

A large, detailed 3D rendering of a coronavirus particle, showing its characteristic spherical shape and numerous spike-like protrusions. The particle is rendered in shades of red and orange, with a textured surface. It is positioned on the left side of the slide, partially overlapping the text.

# COVID-19 Update

Dr Mark Cunningham-Hill  
Medical Director NEBGH

Monday July 26<sup>th</sup>, 2021



The Delta Variant

# Daily new confirmed COVID-19 cases per million people

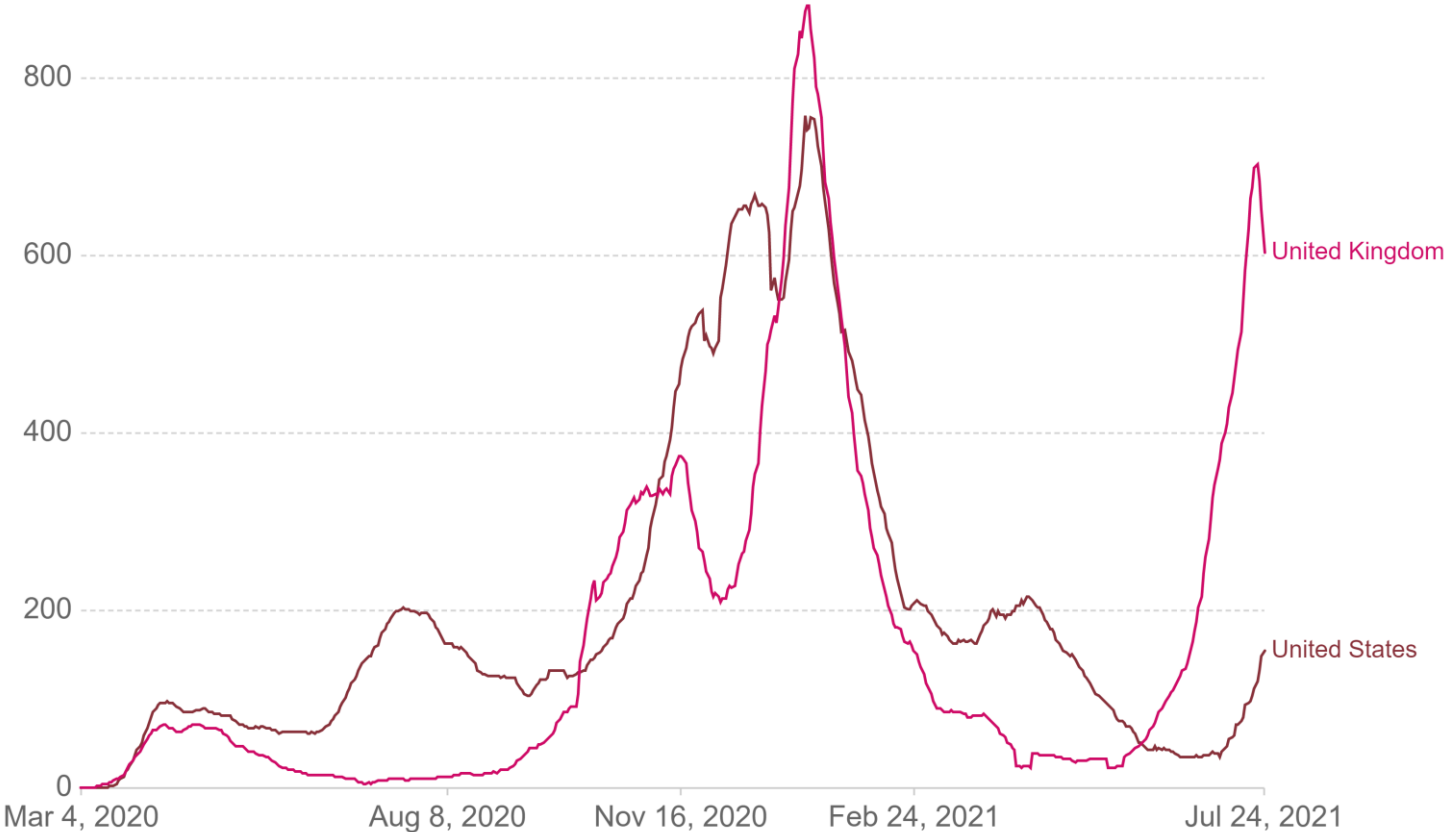
Shown is the rolling 7-day average. The number of confirmed cases is lower than the number of actual cases; the main reason for that is limited testing.



