

The background of the slide features a dark blue world map with several large, detailed, 3D-rendered COVID-19 virus particles scattered across it. The virus particles are spherical with prominent, irregular spikes protruding from their surfaces. The text is overlaid on this background.

# COVID-19: *Updates*

Jennifer Pisano, MD and Stephen Schrantz, MD  
University of Chicago  
May 26, 2021

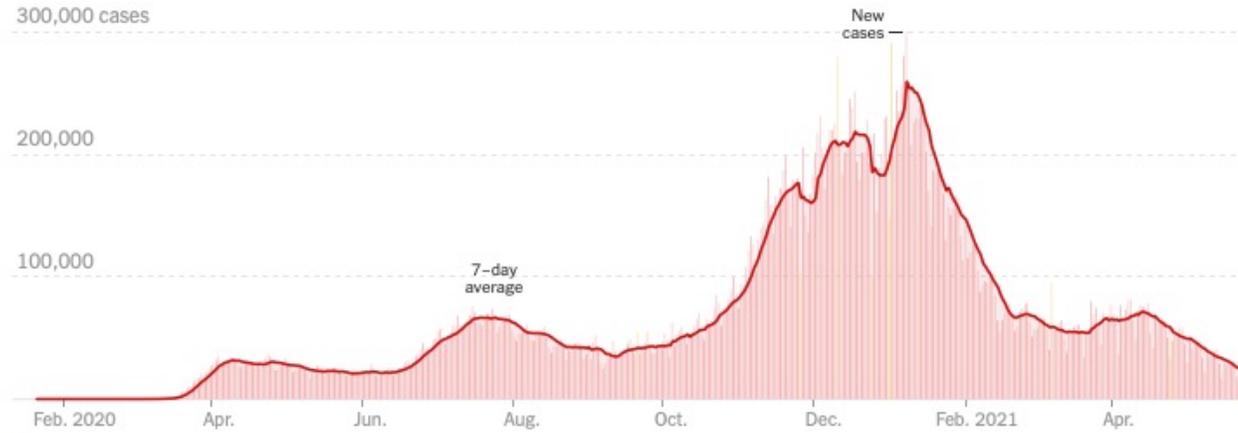
# Disclosures

- We have no relevant financial interests to disclose.

# Coronavirus in the U.S.: Latest Map and Case Count

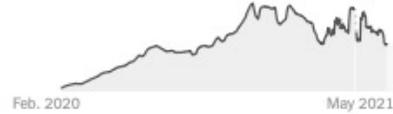
Updated May 26, 2021

## New reported cases



These are days with a reporting anomaly. Read more [here](#).

### Tests



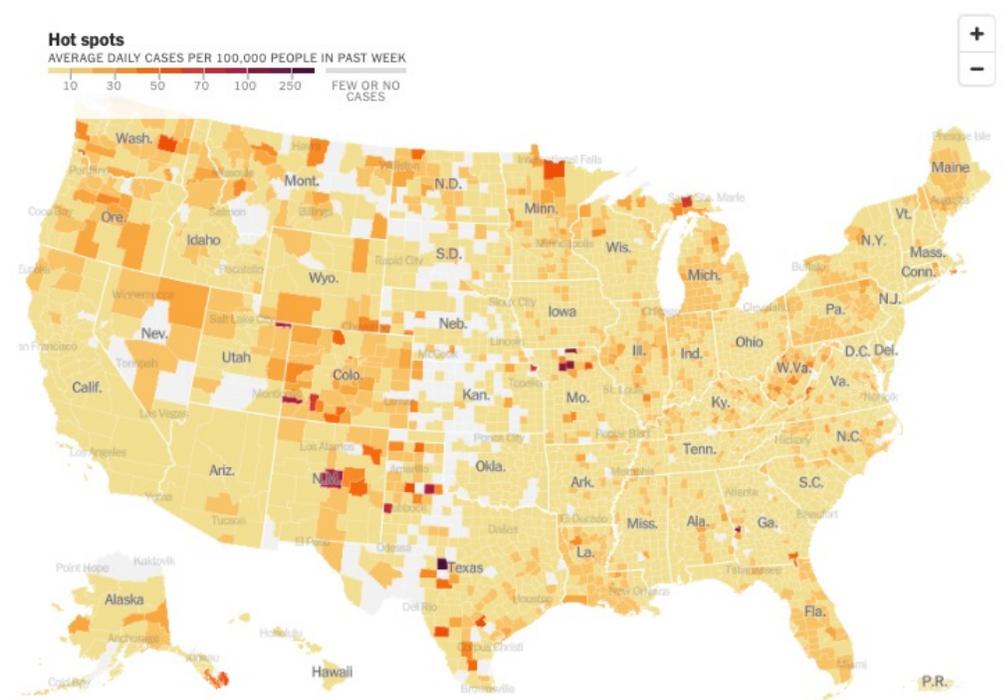
### Hospitalized



### Deaths



	AVG. ON MAY 25	14-DAY CHANGE	TOTAL REPORTED
Cases	24,034	-37%	33,186,114
Tests	937,305	—	—
Hospitalized	28,499	-23%	—
Deaths	543	-12%	590,628

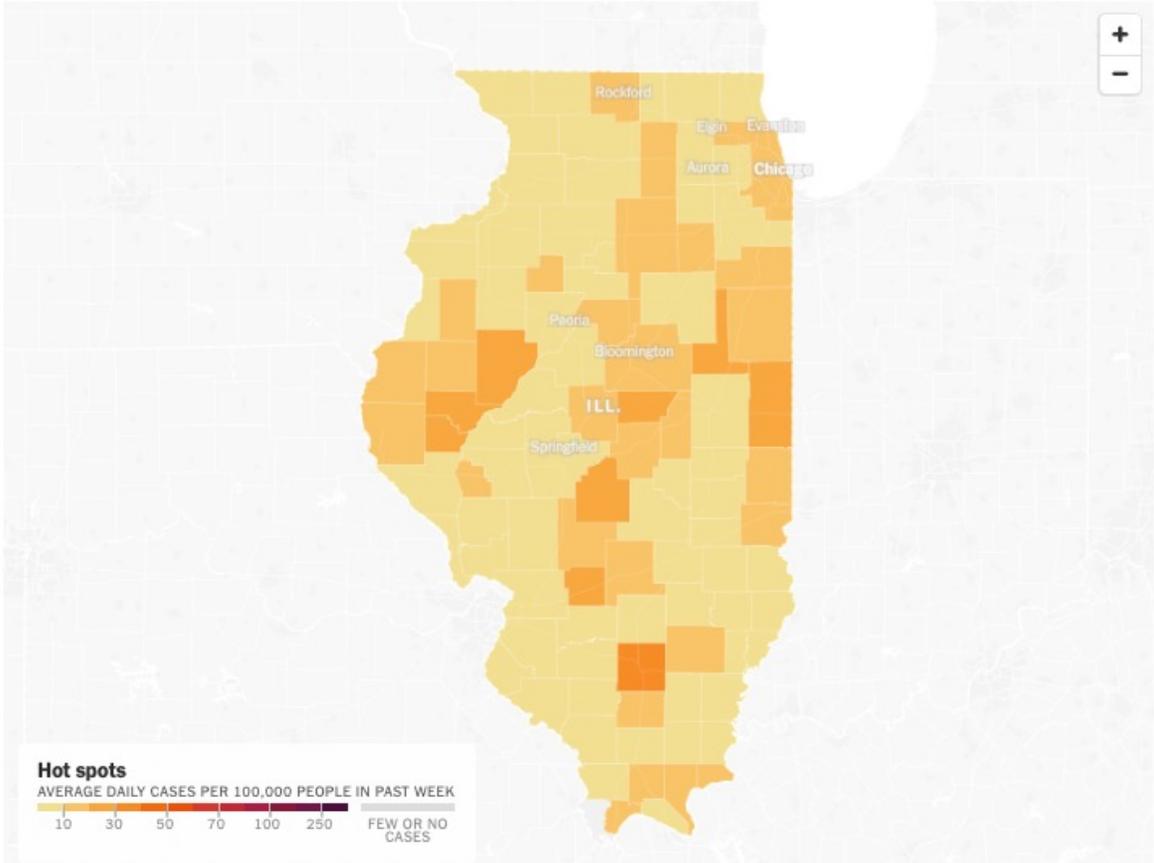
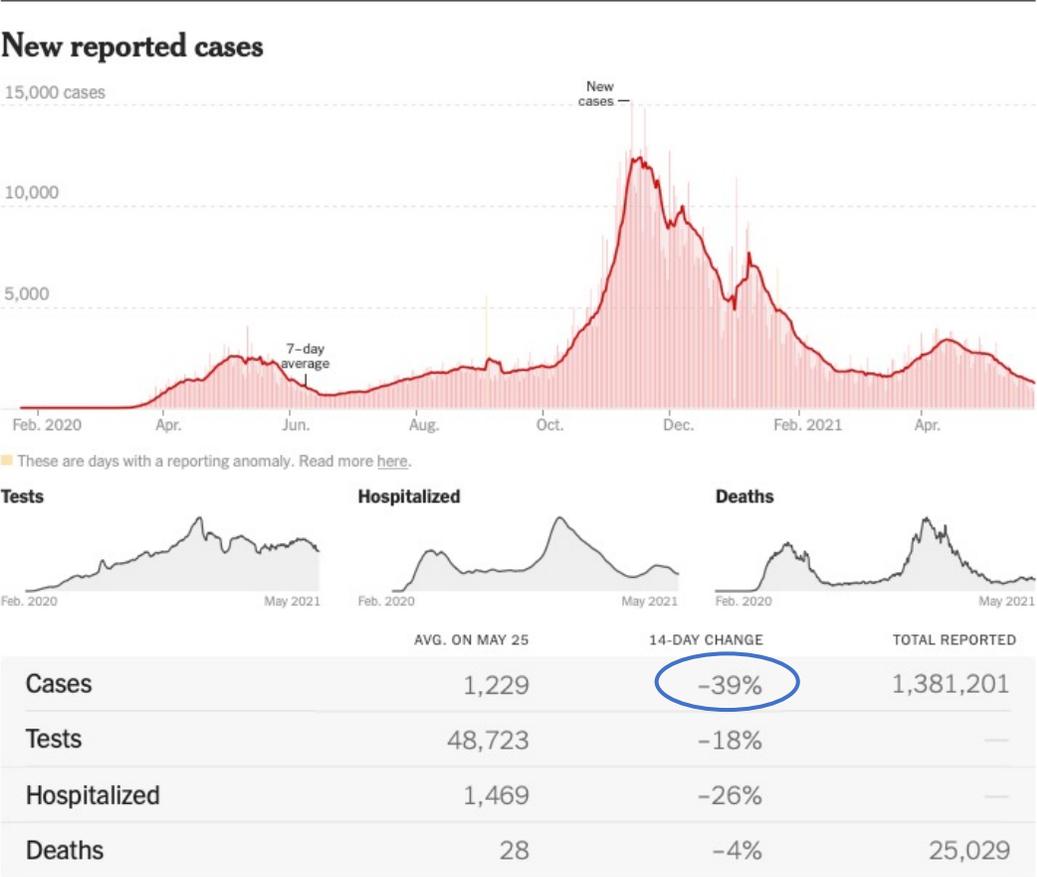


