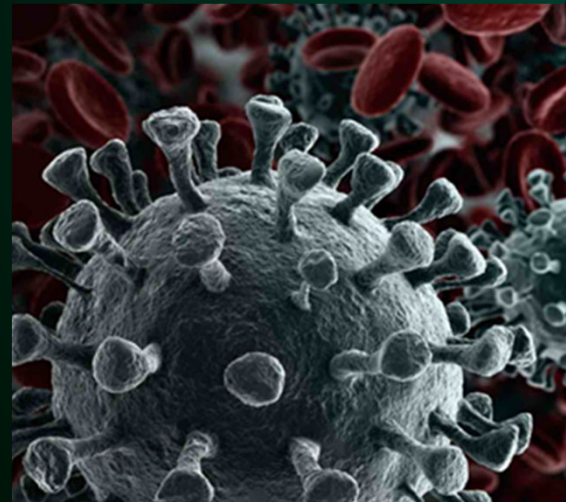


COVID-19 Update

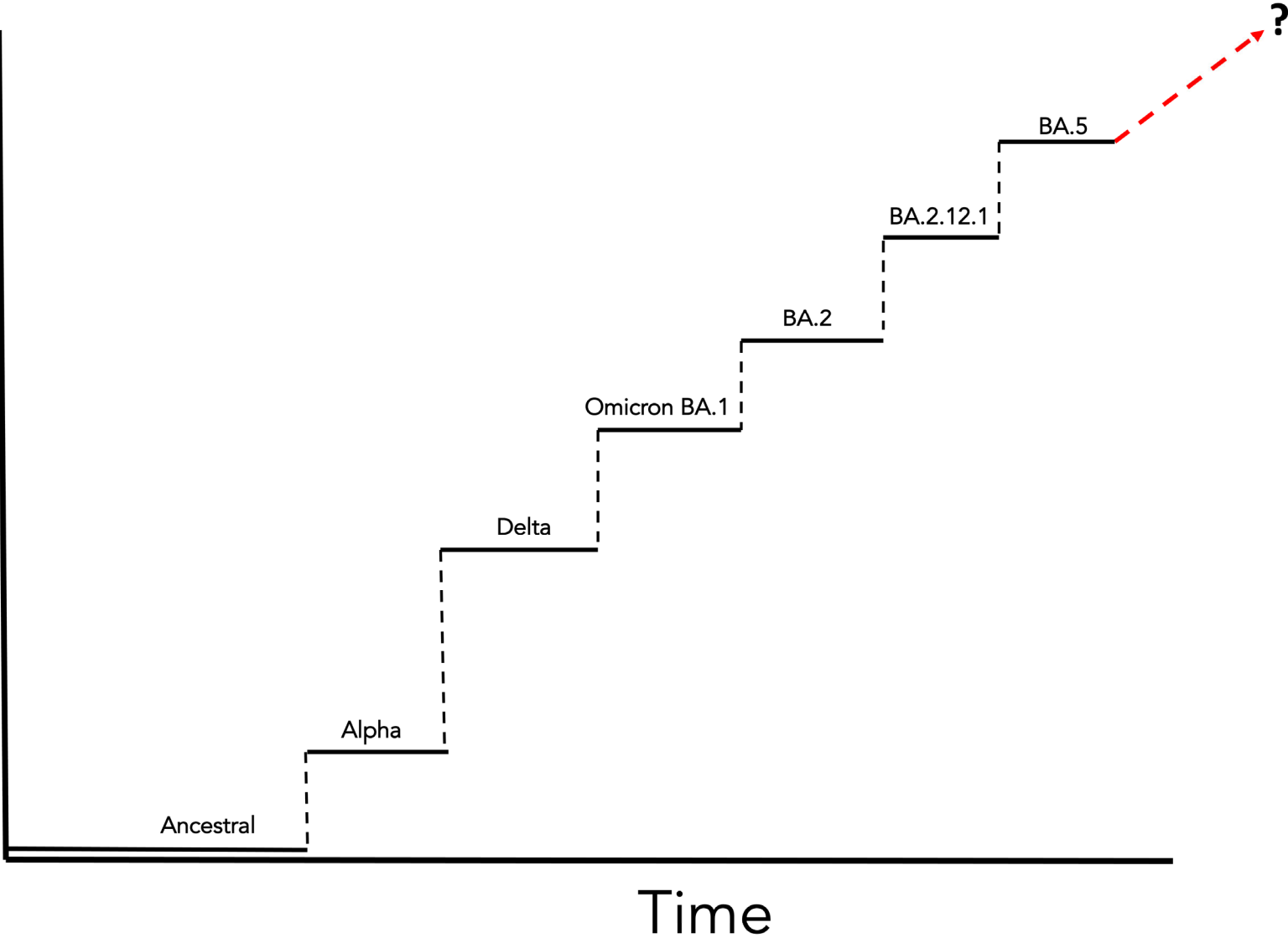
Paul J Carson, MD, FACP
NDSU Department of Public Health





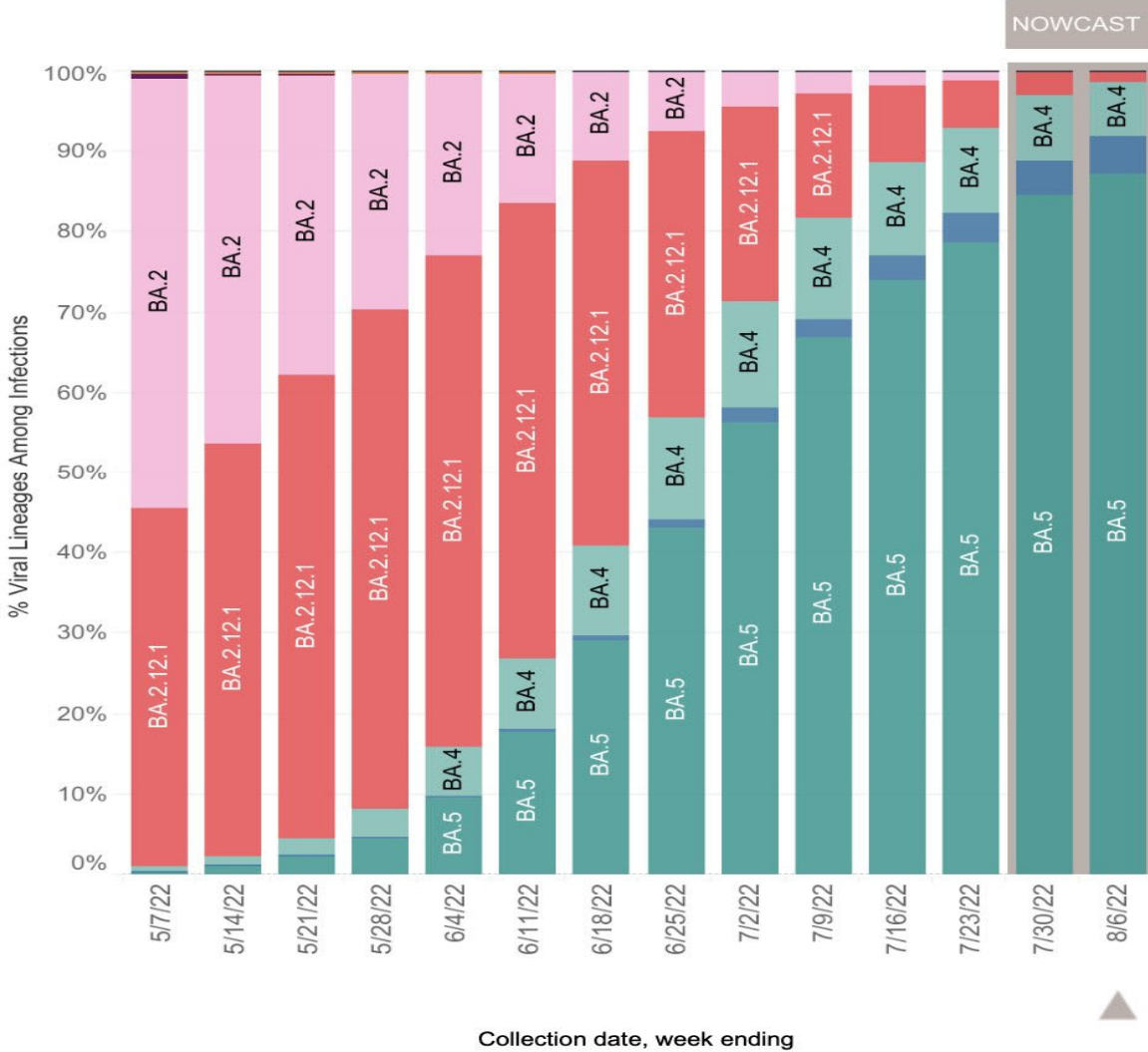
**You There! Boy!
What Variant is it Today?**

