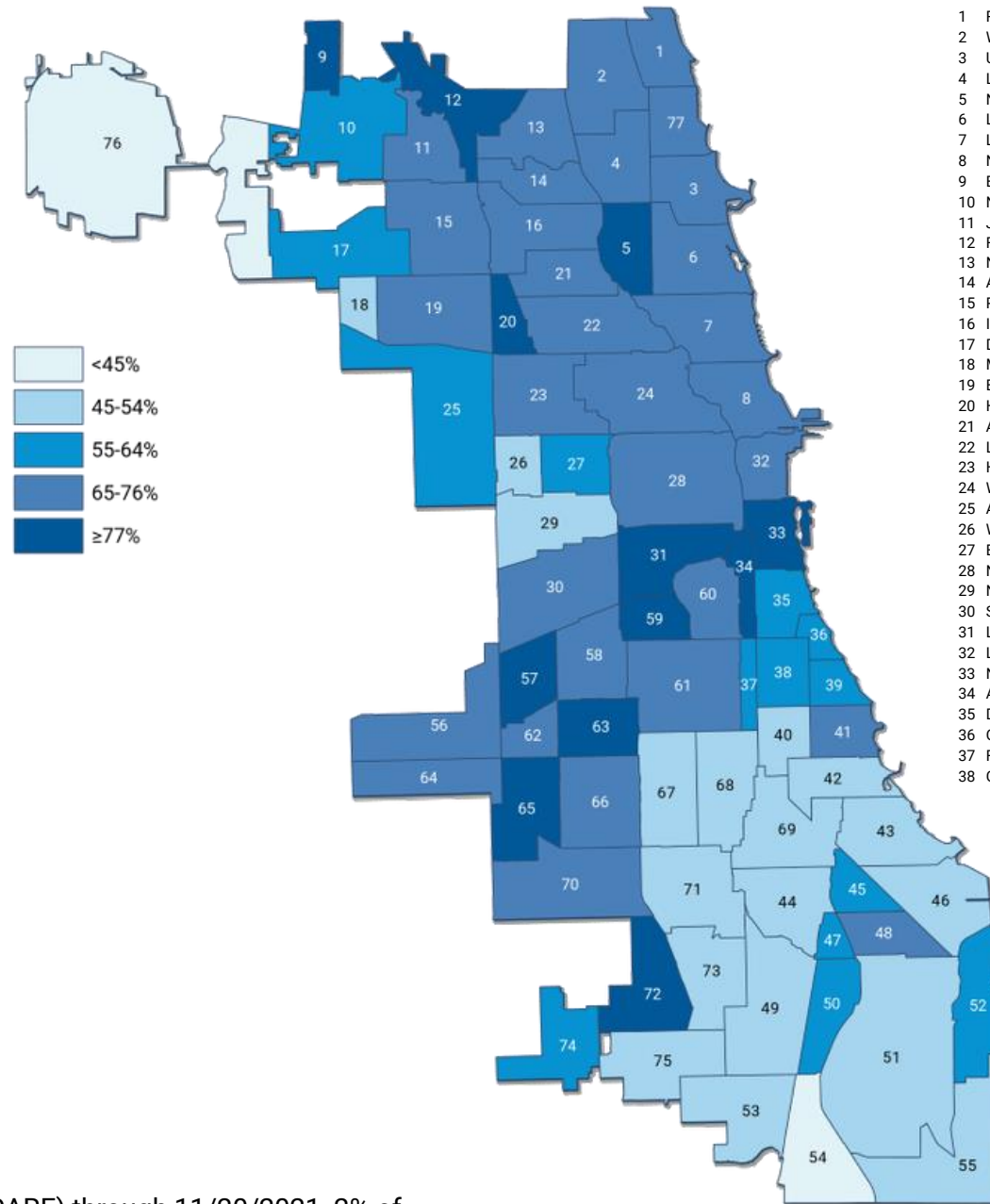
- | | |
|-----------------------|---------------------------|
| 1 Rogers Park | 39 Kenwood |
| 2 West Ridge | 40 Washington Park |
| 3 Uptown | 41 Hyde Park |
| 4 Lincoln Square | 42 Woodlawn |
| 5 North Center | 43 South Shore |
| 6 Lake View | 44 Chatham |
| 7 Lincoln Park | 45 Avalon Park |
| 8 Near North Side | 46 South Chicago |
| 9 Edison Park | 47 Burnside |
| 10 Norwood Park | 48 Calumet Heights |
| 11 Jefferson Park | 49 Roseland |
| 12 Forest Glen | 50 Pullman |
| 13 North Park | 51 South Deering |
| 14 Albany Park | 52 East Side |
| 15 Portage Park | 53 West Pullman |
| 16 Irving Park | 54 Riverdale |
| 17 Dunning | 55 Hegewisch |
| 18 Montclare | 56 Garfield Ridge |
| 19 Belmont Cragin | 57 Archer Heights |
| 20 Hermosa | 58 Brighton Park |
| 21 Avondale | 59 McKinley Park |
| 22 Logan Square | 60 Bridgeport |
| 23 Humboldt Park | 61 New City |
| 24 West Town | 62 West Elsdon |
| 25 Austin | 63 Gage Park |
| 26 West Garfield Park | 64 Clearing |
| 27 East Garfield Park | 65 West Lawn |
| 28 Near West Side | 66 Chicago Lawn |
| 29 North Lawndale | 67 West Englewood |
| 30 South Lawndale | 68 Englewood |
| 31 Lower West Side | 69 Greater Grand Crossing |
| 32 Loop | 70 Ashburn |
| 33 Near South Side | 71 Auburn Gresham |
| 34 Armour Square | 72 Beverly |
| 35 Douglas | 73 Washington Heights |
| 36 Oakland | 74 Mount Greenwood |
| 37 Fuller Park | 75 Morgan Park |
| 38 Grand Boulevard | 76 O'Hare |
| | 77 Edgewater |