<https://www.nytimes.com/interactive/2020/us/coronavirus-us-cases.html>

# COVID-19 Cases in Illinois

## Tracking Coronavirus in Illinois: Latest Map and Case Count

Updated May 26, 2021



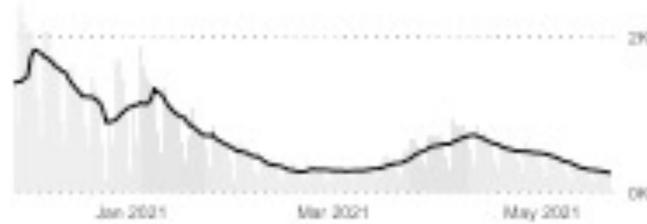
# COVID Dashboard

**CHICAGO** | COVID-19 Summary Last updated May 26, 2021  
All data are provisional and subject to change.

[SUMMARY](#) [CASES](#) [CASES BY ZIP](#) [TESTS](#) [VACCINES](#) [VACCINES BY ZIP](#) [Learn how to use this dashboard.](#)

## CASES

**249** ▼ **299 (-17%)** **283,020** **9.2**  
Current daily avg Prior week Cumulative Daily rate per 100,000



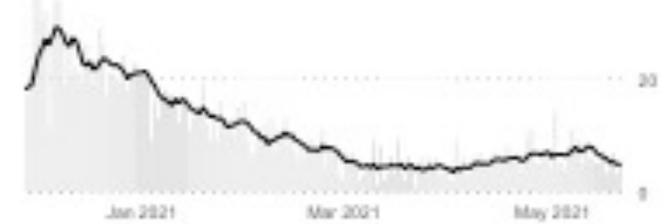
## HOSPITALIZATIONS

**12** ▼ **24 (-50%)** **28,281** **0.4**  
Current daily avg Prior week Cumulative Daily rate per 100,000



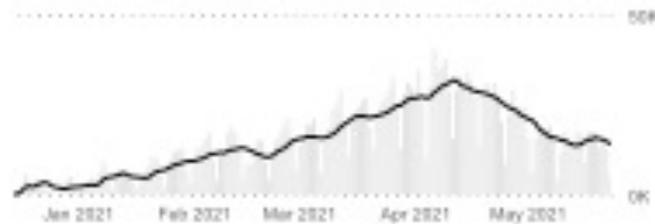
## DEATHS

**5** ▼ **7 (-29%)** **5,457** **0.2**  
Current daily avg Prior week Cumulative Daily rate per 100,000



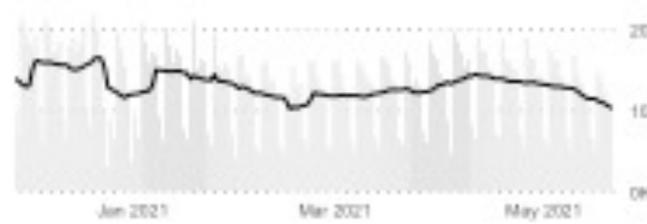
## VACCINATIONS ADMINISTERED

**14,065** ▼ **2,381,904** **40.2%** **50.6%**  
Current daily avg Cumulative Chicagoans with... Chicagoans with...



## TESTS PERFORMED

**10,229** ▼ **11,378 (-10%)** **4,234,305**  
Current daily avg Prior week Cumulative



## POSITIVITY RATE

**3.0%** ▼ **3.3%** **1 in 10**  
Current daily avg Prior week Chicagoans diagnosed





## When You've Been Fully Vaccinated

How to Protect Yourself and Others

Updated May 16, 2021

Languages ▾

Print

### Choosing Safer Activities

- [If you are fully vaccinated](#), you can resume activities that you did prior to the pandemic.
- Fully vaccinated people can resume activities without wearing a mask or physically distancing, except where required by federal, state, local, tribal, or territorial laws, rules, and regulations, including local business and workplace guidance.
- If you haven't been vaccinated yet, [find a vaccine](#).

Safer Activities



# For now, if you've been fully vaccinated:

- You will still need to follow guidance at your workplace and local businesses.
- If you [travel](#), you should still take steps to [protect yourself and others](#). You will still be [required to wear a mask](#) on planes, buses, trains, and other forms of public transportation traveling into, within, or out of the United States, and in U.S. transportation hubs such as airports and stations. Fully vaccinated [international travelers](#) arriving in the United States are still [required to get tested](#) 3 days before travel by air into the United States (or show documentation of recovery from COVID-19 in the past 3 months) and should still get tested 3-5 days after their trip.
- You should still watch out for [symptoms of COVID-19](#), especially if you've been around someone who is sick. If you have symptoms of COVID-19, you should get [tested](#) and [stay home](#) and away from others.
- People who have a condition or are taking medications that weaken the immune system, should talk to their healthcare provider to discuss their activities. They may need to keep taking all [precautions](#) to prevent COVID-19.

# What's the science the CDC used to make the decision?

- There were two key pieces of information that the CDC's recommendation is based on:
  - First, [real-world studies have shown that mRNA vaccines](#) from Pfizer and Moderna “reduce risk of infection, not just severe disease, hospitalization and death,” The vaccines are very good, but they aren't perfect. Some vaccinated people may still catch the coronavirus.
  - But even “if you are one of those individuals who gets a [rare breakthrough infection](#), your risk of transmitting [the virus] onward to other people is exceedingly low,” That's the second piece of evidence that swayed CDC's decision.

# Why did the CDC change mask recommendations?

TABLE 2. COVID-19 vaccine effectiveness among health care personnel case-patients and controls, by number of COVID-19 vaccine doses received before SARS-CoV-2 test date — 33 U.S. sites, January–March 2021



Interval from dose to test date	No. (%)		Vaccine effectiveness† % (95% CI)			
	Case-patients* (N = 623)	Controls* (N = 1,220)	Unadjusted	Adjusted <sup>§</sup>		
Dose 1						
≥14 days	64 (10)	241 (20)	82.2 (75.1–87.3)	81.7 (74.3–86.9)		
Dose 2						
≤2 days	5 (<1)	109 (9)				
3–6 days	16 (3)	85 (7)	93.4 (86.4–96.8)	93.5 (86.5–96.9)		
≥7 days	19 (3)	184 (15)				

- This multisite test-negative design case-control study found that authorized mRNA COVID-19 vaccines are highly effective against symptomatic COVID-19 among HCP. Effectiveness of a complete 2-dose regimen of these vaccines was estimated to be 94%,
- The results are also consistent with findings from an observational study among the general adult population from Israel, two cohort studies among HCP from the United Kingdom, and recently reported interim results from a U.S. cohort evaluation among HCP and frontline workers

“This report provided the most compelling information to date that COVID-19 vaccines were performing as expected in the real world,” said CDC Director Rochelle P. Walensky, MD, MPH.