Increased
SARS-CoV-2
Growth
Advantage,
Fitness,
Immune
Escape
AND
Stronger
Immunity
Wall Built



United States: 5/1/2022 – 8/6/2022

United States: 7/31/2022 – 8/6/2022 NOWCAST



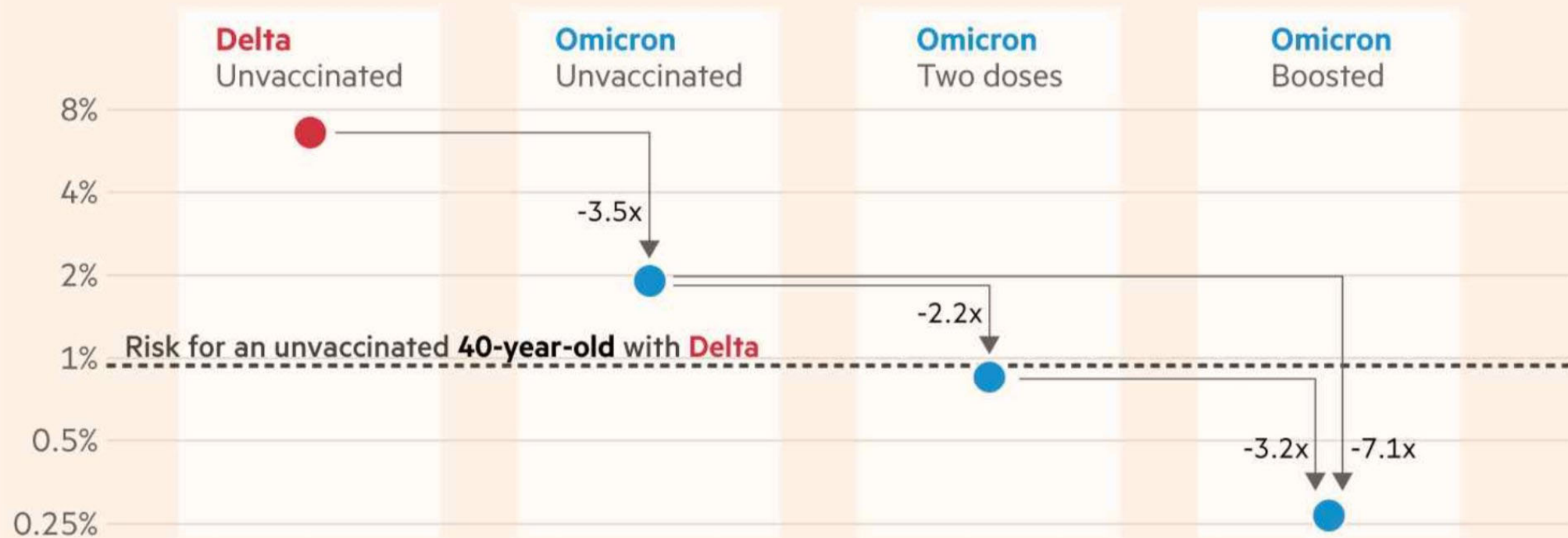
USA

WHO label	Lineage #	US Class	%Total	95%PI
Omicron	BA.5	VOC	87.1%	85.8-88.3%
	BA.4	VOC	6.6%	6.1-7.2%
	BA.4.6	VOC	4.8%	3.9-5.8%
	BA.2.12.1	VOC	1.5%	1.4-1.6%
	BA.2	VOC	0.1%	0.1-0.1%
	B.1.1.529	VOC	0.0%	0.0-0.0%
	BA.1.1	VOC	0.0%	0.0-0.0%
Delta	B.1.617.2	VBM	0.0%	0.0-0.0%
Other	Other*		0.0%	0.0-0.0%

* 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
 # AY.1-AY.133 and their sublineages are aggregated with B.1.617.2. BA.1, BA.3 and their sublineages (except BA.1.1 and its sublineages) are aggregated with B.1.1.529. For regional data, BA.1.1 and its sublineages are also aggregated with B.1.1.529, as they currently cannot be reliably called in each region. Except BA.2.12.1, BA.2 sublineages are aggregated with BA.2. Except BA.4.6, sublineages of BA.4 are aggregated to BA.4. Sublineages of BA.5 are aggregated to BA.5.