Data reported to the Illinois Comprehensive Automated Immunization Registry (I-CARE) through 11/20/2021. 2% of people with a first dose had an address that was unable to be geocoded and do not appear on this map.



Percent of residents 12+ years-old with a completed COVID-19 vaccine series by community area

Citywide: 70.9%



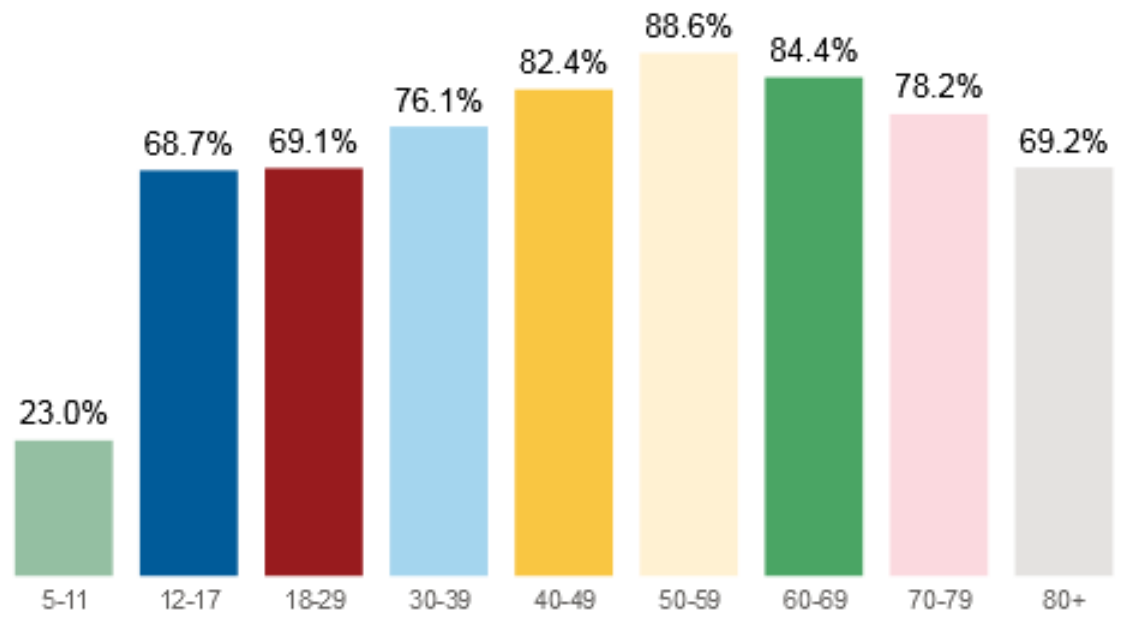
Community Areas:

- 1 Rogers Park
- 2 West Ridge
- 3 Uptown
- 4 Lincoln Square
- 5 North Center
- 6 Lake View
- 7 Lincoln Park
- 8 Near North Side
- 9 Edison Park
- 10 Norwood Park
- 11 Jefferson Park
- 12 Forest Glen
- 13 North Park
- 14 Albany Park
- 15 Portage Park
- 16 Irving Park
- 17 Dunning
- 18 Montclare
- 19 Belmont Cragin
- 20 Hermosa
- 21 Avondale
- 22 Logan Square
- 23 Humboldt Park
- 24 West Town
- 25 Austin
- 26 West Garfield Park
- 27 East Garfield Park
- 28 Near West Side
- 29 North Lawndale
- 30 South Lawndale
- 31 Lower West Side
- 32 Loop
- 33 Near South Side
- 34 Armour Square
- 35 Douglas
- 36 Oakland
- 37 Fuller Park
- 38 Grand Boulevard
- 39 Kenwood
- 40 Washington Park
- 41 Hyde Park
- 42 Woodlawn
- 43 South Shore
- 44 Chatham
- 45 Avalon Park
- 46 South Chicago
- 47 Burnside
- 48 Calumet Heights
- 49 Roseland
- 50 Pullman
- 51 South Deering
- 52 East Side
- 53 West Pullman
- 54 Riverdale
- 55 Hegewisch
- 56 Garfield Ridge
- 57 Archer Heights
- 58 Brighton Park
- 59 McKinley Park
- 60 Bridgeport
- 61 New City
- 62 West Elsdon
- 63 Gage Park
- 64 Clearing
- 65 West Lawn
- 66 Chicago Lawn
- 67 West Englewood
- 68 Englewood
- 69 Greater Grand Crossing
- 70 Ashburn
- 71 Auburn Gresham
- 72 Beverly
- 73 Washington Heights
- 74 Mount Greenwood
- 75 Morgan Park
- 76 O'Hare
- 77 Edgewater

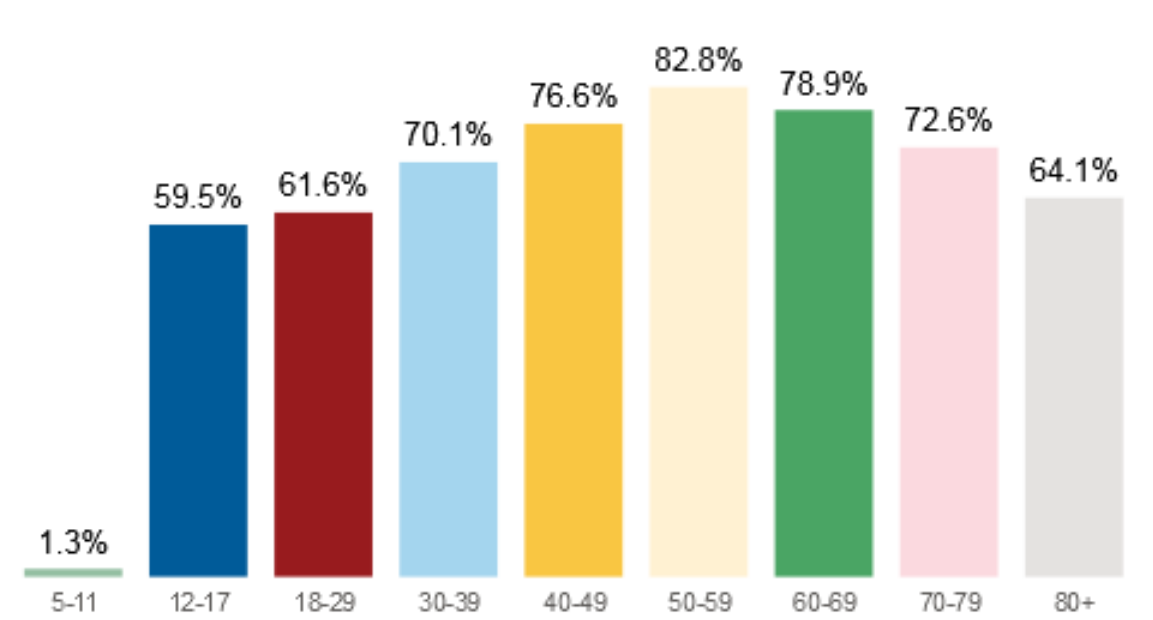
Data reported to the Illinois Comprehensive Automated Immunization Registry (I-CARE) through 11/20/2021. 2% of people with a completed series had an address that was unable to be geocoded and do not appear on this map.