# Why did the CDC change mask recommendations?

**Table 1. Vaccine Effectiveness against Infection and against Disease in Qatar.**

Type of Infection or Disease	PCR-Positive Persons		PCR-Negative Persons		Effectiveness (95% CI)*
	Vaccinated	Unvaccinated	Vaccinated	Unvaccinated	
	<i>number of persons</i>				<i>percent</i>
<b>Infection</b>					
PCR-confirmed infection with the B.1.1.7 variant†					
After one dose	892	18,075	1241	17,726	29.5 (22.9–35.5)
≥14 days after second dose	50	16,354	465	15,939	89.5 (85.9–92.3)
PCR-confirmed infection with the B.1.351 variant‡					
After one dose	1329	20,177	1580	19,926	16.9 (10.4–23.0)
≥14 days after second dose	179	19,396	698	18,877	75.0 (70.5–78.9)
<b>Disease§</b>					
Severe, critical, or fatal disease caused by the B.1.1.7 variant					
After one dose	30	468	61	437	54.1 (26.1–71.9)
≥14 days after second dose	0	401	20	381	100.0 (81.7–100.0)
Severe, critical, or fatal disease caused by the B.1.351 variant					
After one dose	45	348	35	358	0.0 (0.0–19.0)
≥14 days after second dose	0	300	14	286	100.0 (73.7–100.0)
Severe, critical, or fatal disease caused by any SARS-CoV-2					
After one dose	139	1,966	220	1,885	39.4 (24.0–51.8)
≥14 days after second dose	3	1,692	109	1,586	97.4 (92.2–99.5)

- The BNT162b2 vaccine was effective against infection and disease in the population of Qatar, despite the B.1.1.7 and B.1.351 variants being predominant within the country
- Reported in the clinical trials and in real-world conditions in Israel and the United States
- The reduced protection against infection with the B.1.351 variant did not seem to translate into poor protection against the most severe forms of infection

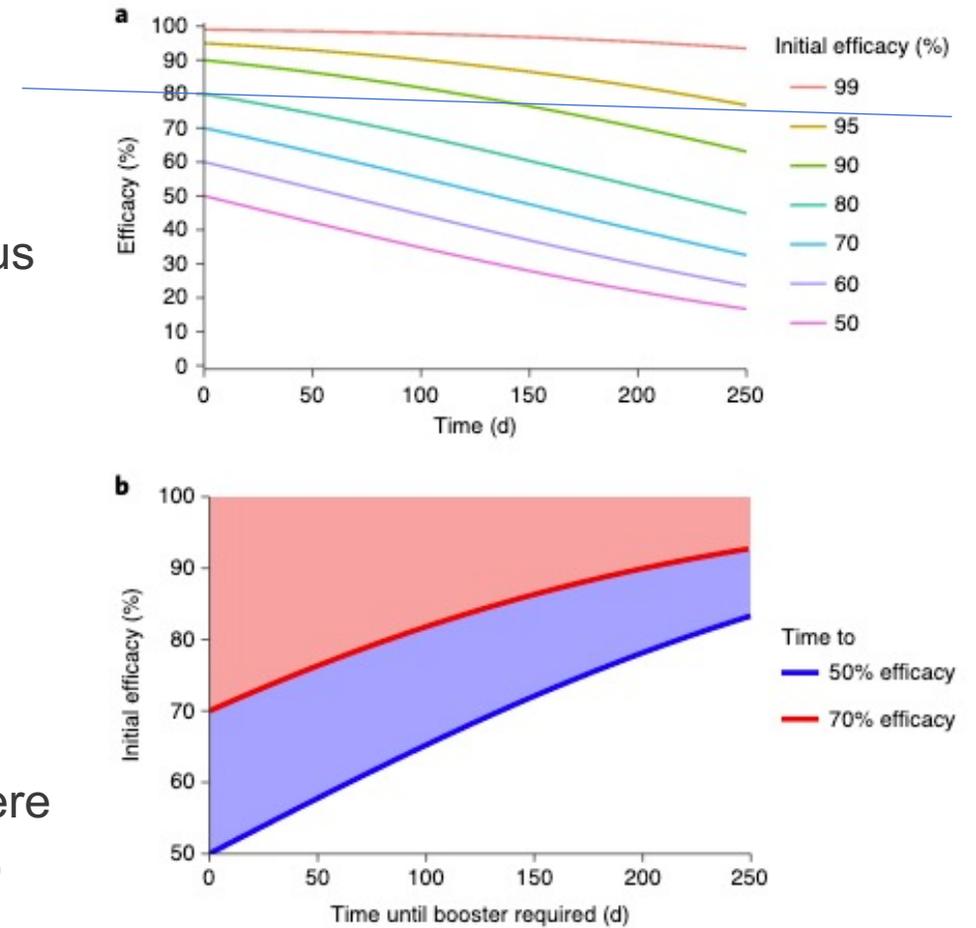


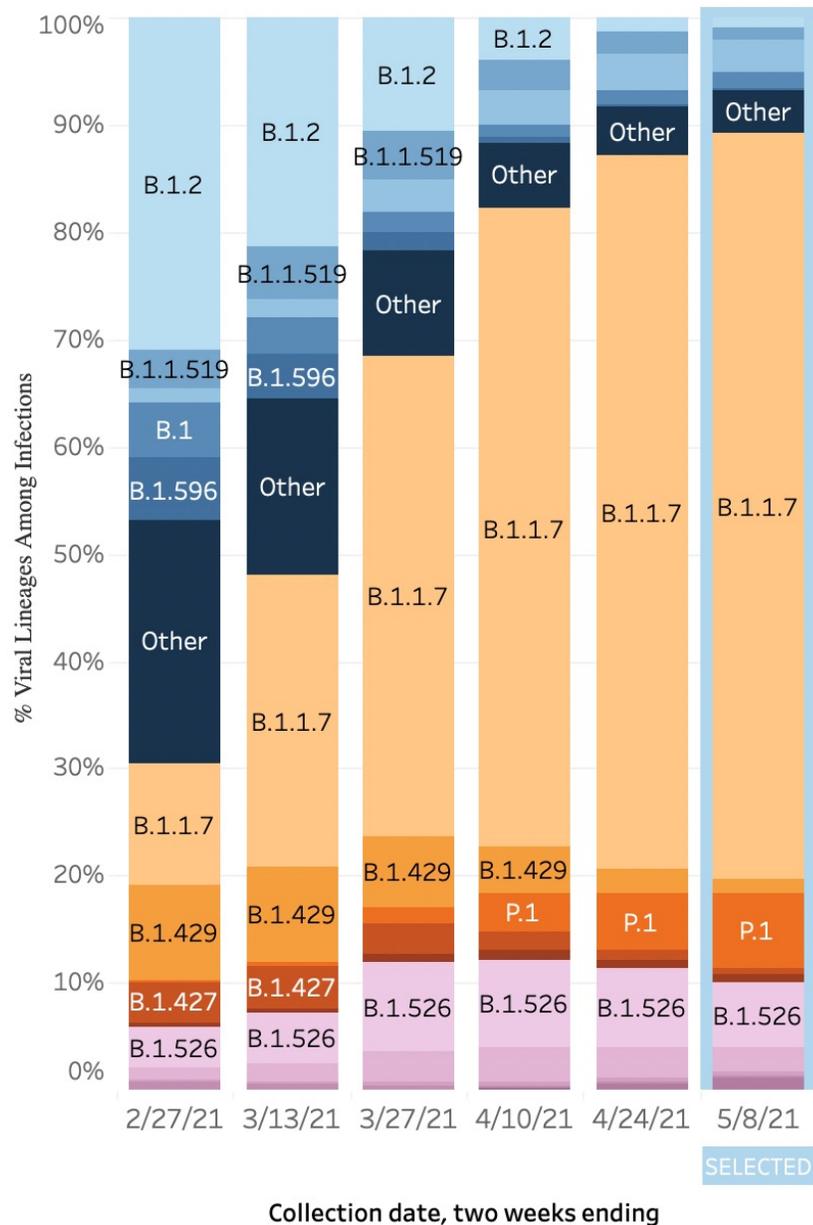
# Neutralizing antibody levels are highly predictive of immune protection from symptomatic SARS-CoV-2 infection

David S. Khoury<sup>1,9</sup>, Deborah Cromer<sup>1,9</sup>, Arnold Reynaldi<sup>1</sup>, Timothy E. Schlub<sup>1,2</sup>, Adam K. Wheatley<sup>3</sup>, Jennifer A. Juno<sup>3</sup>, Kanta Subbarao<sup>3,4</sup>, Stephen J. Kent<sup>3,5,6</sup>, James A. Triccas<sup>7,8</sup> and Miles P. Davenport<sup>1</sup>✉

- Predictive modeling data analyzing the relationship between in vitro neutralization levels and observed protection from SARS-CoV-2 virus
- Compared neutralization titers across seven vaccine studies to determine the mean and SD of neutralization titer
  - Then compared this normalized neutralization level against the corresponding protective efficacy reported from the seven phase 3 clinical trials
- Decay of vaccine-induced neutralization is similar to that observed after natural infection
- The 50% protective neutralization level of anti-SARS-CoV-2 antibodies was estimated to be 20.2% of the mean convalescent level (95% CI=14.4-28.4%)
- Estimated neutralization level required for 50% protection from severe infection was 3% of the mean convalescent level; 95% CI=0.7-13%,  $p=.0004$ .