Omicron is intrinsically less severe than Delta, but the reduction in risk is much smaller than that provided by vaccines

Risk of a 70-year-old being admitted to ICU with Covid after testing positive,
by variant and vaccination status (log scale)



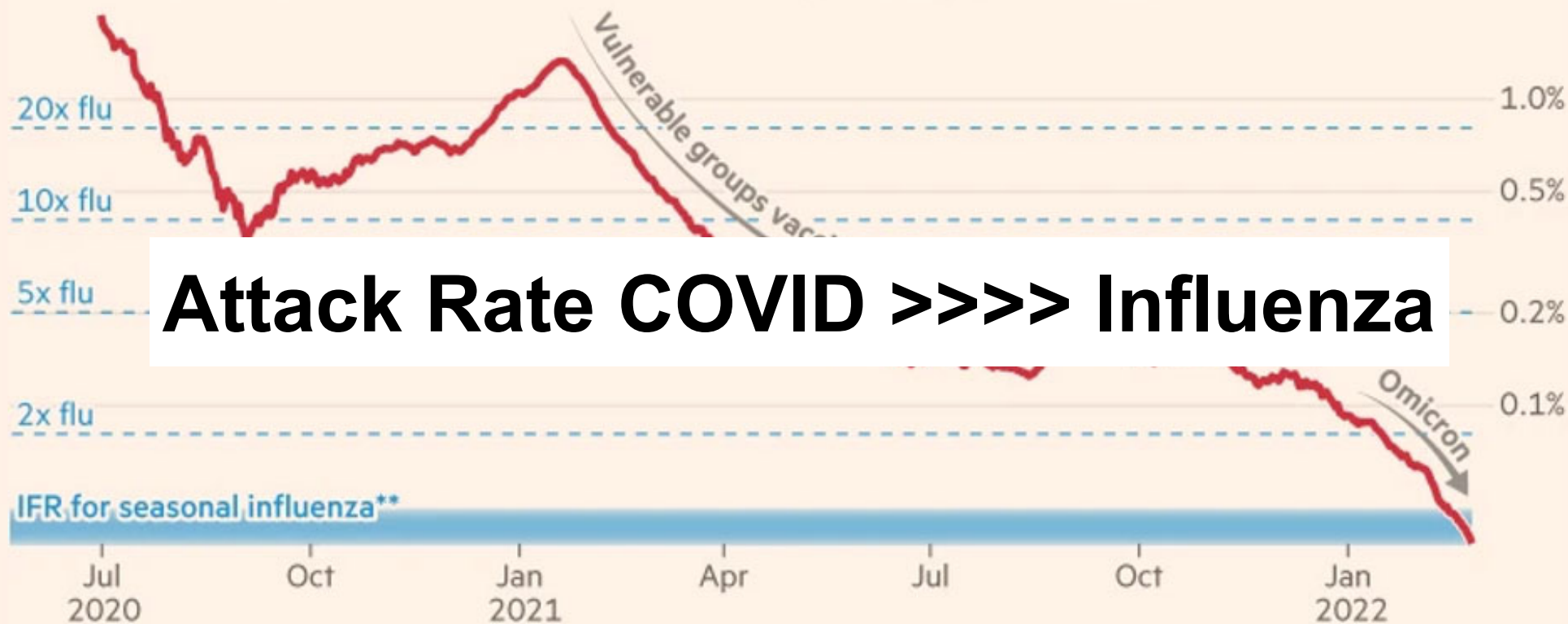
Source: French directorate of research, studies, evaluation and statistics

FT graphic by John Burn-Murdoch / @jburnmurdoch

© FT

Covid has grown gradually less lethal over the pandemic, mainly due to immunity, and is now slightly less lethal than flu on average

Evolution of Covid-19's infection fatality ratio* in England, relative to seasonal flu



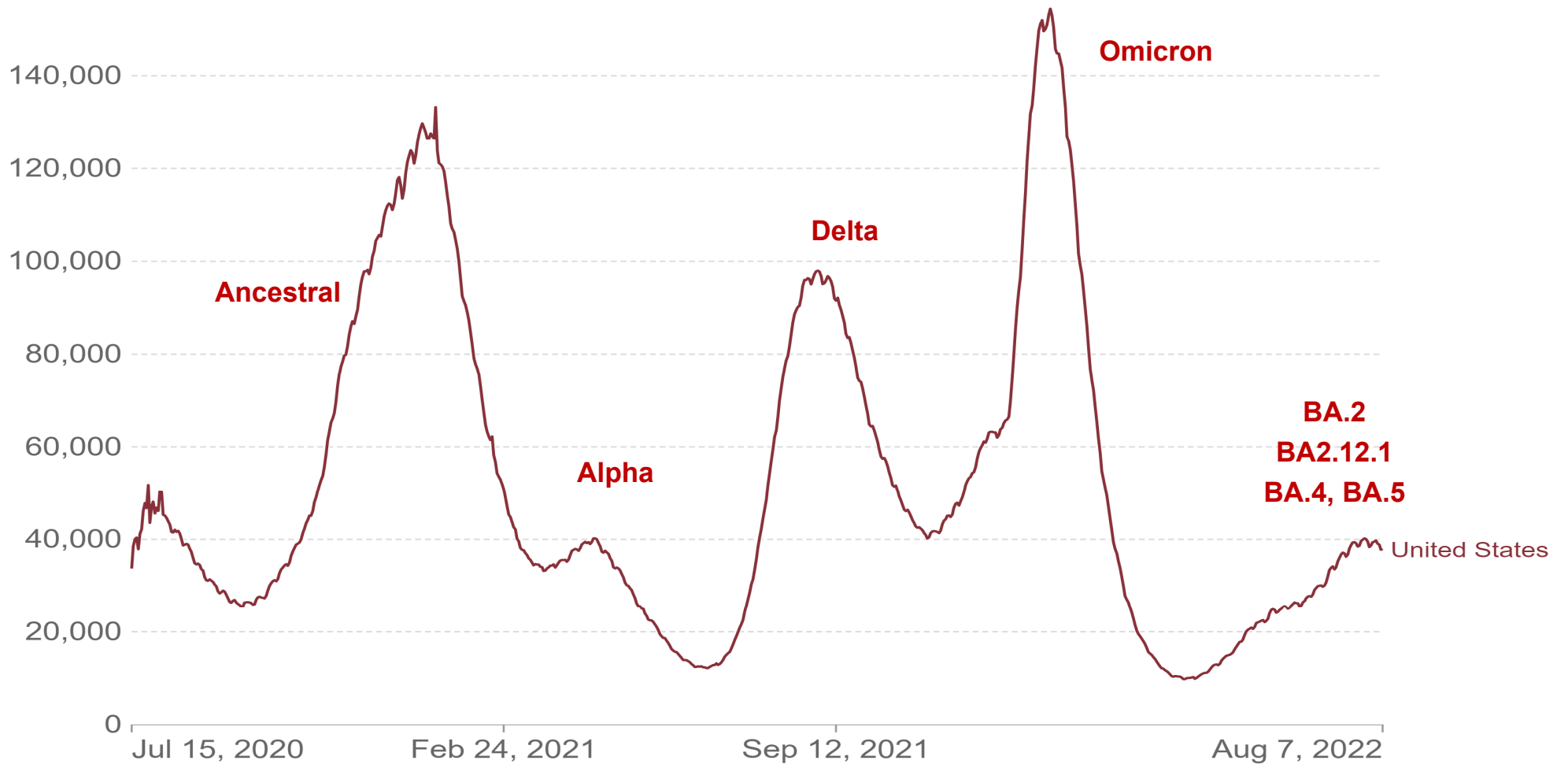
Attack Rate COVID >>>> Influenza

*Covid IFR calculated using ONS death cert. mentions and ONS infection survey. **IFR for seasonal flu calculated by applying age-specific IFR from CDC to English age structure, and assuming 67%-75% of flu infections are asymptomatic