Uptake among 5-11 year-olds continues to rise

At least one dose (% vaccinated as of 11/28/2021)



Completed vaccine series (% vaccinated as of 11/28/2021)



built by
slalom



Where to get your child vaccine

- Richard J Daley College – Saturday, 12/4 9am-2pm
- Wilbur Wright College – Sunday, 12/5 9am-2pm
- Protect Chicago At Home
 - Appointments available on weekends starting 12/11





Get vaccinated *now* in time for the holidays:

To be fully vaccinated against COVID-19 for

Christmas

(Dec. 25)

START your vax series by

NOV. 13	1st Dose Moderna
NOV. 20	1st Dose Pfizer
DEC. 11	Single Dose J&J



To be fully vaccinated against COVID-19 for

Kwanzaa

(Starts Dec. 26)

START your vax series by

NOV. 14	1st Dose Moderna
NOV. 21	1st Dose Pfizer
DEC. 12	Single Dose J&J



To be fully vaccinated against COVID-19 for

New Years Eve

(Dec. 31)

START your vax series by

NOV. 19	1st Dose Moderna
NOV. 26	1st Dose Pfizer
DEC. 17	Single Dose J&J





Omicron (B.1.1.529)

Key updates as of November 30, 2021

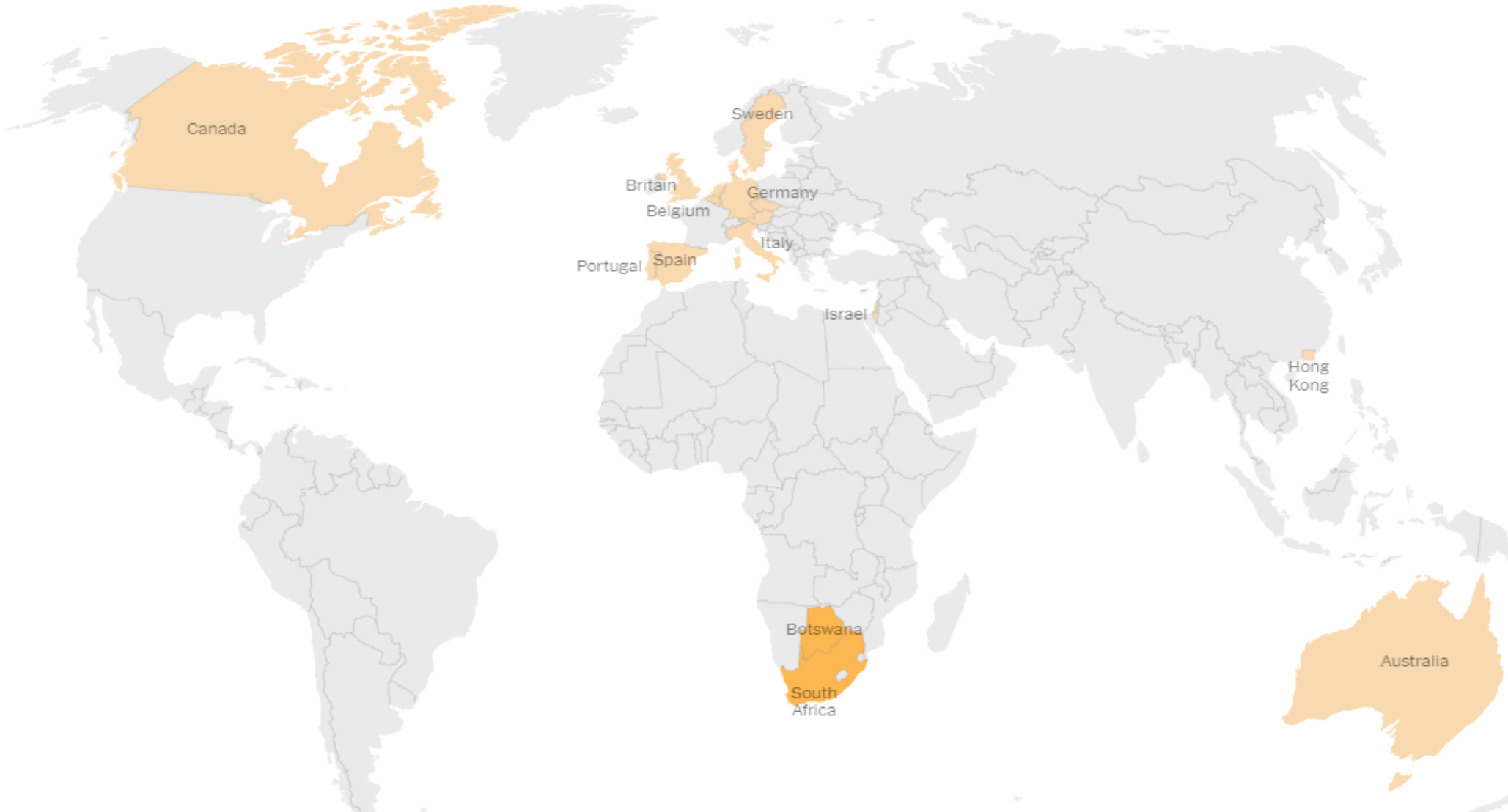


Timeline of detection to date

- November 11-14, 2021: specimens collected in Botswana and South Africa that are later identified as Omicron
- November 23, 2021: Discovery of new variant that showed different results in qPCR in South Africa
- November 24, 2021: First news reports from similar variant found in Botswana and China (from traveler from South Africa) from sequences in database
- November 26, 2021: Designated as a Variant of Concern (VOC) by WHO