Modeling of decay of the neutralization titer over the first 250 days after immunization predicts that a significant loss in protection from SARS-CoV-2 will occur, **although protection from severe disease should be largely retained.**





**USA**

	Lineage	Type	%Total	95%CI	
Most common lineages	B.1.1.7	VOC	69.7%	66.8-72.5%	<span style="color: orange;">■</span>
	P.1	VOC	6.8%	5.1-9.2%	<span style="color: darkorange;">■</span>
	B.1.526	VOI	6.0%	4.6-7.8%	<span style="color: pink;">■</span>
	B.1.526.2		3.0%	2.3-3.9%	<span style="color: lightblue;">■</span>
	B.1.526.1	VOI	2.3%	1.8-3.1%	<span style="color: purple;">■</span>
	B.1		1.4%	1.1-1.8%	<span style="color: blue;">■</span>
	B.1.429	VOC	1.3%	0.8-2.1%	<span style="color: orange;">■</span>
	B.1.617.2	VOI	1.3%	1.0-1.7%	<span style="color: purple;">■</span>
	B.1.1.519		1.2%	0.9-1.8%	<span style="color: blue;">■</span>
	B.1.2		0.9%	0.6-1.2%	<span style="color: lightblue;">■</span>
Additional VOI/VOC lineages	B.1.596		0.1%	0.0-0.2%	<span style="color: darkblue;">■</span>
	B.1.351	VOC	0.8%	0.6-1.1%	<span style="color: brown;">■</span>
	B.1.427	VOC	0.7%	0.4-1.0%	<span style="color: orange;">■</span>
	B.1.525	VOI	0.3%	0.2-0.5%	<span style="color: pink;">■</span>
	B.1.617.1	VOI	0.1%	0.0-0.1%	<span style="color: purple;">■</span>
	P.2	† VOI	0.0%	0.0-0.0%	<span style="color: purple;">■</span>
	B.1.617	† VOI	0.0%	NA	<span style="color: purple;">■</span>
	B.1.617.3	† VOI	0.0%	NA	<span style="color: purple;">■</span>
Other*	Other		4.1%	3.5-4.8%	<span style="color: darkblue;">■</span>

\* Other represents >200 additional lineages, which are each circulating at <1% of viruses  
 † Fewer than 10 observations of this variant during the selected time/location context

# What we are still learning

- How effective vaccines are against the variants
- How well vaccines work to protect people with weakened immune systems
- How long the COVID-19 vaccines will protect you
- If the updated CDC mask guidance will encourage others to get vaccinated who have not yet

## Examples of Outdoor Activities



## Examples of Indoor Activities



Unvaccinated People	Example Activities	Fully Vaccinated People
 Safest	Walk, run, wheelchair roll, or bike outdoors with members of your household	 Safest
 Safest	Attend a small, outdoor gathering with fully vaccinated family and friends	 Safest
 Safest	Attend a small, outdoor gathering with fully vaccinated and unvaccinated people	 Safest
 Less Safe	Dine at an outdoor restaurant with friends from multiple households	 Safest
 Least Safe	Attend a crowded, outdoor event, like a live performance, parade, or sports event	 Safest

Unvaccinated People	Example Activities	Fully Vaccinated People
 Less Safe	Visit a barber or hair salon	 Safest
 Less Safe	Go to an uncrowded, indoor shopping center or museum	 Safest
 Less Safe	Attend a small, indoor gathering of fully vaccinated and unvaccinated people from multiple households	 Safest
 Least Safe	Go to an indoor movie theater	 Safest
 Least Safe	Attend a full-capacity worship service	 Safest
 Least Safe	Sing in an indoor chorus	 Safest
 Least Safe	Eat at an indoor restaurant or bar	 Safest
 Least Safe	Participate in an indoor, high intensity exercise class	 Safest

But what if I am at higher risk of severe illness and vaccinated?  
But what if I live with someone who is at higher risk of severe illness?

## Consider the Level of Risk

In general, the more people you interact with, the more closely you interact with them, and the longer that interaction, **the higher your risk** of getting and spreading the virus that causes COVID-19.

Before you go out, consider the following:

- How many people will you interact with?
- Can you keep 6 feet of space between you and others?
- Will you be outdoors or indoors?
- What's the length of time that you will be interacting with people?
- How likely is it that people will be wearing a mask?

IS SARS-CoV-2 spreading in my community?

**Consider avoiding activities where taking protective measures may be difficult**, such as activities where social distancing can't be maintained.

# Multisystem Inflammatory Syndrome in Adults (MIS-A)

## Case Definition for MIS-A

A patient aged  $\geq 21$  years hospitalized for  $\geq 24$  hours, or with an illness resulting in death, who meets the following clinical and laboratory criteria. The patient should not have a more likely alternative diagnosis for the illness (e.g., bacterial sepsis, exacerbation of a chronic medical condition).

### I. Clinical Criteria

Subjective fever or documented fever ( $\geq 38.0$  C) for  $\geq 24$  hours prior to hospitalization or within the first THREE days of hospitalization\* and at least THREE of the following clinical criteria occurring prior to hospitalization or within the first THREE days of hospitalization\*. At least ONE must be a primary clinical criterion.

#### A. Primary clinical criteria

##### 1. Severe cardiac illness

*Includes myocarditis, pericarditis, coronary artery dilatation/aneurysm, or new-onset right or left ventricular dysfunction (LVEF<50%), 2nd/3rd degree A-V block, or ventricular tachycardia. (Note: cardiac arrest alone does not meet this criterion)*

##### 2. Rash AND non-purulent conjunctivitis

#### B. Secondary clinical criteria

##### 1. New-onset neurologic signs and symptoms

*Includes encephalopathy in a patient without prior cognitive impairment, seizures, meningeal signs, or peripheral neuropathy (including Guillain-Barré syndrome)*

##### 2. Shock or hypotension not attributable to medical therapy (e.g., sedation, renal replacement therapy)

##### 3. Abdominal pain, vomiting, or diarrhea

##### 4. Thrombocytopenia (platelet count $< 150,000$ / microliter)

### II. Laboratory evidence

The presence of laboratory evidence of inflammation AND SARS-CoV-2 infection.

A. Elevated levels of at least TWO of the following: C-reactive protein, ferritin, IL-6, erythrocyte sedimentation rate, procalcitonin

B. A positive SARS-CoV-2 test during the current illness by RT-PCR, serology, or antigen detection

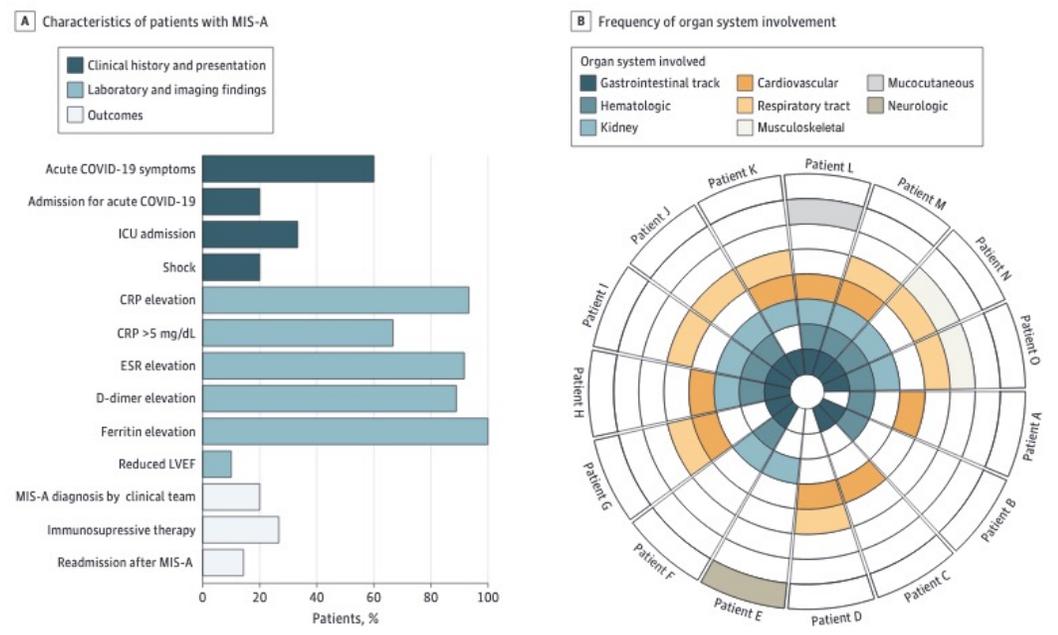
**NOTE:** \*These criteria must be met by the end of hospital day 3, where the date of hospital admission is hospital day 0.