Source: ONS. Based on prior work by Dan Howdon FT graphic: John Burn-Murdoch / @jburnmurdoch

© FT

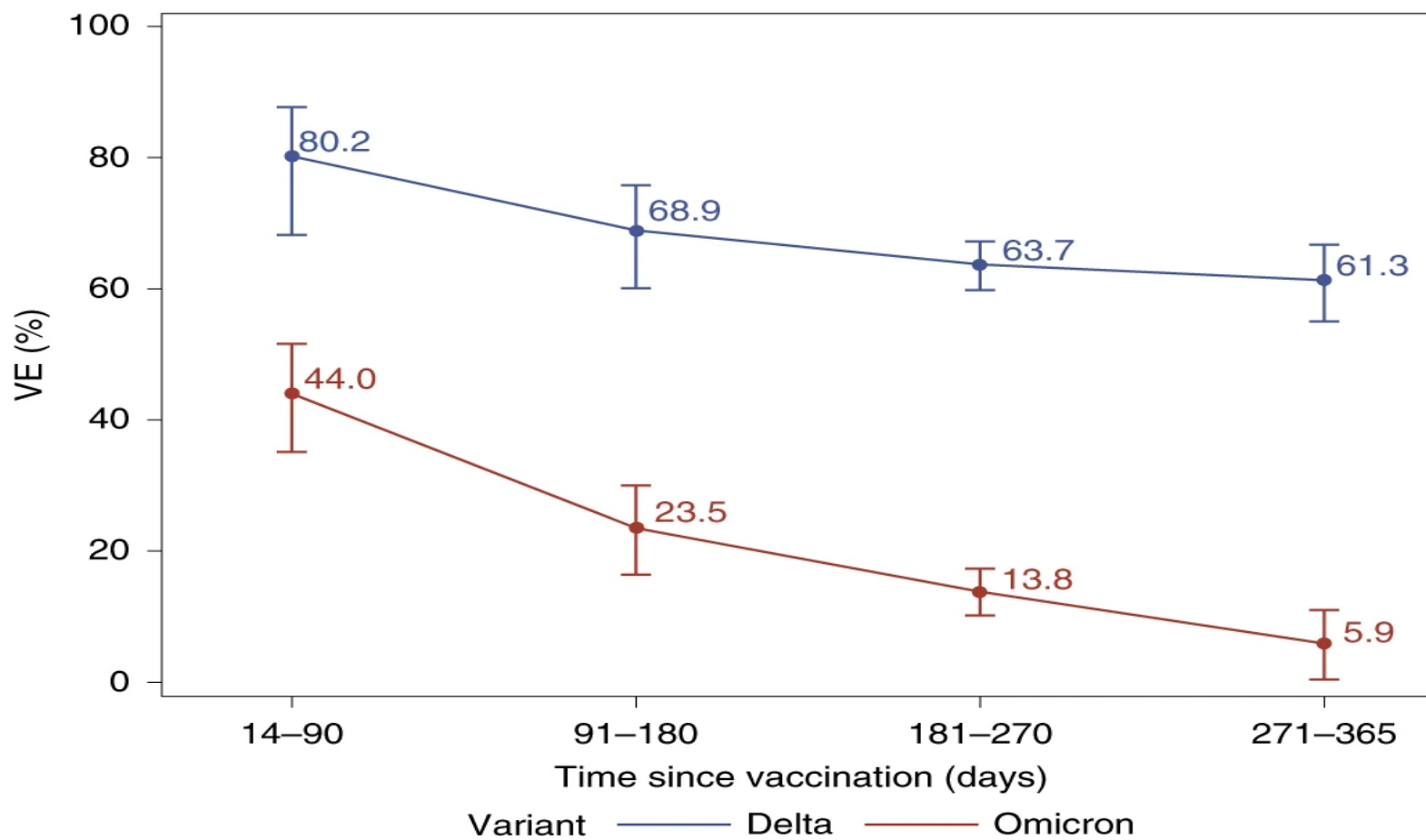
Number of COVID-19 patients in hospital



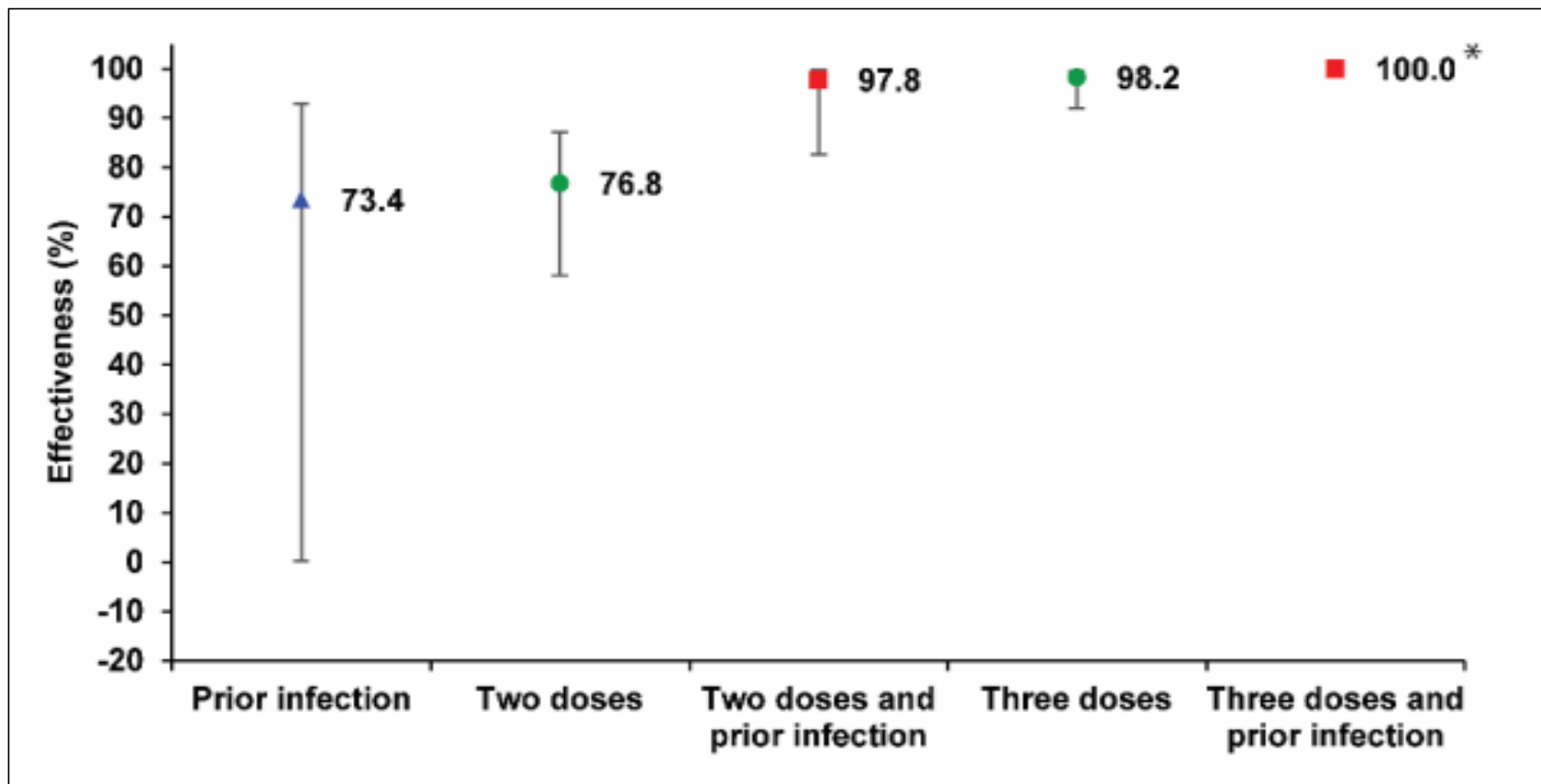
Source: Official data collated by Our World in Data