- November 29, 2021: Detected so far in Africa, Asia, Australasia, Europe, North America

Current Worldwide Distribution

Local transmission Omicron detected in a traveler

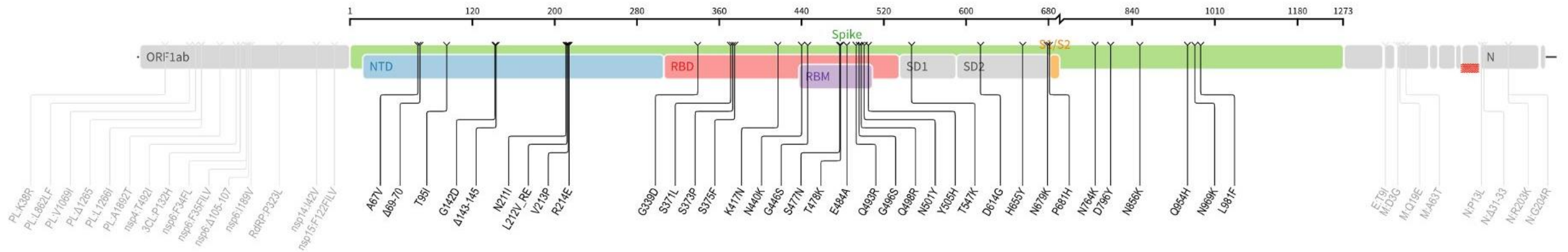


★ Viruses replicate (copy themselves), leading to mutations

- Viruses need a host (YOU!) to survive; they use human/animal cells to copy themselves
- Once a virus enters a human, it starts copying itself millions of times. The human immune system works to fight off the virus, but not before these copies are made. The virus is looking for opportunities to reproduce and spread.
- Mutations are random “errors” in the virus’ genetic code that can be introduced when the virus copies itself
- The more virus that is circulating in a population, the more the virus itself can change
- If a mutation makes it more likely that a virus will survive/replicate, it may out-compete versions of the virus that don’t have that mutation.
- A variant is a version of the virus that has a certain pattern of mutations. Three main levels.
 - Repeated transmission: **Variant of interest**
 - Repeated transmission that is concerning from a public health standpoint: **Variant of concern (e.g. Delta)**
 - E.g. this version of the virus may be more contagious, more able to evade our immune system’s lessons from prior infection or vaccine, makes us sicker, makes our treatments less likely to work.
 - Repeated transmission that is highly concerning from a public health standpoint: **Variant of high consequence**
 - *Not had one of these yet (could it be Omicron?)*