# Characteristics Associated With Multisystem Inflammatory Syndrome Among Adults With SARS-CoV-2 Infection

Giovanni E. Davogustto, MD; Daniel E. Clark, MD, MPH; Edward Hardison, MD; Ahmad H. Yanis, MD; Brandon D. Lowary, BS; Natasha B. Halasa, MD, MPH; Quinn S. Wells, MD, PharmD, MSCI

- Single-center retrospective cohort study
- 15 patients during study time frame met criteria for MIS-A were compared to 683 hospitalized COVID-19 patients without MIS-A
- MIS-A patients were younger, more likely to have antibodies
- 33% admitted to ICU
- Median number of organ systems involved =4

Figure. Clinical Presentation and Organ Involvement of Patients Identified With Multisystem Inflammatory Syndrome in Adults (MIS-A)



A, Data were available for left ventricular ejection fraction (LVEF) from 10 patients, for erythrocyte sedimentation rate (ESR) from 12, for D-dimer level from 9; and for ferritin level from 8. To convert C-reactive protein (CRP) level from milligrams per deciliter to milligrams per liter, multiply by 10. B, Each wedge represents a single patient, and each concentric ring represents an organ system, organized from inside out by frequency of involvement. ICU indicates intensive care unit.

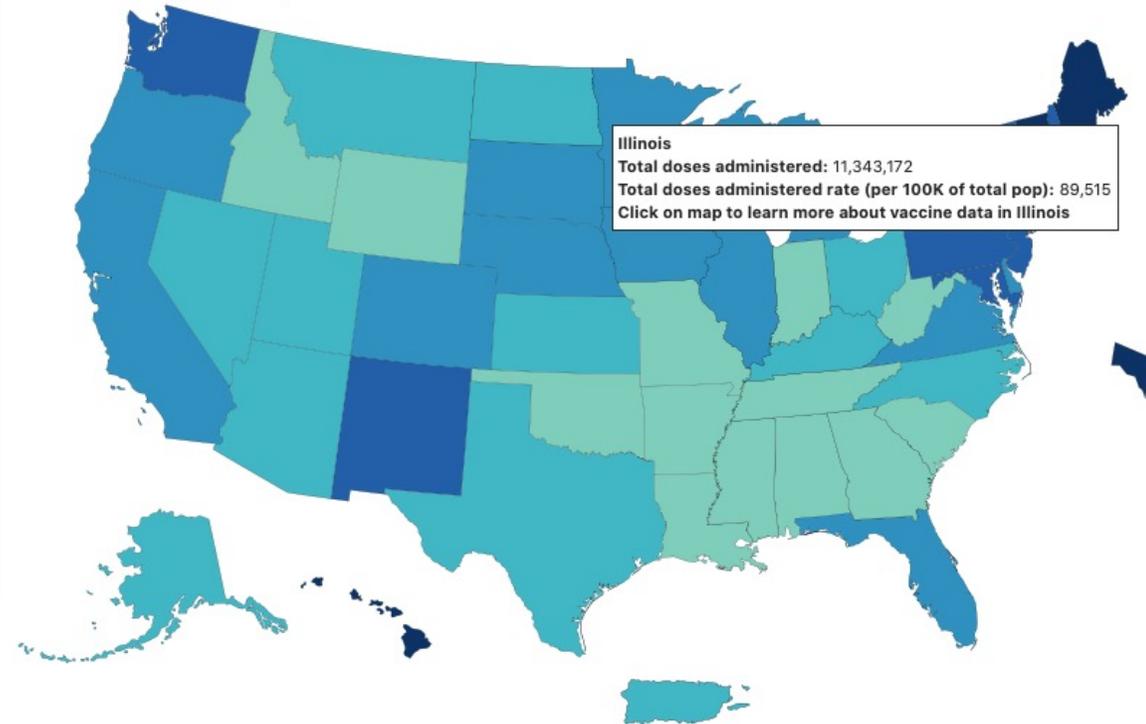
### Study working definition:

- Hospital admission in age >21 with positive COVID-19 test within 12 weeks
- Severe dysfunction of at least one non-lung organ system (eg. Low blood pressure, shock, cardiac abnormalities, arterial or venous blood clots, thromboembolism, liver damage)
- Test results indicated severe inflammation (e.g. CRP)
- **The absence of severe respiratory disease**

# Vaccination numbers continue to increase!



Total Doses Administered Reported to the CDC by State/Territory and for Select Federal Entities per 100,000 of the Total Population



**Illinois**  
 Total doses administered: 11,343,172  
 Total doses administered rate (per 100K of total pop): 89,515  
 Click on map to learn more about vaccine data in Illinois

People Vaccinated	At Least One Dose	Fully Vaccinated
Total	164,378,258	131,078,608
% of Total Population	49.5%	39.5%
Population ≥ 12 Years of Age	164,272,277	131,070,055
% of Population ≥ 12 Years of Age	58.6%	46.8%
Population ≥ 18 Years of Age	158,954,785	129,054,480
% of Population ≥ 18 Years of Age	61.6%	50%
Population ≥ 65 Years of Age	46,674,798	40,443,453
% of Population ≥ 65 Years of Age	85.3%	73.9%

**Total Vaccine Doses**  
 Delivered 359,004,955  
 Administered 287,788,872

Learn more about the distribution of vaccines.

About these data

CDC | Data as of: May 25, 2021 6:00am ET. Posted: Tuesday, May 25, 2021 2:18 PM ET

# Renewed look at global vaccine distribution

More than 75% of vaccines have been distributed in 10 countries

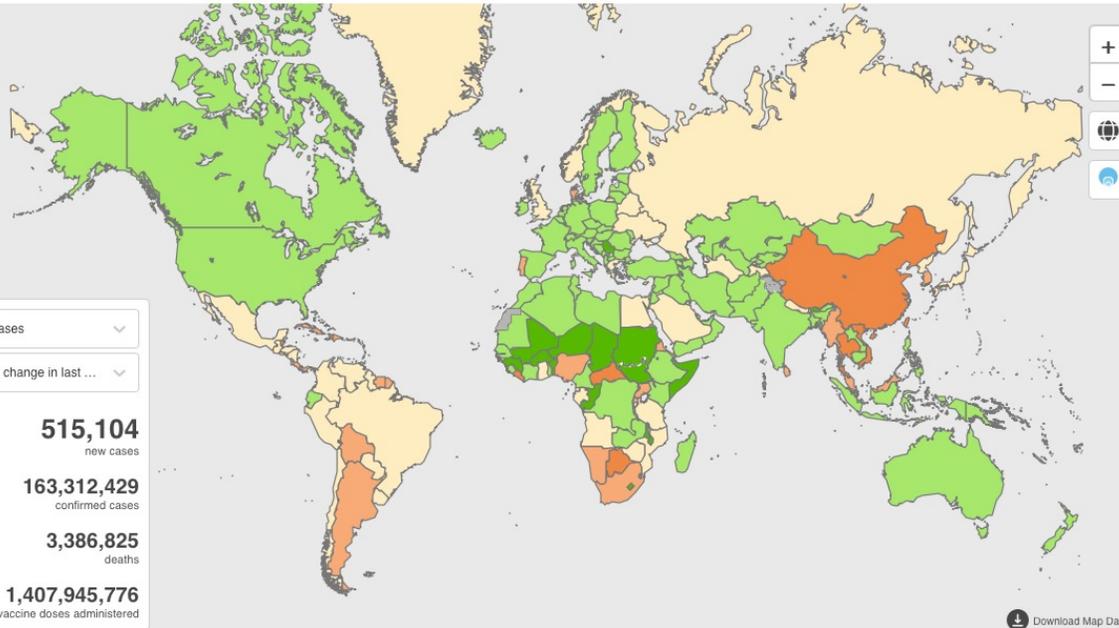


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## WHO Coronavirus (COVID-19) Dashboard

[Overview](#)
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Globally, as of 4:08pm CEST, 18 May 2021, there have been 163,312,429 confirmed cases of COVID-19, including 3,386,825 deaths, reported to WHO. As of 18 May 2021, a total of 1,407,945,776 vaccine doses have been administered.