CC BY

2-Dose Vaccine Effectiveness Against Breakthrough Infection

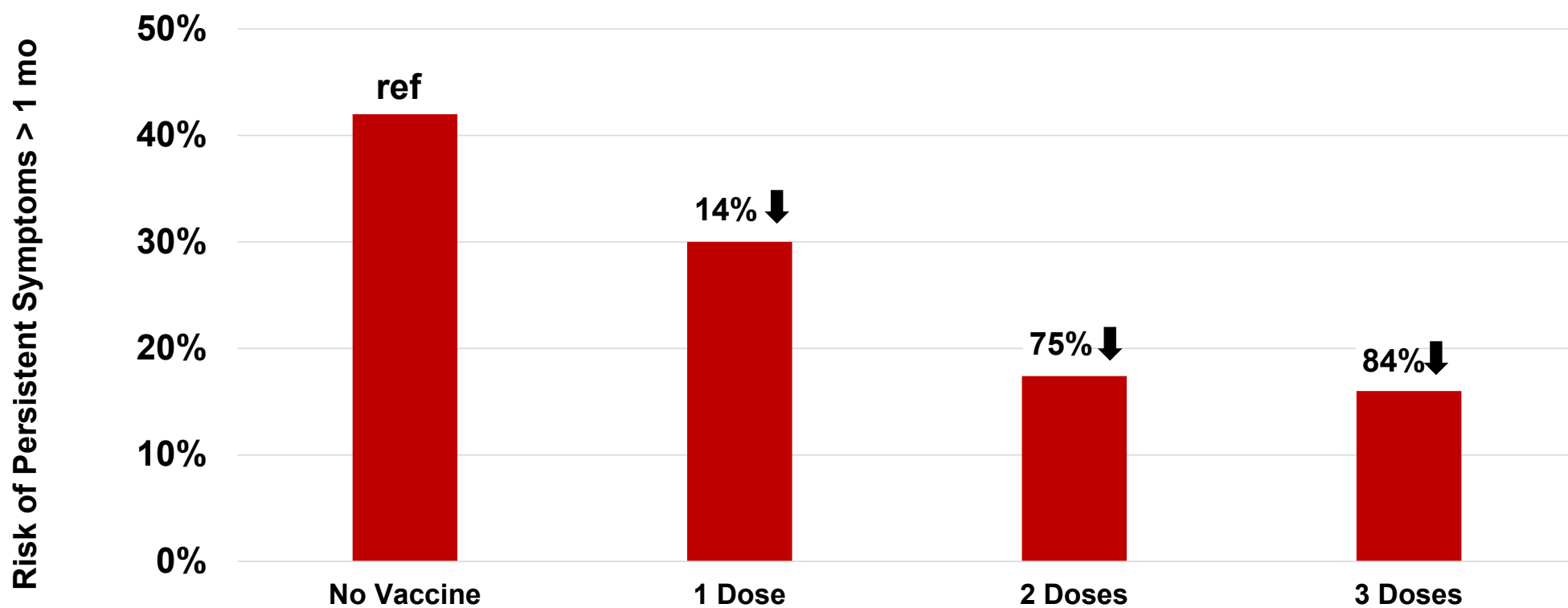


Effectiveness of Prior Immunity Against BA.2 Hospitalization and Death

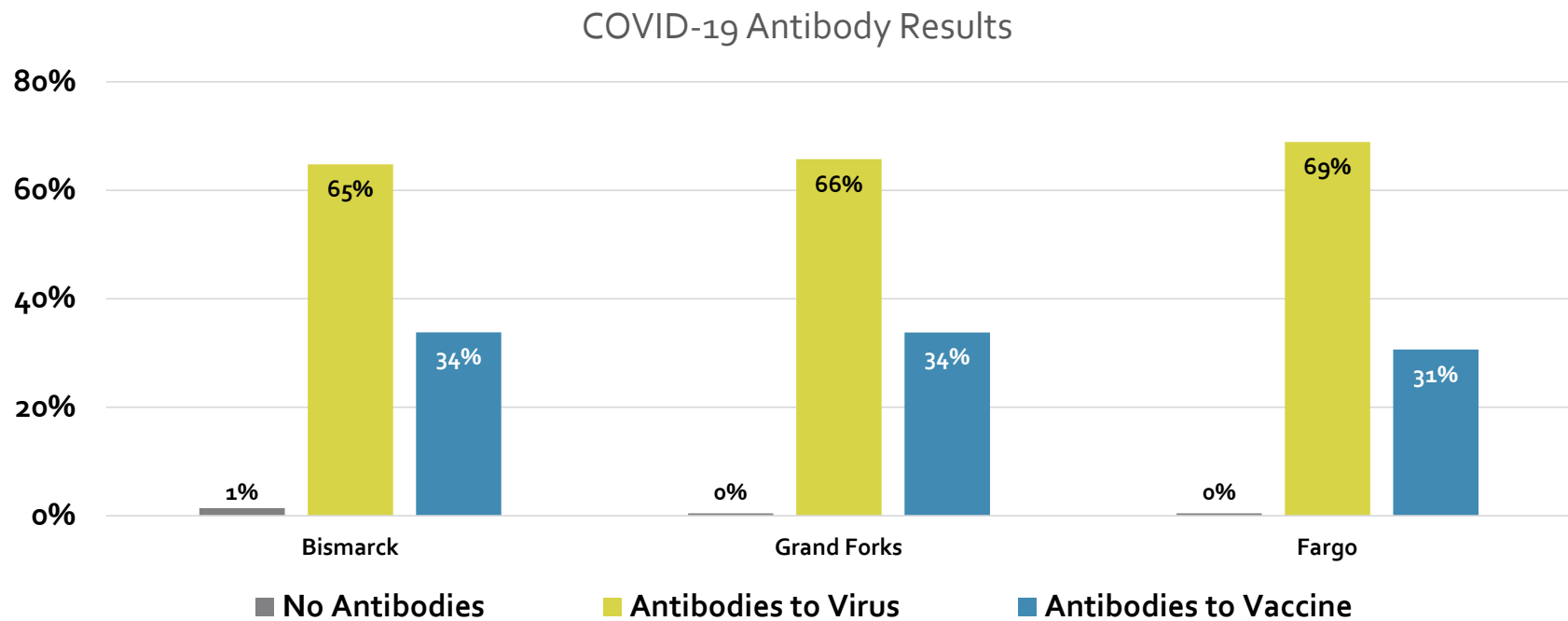


Altarawneh HN. NEJM, Jun 2022

Vaccine Protection Against Long-COVID in HCW Cohort was Dose Dependent



Immunosurveillance and Experiences of COVID-19 in ND Project – May, 2022



COVID-19 Cases Overview

Last Updated: 8/5/2022

POPULATION
762,062

COUNTY
All

Hover over a value and click the icon for more information

THIS WEEK

7/29/2022 - 8/4/2022

WEEKLY NEW POSITIVE CASES

1952

7 DAY CASE RATE PER 100,000 INDIVIDUALS

256

CUMULATIVE

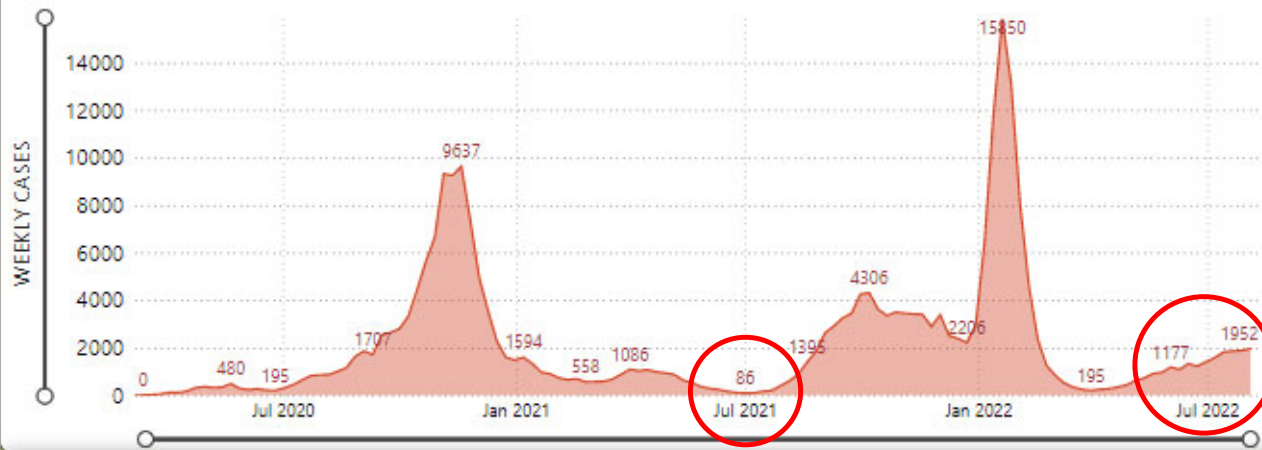
TOTAL POSITIVE CASES

259,270

DEATHS

CLICK TO VIEW AT VITAL RECORDS

WEEKLY NEW POSITIVE CASES



COVID HOSPITALIZATIONS IN ND FACILITIES



STATEWIDE HOSPITAL CAPACITY

PERCENT INPATIENT BEDS OCCUPIED

78%

PERCENT ICU BEDS OCCUPIED

54%

INPATIENT BEDS OCCUPIED WITH COVID

88

ICU BEDS OCCUPIED WITH COVID

10

WEEKLY COVID ADMISSIONS

91

Key Points and Takeaways



1

Virus less virulent but more transmissible

2

Vaccine effectiveness less over time against infection

3

Vaccine effectiveness still good against severe disease

Key Points and Takeaways



1

Most faculty and students are vaccinated (at least 2 doses)

2

Approximately 70% of North Dakotans have had infection

3

Much better place due to “immunity wall” and therapies



NORTH DAKOTA
STATE UNIVERSITY

Survey of NDSU Faculty, Staff, Students in Feb 2022

Category	% Vaccinated	N
Faculty	98%	100
Staff	93.3%	165
Undergraduate students	74%	570
Graduate students	96.5%	142

Personal communication: Mary Larson, PhD, NDSU Dept. of Public Health
Megan Orr, PhD; Murphy Anderson, MPH

What to Expect This Fall?

- Cases rising now (maybe plateauing), possible spike further after start of classes
- Vast majority of these infections will be mild cold or flu-like illnesses
- Expect absenteeism and potential need to pivot to virtual offerings
- In classroom transmission not likely the major source of transmission
 - Most campus rooms now have markedly improved ventilation
 - Prior studies showing classrooms not a major source
 - Role of masks??