★ Why the concern? Laboratory evidence

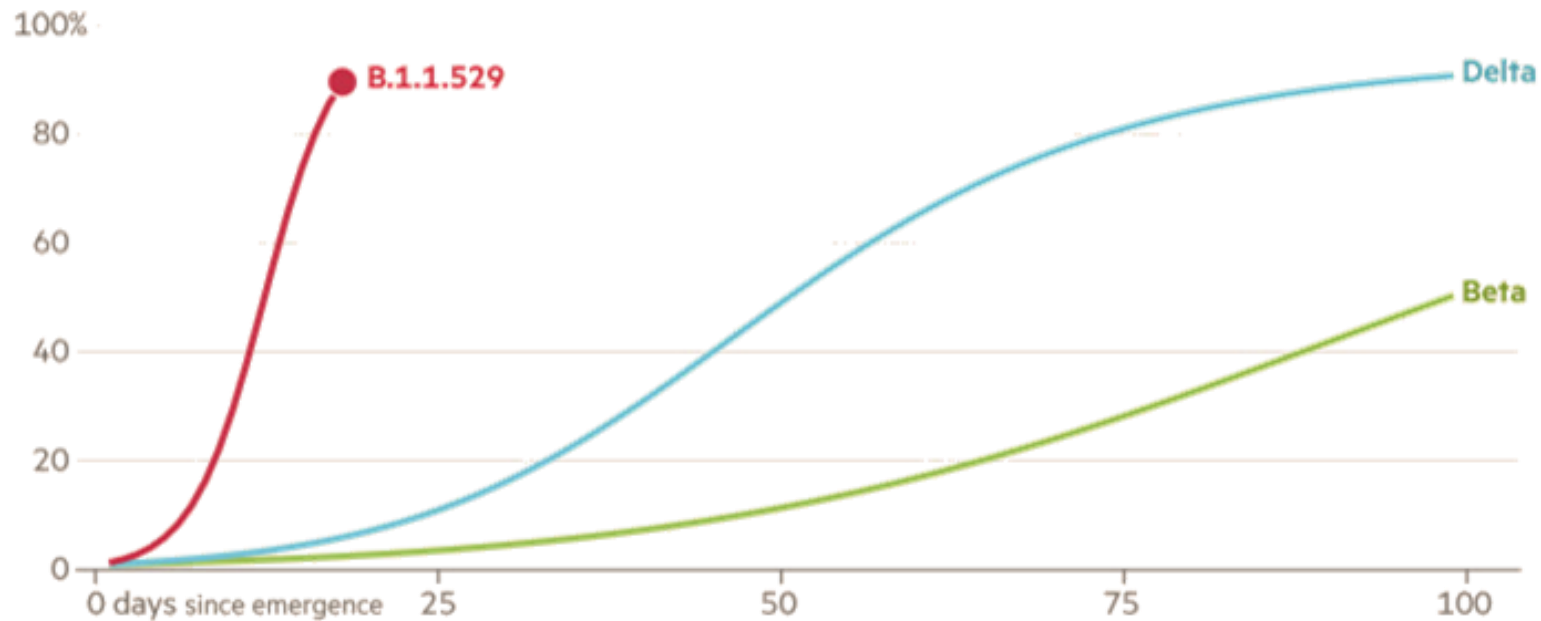
- Large number of mutations (50 overall and 32 in the spike protein)
- 30 amino acid changes, three small deletions, and one small insertion in the spike protein compared to original virus
- Most divergent variant (most number of mutations) that has been detected thus far