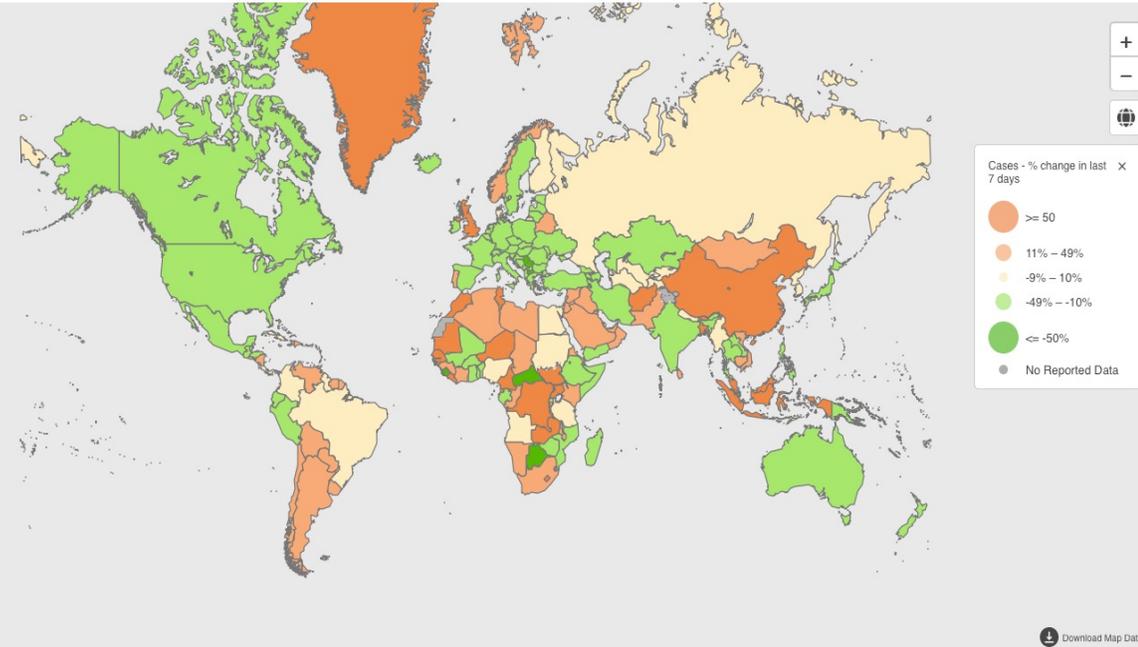


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Globally, as of 4:48pm CEST, 26 May 2021, there have been 167,492,769 confirmed cases of COVID-19, including 3,482,907 deaths, reported to WHO. As of 26 May 2021, a total of 1,491,041,497 vaccine doses have been administered.

# Who Makes Up The Vaccine Hesitant?

## In the United States overall...

8% are **Watchful**. They're waiting to see what happens next.



9% are **Cost-Anxious**. They want the vaccine but can't afford the time or cost.



4% are **System Distrusters**. They feel the health care system doesn't treat them fairly.



14% are **Covid Skeptics**. They don't believe the threat.



## In Illinois...

9% are **Watchful**. They're waiting to see what happens next.



7% are **Cost-Anxious**. They want the vaccine but can't afford the time or cost.



4% are **System Distrusters**. They feel the health care system doesn't treat them fairly.

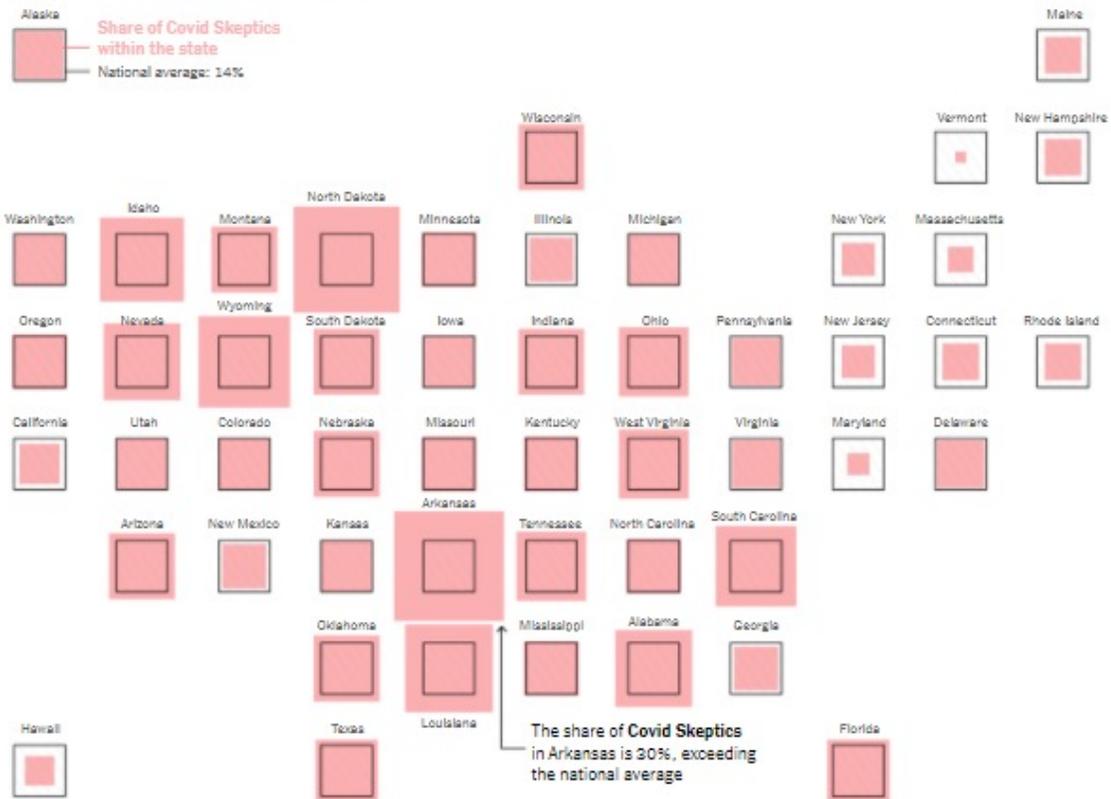


12% are **Covid Skeptics**. They don't believe the threat.