N95



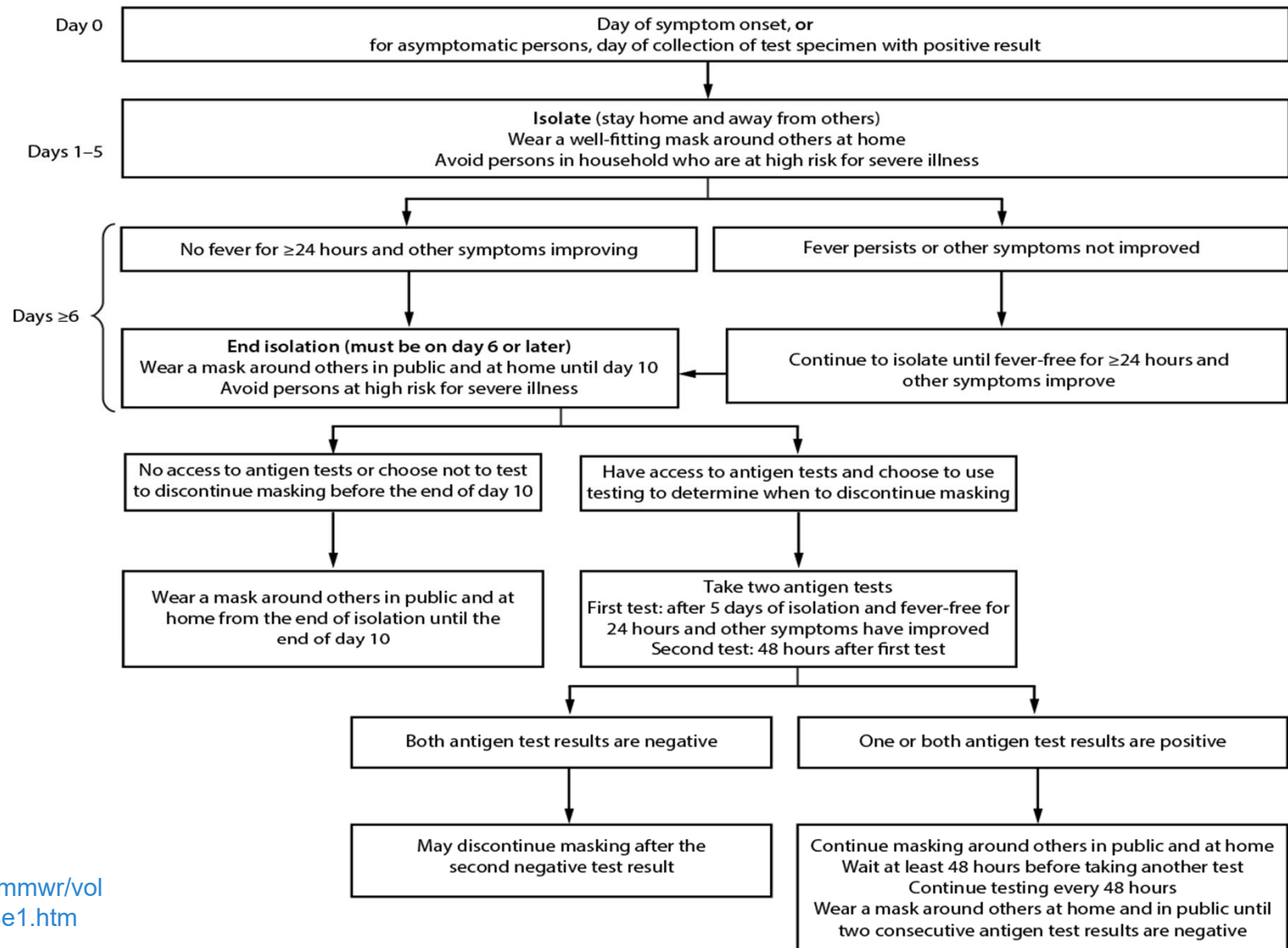
VS

KN95



Surgical





NDSU Vaccine Education Project



Sarah Swartz, MPH
NDSU Vaccine Education Project Manager
Aldevron Tower 640M

NDSU Vaccine Education Project

Goal: Increase confidence in vaccines among students, faculty, and staff

- Outreach & Education
- Vaccine education training modules
- Social media outreach
 - Immunization Ambassadors
- Campus-wide survey

NDSU Vaccine Education Project

Current planned interventions

- COVID-19 test kit distribution across campus
 - NDSU Library
 - NDSU Bookstore
 - Student Health

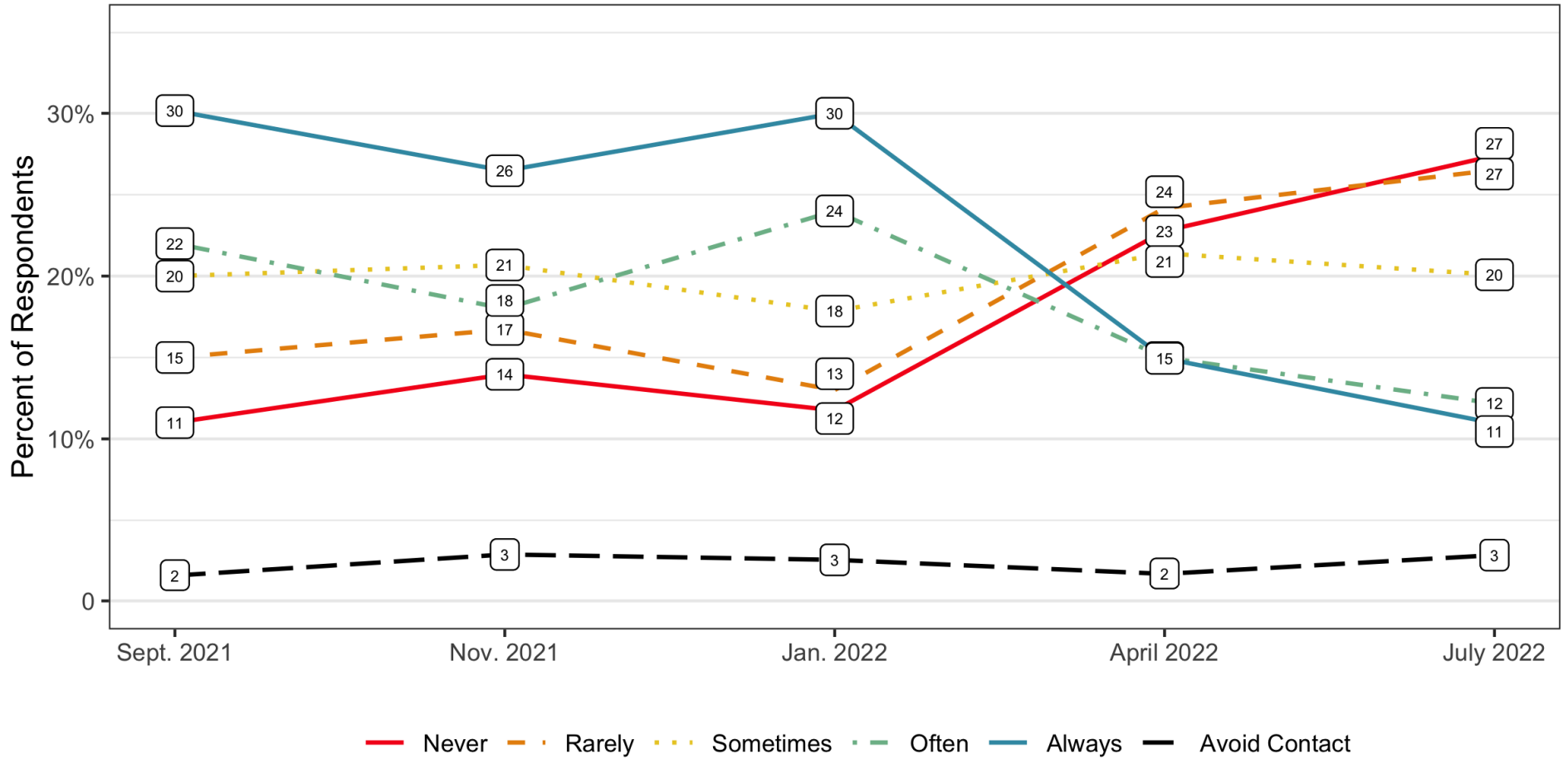
- Influenza (flu) vaccine clinic
 - Faculty and staff
 - Memorial Union
 - October 11th and 12th from 10am-2pm
 - COVID-19 boosters will be available
 - Registration link sent out a week before

ANY
QUESTIONS?