- Changes seen in the sequence coding of the spike protein have been previously associated with increased transmissibility or immune escape



★ Why the concern? Epidemiologic evidence

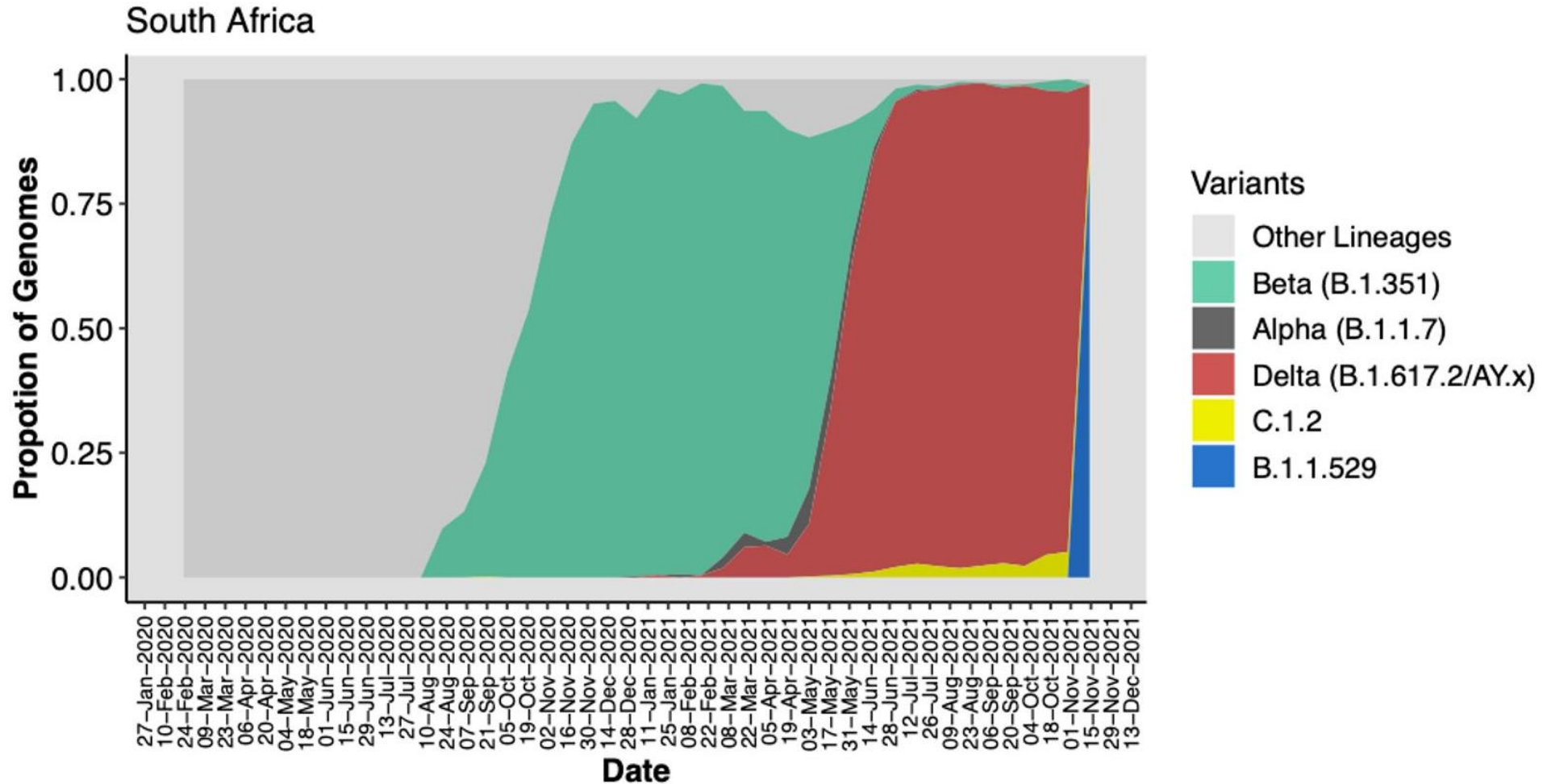
A new variant is spreading rapidly in South Africa, and appears to be out-competing other variants much faster than previous variants of concern did