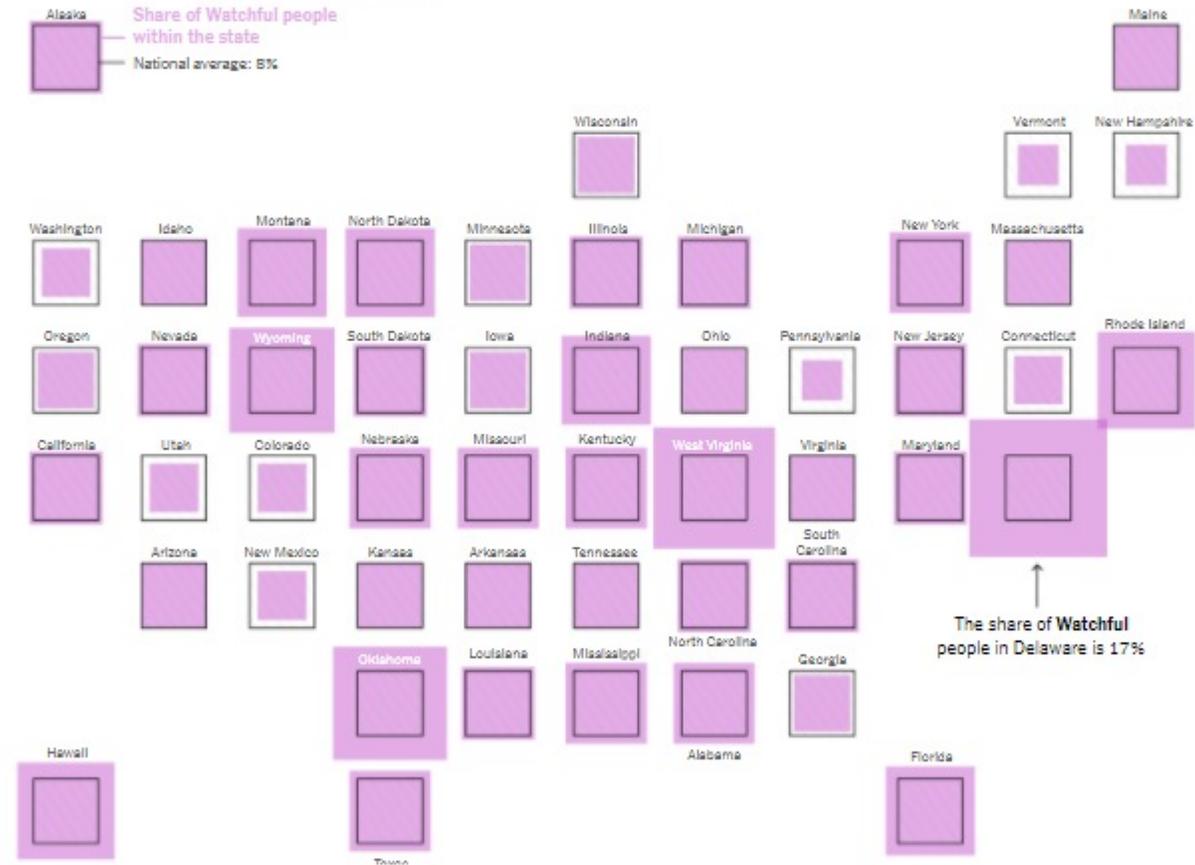


# Who Makes Up The Vaccine Hesitant?

## Covid Skeptics



## The Watchful



# Vaccine Hesitancy

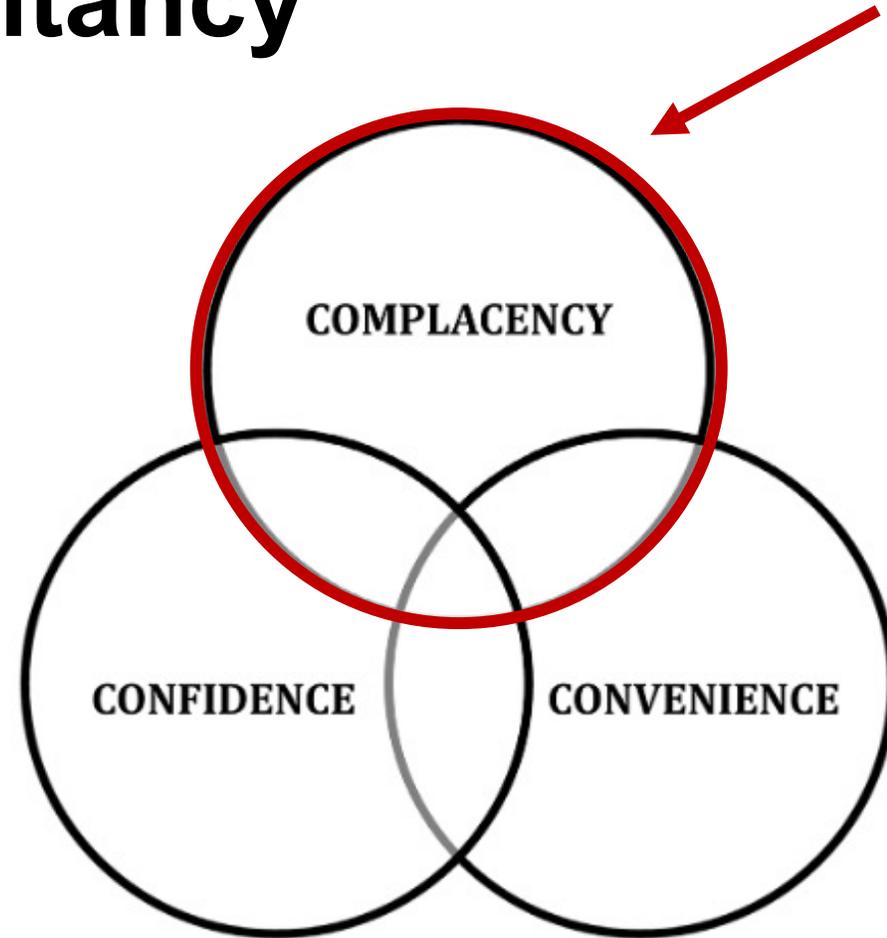
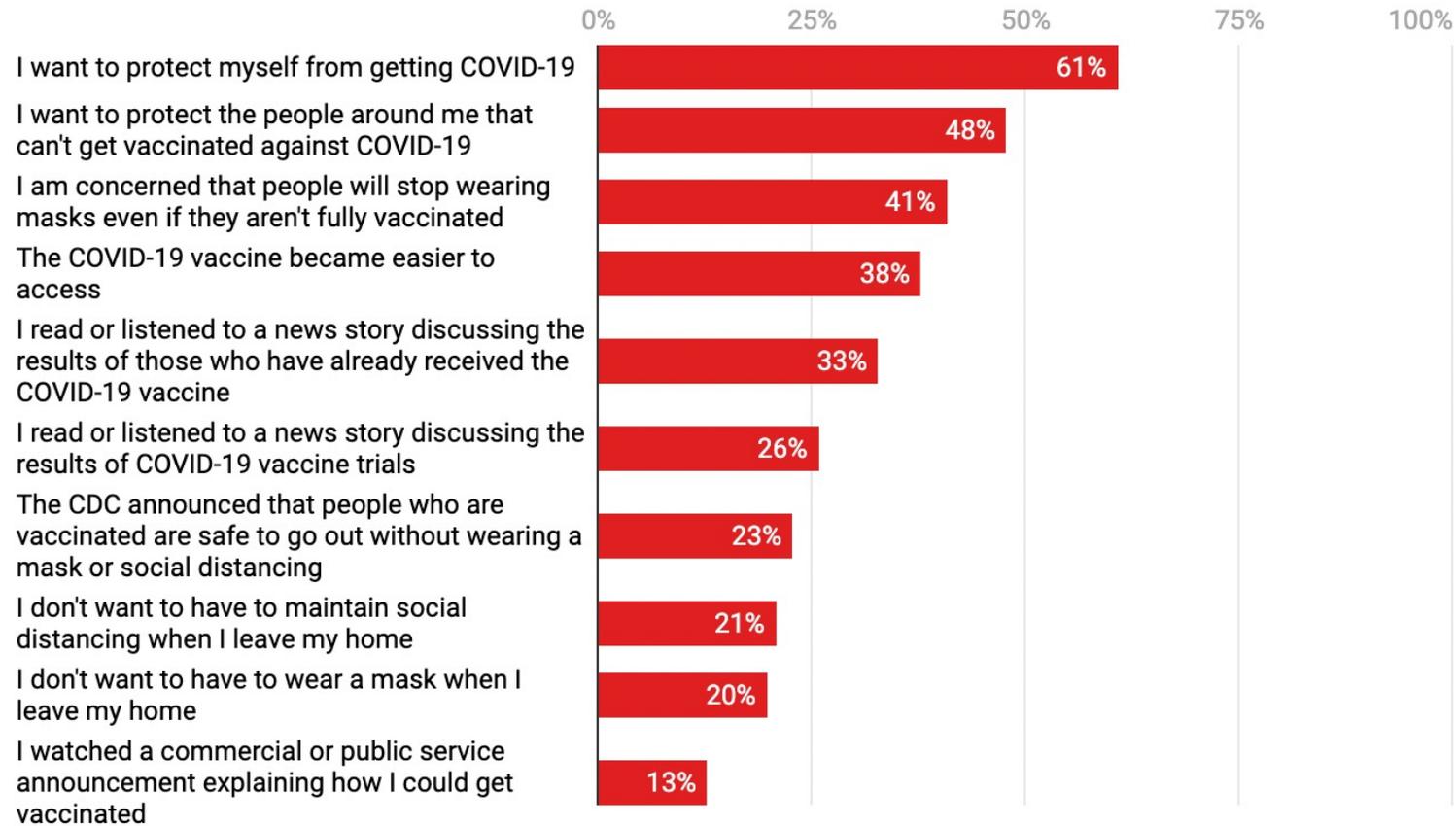


Fig. 2. "Three Cs" model of vaccine hesitancy.

# What's motivating Americans to get vaccinated?

Among those who have recently been vaccinated or plan to be vaccinated soon



Survey conducted May 18-19 among 1,075 U.S. adults ages 18 and older

Chart: Alex Fitzpatrick • Source: TIME/Harris Poll

TIME

- “Among respondents who were either vaccinated in the seven days ahead of Harris’ research or who said they planned to get vaccinated in the near future, 23% said that the CDC’s new mask policy encouraged them to get a shot. That’s a positive, if not massive, effect. But the data also reveal an arguably more interesting finding: among the same group, 41% said they got or plan to get vaccinated at least in part because they’re worried about being around maskless unvaccinated people.”

# 45yoF with vaccine reaction

- 45yo woman with hx of recurrent EBV and VZV, hx of heroin abuse in her 20s
- Received 2<sup>nd</sup> dose of Moderna vax on a Monday, had 1-2 d of sore arm, fatigue and muscle aches which improved
- Friday (day 5) she started having a rash at the vaccine site that spread over the next few days across her chest, to other arm, down torso, to upper legs, sparing breast area. Maculopapular vs mildly vesicular, but no frank vesicles with drainage or crusting.
- Has tried Benadryl with no effect

Rash on day 8:



Rash on day 8:



# Questions:

- Could this be related to her shingles?
- Could this be HSV?
  
- I started prednisone for possible id reaction
- I am calling back in for HSV/VZV culture and to get further history on the HSV/VZV– only VZV documented in her chart, but has she had HSV as well?