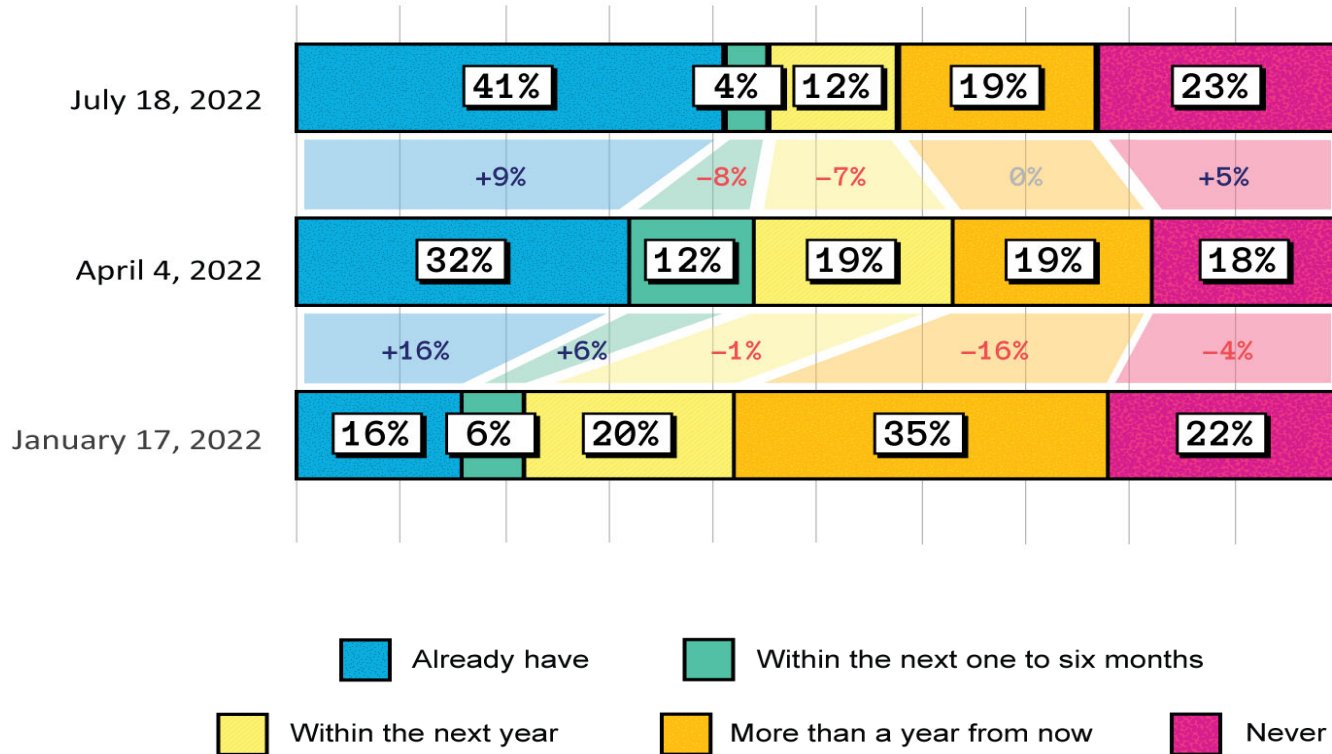


Prevalence of Mask Wearing

When in contact indoors with those who are not part of your household
how often do you wear a mask or face covering?



When do you expect to return to your normal, pre-Covid-19 life?

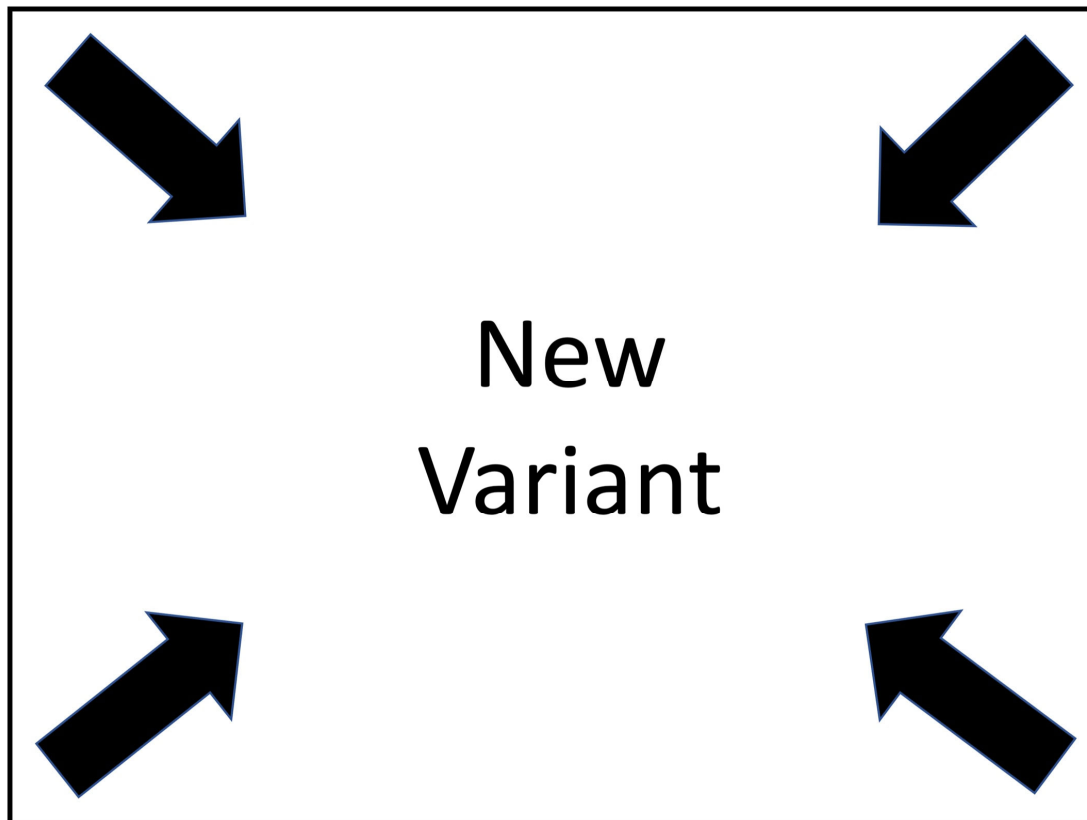


Source: Annenberg Public Policy Center ASK Survey, July 12-18, 2022
 © Annenberg Public Policy Center

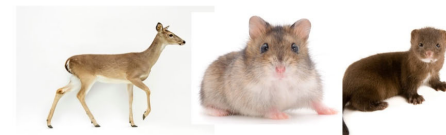
IMMUNOCOMPROMISED WHO IS MOST AT RISK?



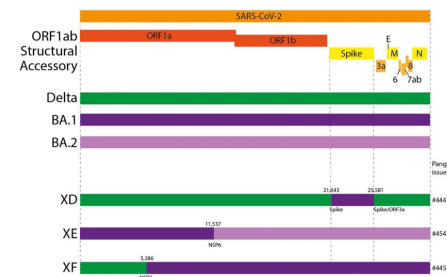
Lack of Global
Containment



Animal Reservoirs



Co-infections, Recombinants



@erictopol