Share of all sequenced cases* in South Africa accounted for by each variant, by number of days since it passed 1%



*Growth of B.1.1.529 is modelled from SGTF data rather than full genomic sequences
Source: FT analysis of data from Gisaid and the South African National Health Laboratory Service
© FT

★ Why the concern? Laboratory evidence



★ Why the concern? Epidemiologic evidence

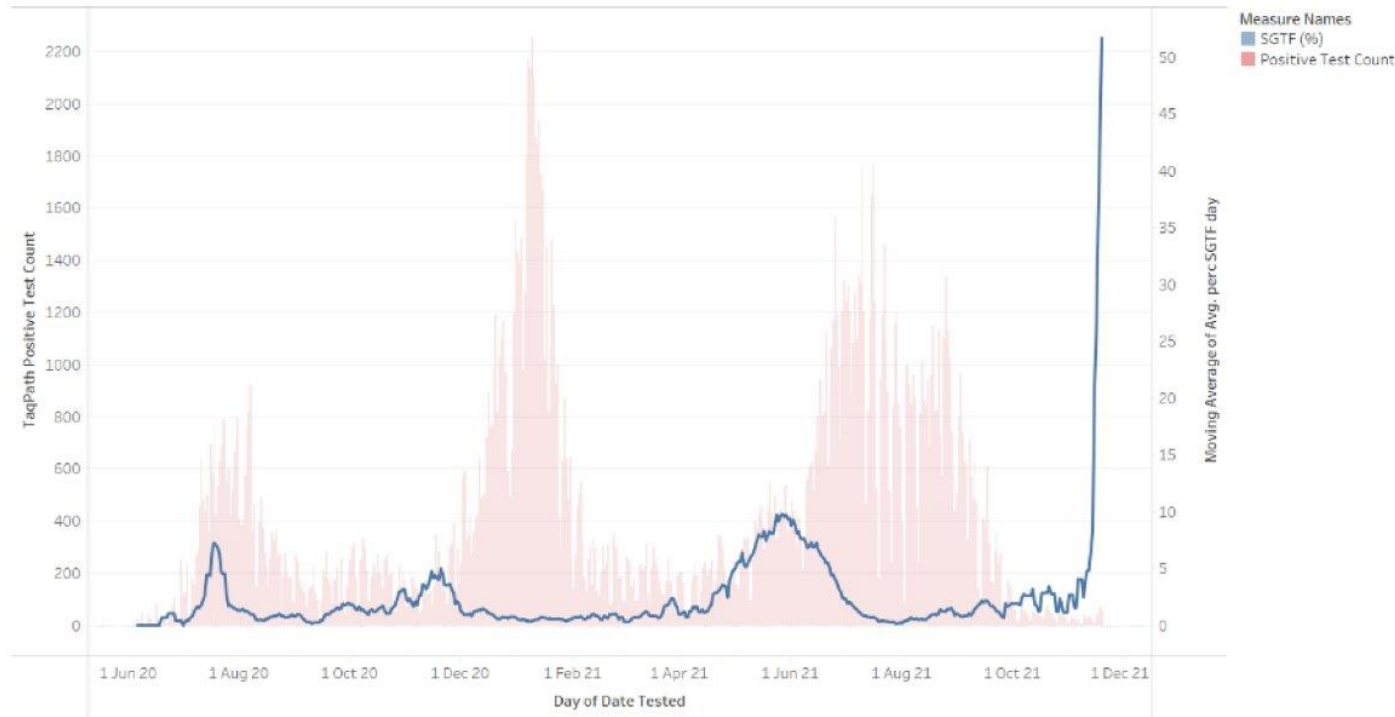


Figure 9: S-gene dropout (%) of cases with high VL (Ct value<30 for ORF or N gene). The red bars are the number of tests reporting the presence of SARS-CoV-2 (daily) on the TaqPath assay. The solid blue line is the moving median of S-gene dropout (%).

*Current (end of Nov '21) dramatically increasing trend in the proportion of SGTF (Ct value<30 for ORF or N gene)

<https://twitter.com/Tuliodna/status/1463911554538160130>

★ Why the concern? Totality of evidence

- **More transmissible?** (More contagious)
 - Likely, based on pattern seen in South Africa
- **More immune escape?** (Humans less likely to be fully protected as a result of vaccination or prior infection)
 - Likely, being investigated
 - Most divergent variant (most mutations) so far¹
 - Known mutations are concerning (*though some protection against severe disease still likely, T-cell response unclear*)
- **Less effective treatments?**
 - Somewhat likely
 - Monoclonal antibodies may need to be retargeted. Some good news—upcoming antiviral medications likely less affected.
- **More severe disease?**
 - Unclear
 - Early cases in South Africa among the young, relatively mild. Increasing hospitalizations in SA may be related simply to increasing cases (not the variant)
- **Less sensitive diagnostics?** (Tests don't work as well)
 - Unlikely
 - Some PCR assays may be less sensitive, impact likely minimal given most are multi-target
 - Some theoretical risk to antigen tests given deletion in N gene, but studies ongoing and initial results not concerning

1. <https://www.nature.com/articles/s41586-021-04005-0>. 20 spike mutations in a synthetic variant meant “near complete” resistance to neutralizing antibodies

International policy responses (Omicron and EU surge)

- Poland: ban flights to seven African countries, extend the quarantine period for some travellers and reduce limits on numbers allowed into places like restaurants.
- Germany: Considering toughening restrictions
- Australia: reversed plans to reopen its international borders to skilled workers and students.
- Japan: shut its borders to foreigners to prevent the spread of the Omicron variant, joining Israel in imposing some of the strictest border controls since the variant's discovery in South Africa.
- The Netherlands: partial lockdown from Saturday, restaurants and shops to close early, spectators barred from major sporting events. Bars and restaurants to close at 8 pm; partial lockdown to last three weeks; social distancing reimposed immediately



National actions on travel

- As of November 29, 2021, the US announced travel restrictions from eight countries: Malawi, Mozambique, Zimbabwe, Botswana, Eswatini, Lesotho, South Africa, and Namibia
- May see increased testing and quarantine requirements for all international travelers.
- Expected amendment of Nov 8 travel order by Dec 2 to include for all international travelers – regardless of vax status:
 - Viral test within 1 day pre-departure
 - Self-attestation to:
 - Receive a PCR test at 3-5 days post arrival AND
 - Quarantine 7 days (even if test neg) or Q10 days w/o testing.
 - Isolate if test positive



Local CDPH/laboratory responses

- Increase Chicago-wide sampling for genetic sequencing to ; sample is representative of city population
- In the laboratory, add a pre-screening PCR step to identify possible Omicron variant rather than batching testing
- Continue to increase local wastewater sampling for COVID, including adding capacity at ORD international terminal
 - Argonne National Laboratory (subcontractors of UIC) should have primers for Omicron this week





Next steps

- We are well placed to *detect* Omicron and likely will soon. The question is *response*.
 - **Vaccinate!!!**
 - **Boosters!**
 - **All** Chicagoans 18+ should get a booster 6 months after Pfizer/Moderna, 2 months after J/J.
 - **Masks indoors!**
 - **Staying home if you're sick, handwashing, distancing, etc.**



PROTECT
CHICAGO ★

PROTEGE A
CHICAGO ★