April 1, 2021

N Engl J Med 2021; 384:1273-1277

DOI: 10.1056/NEJMc2102131

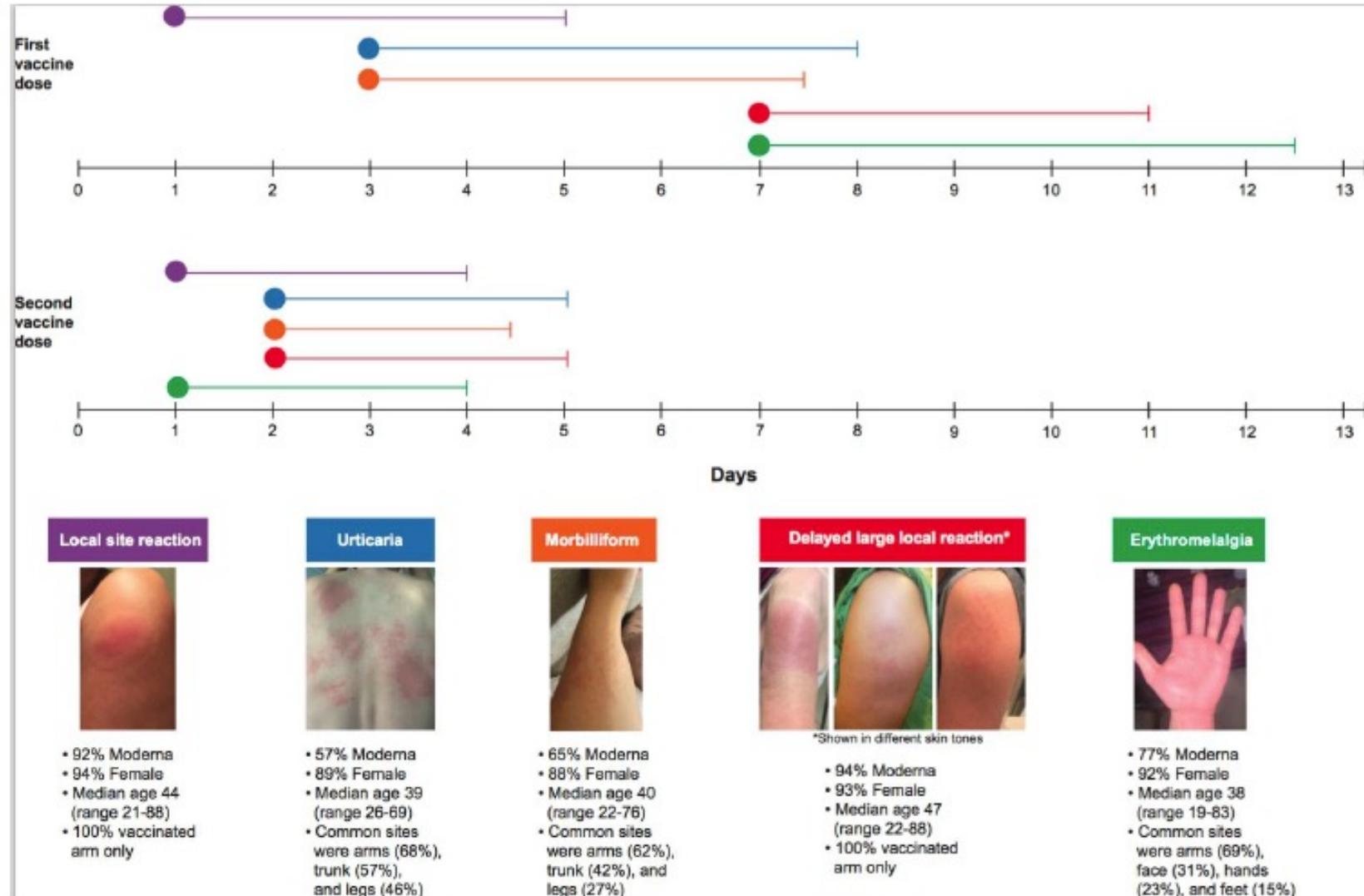
Blumenthal et al.

# Delayed Large Local Reactions to mRNA-1273 Vaccine against SARS-CoV-2

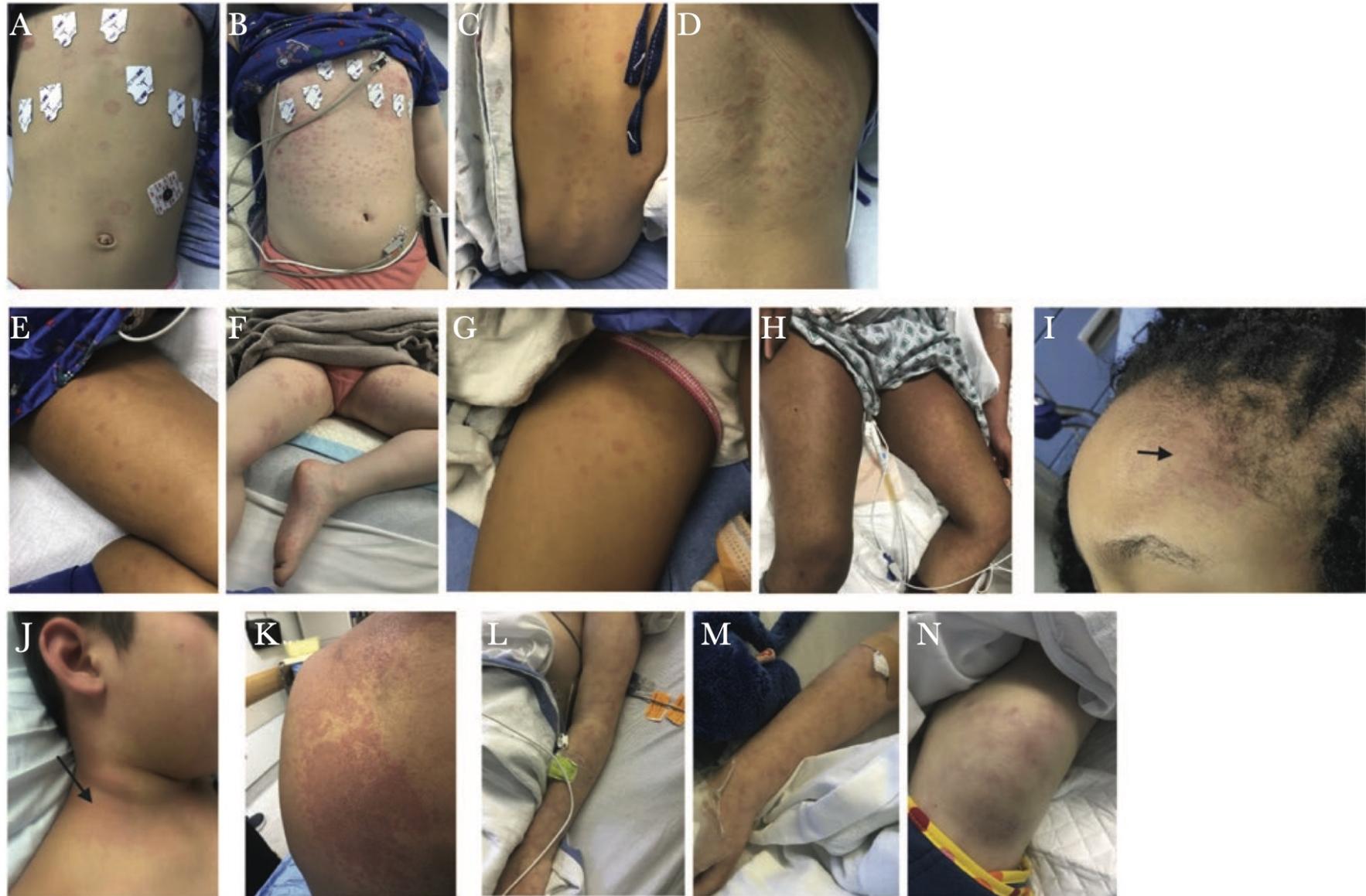
- mRNA-1273 (Moderna) vaccine trials reported delayed injection site reactions in 0.8% of patients after the first dose and 0.2% after the 2<sup>nd</sup> dose
- Case series of 12 patients
- Suspicion of delayed-type or T-cell mediated hypersensitivity reaction
- Not a contraindication to subsequent vaccination
- Variable recurrence



**Figure 1:** Timeline representing the time to onset and duration of the top five most common dermatologic findings reported after the Moderna and Pfizer COVID-19 vaccines. Circles represent median time to onset of the cutaneous reaction and lines represent median duration of the cutaneous reaction. See Supplemental Table 1 for detailed information about timing of vaccine reactions.



McMahon DE, Amerson E, Rosenbach M, Lipoff JB, Moustafa D, Tyagi A, Desai SR, French LE, Lim HW, Thiers BH, Hruza GJ, Blumenthal K, Fox LP, Freeman EE, Cutaneous Reactions Reported after Moderna and Pfizer COVID-19 Vaccination: A Registry-Based Study of 414 Cases, Journal of the American Academy of Dermatology (2021), doi: <https://doi.org/10.1016/j.jaad.2021.03.092>.



**Figure 1.** Characteristic cutaneous findings in pediatric multisystem inflammatory syndrome in children. Arrows indicate regions of erythema.