Source: Johns Hopkins University CSSE COVID-19 Data

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West Midwest South Northeast

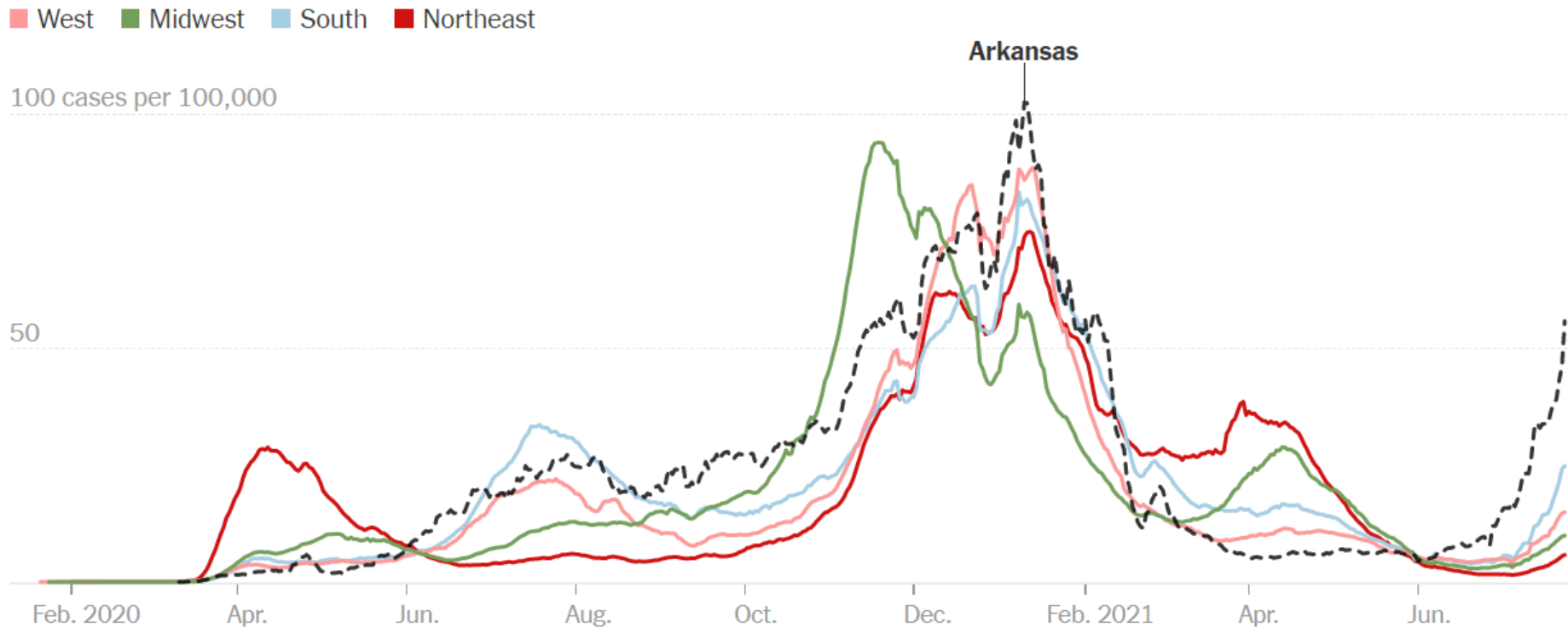
100 cases per 100,000

50

Arkansas

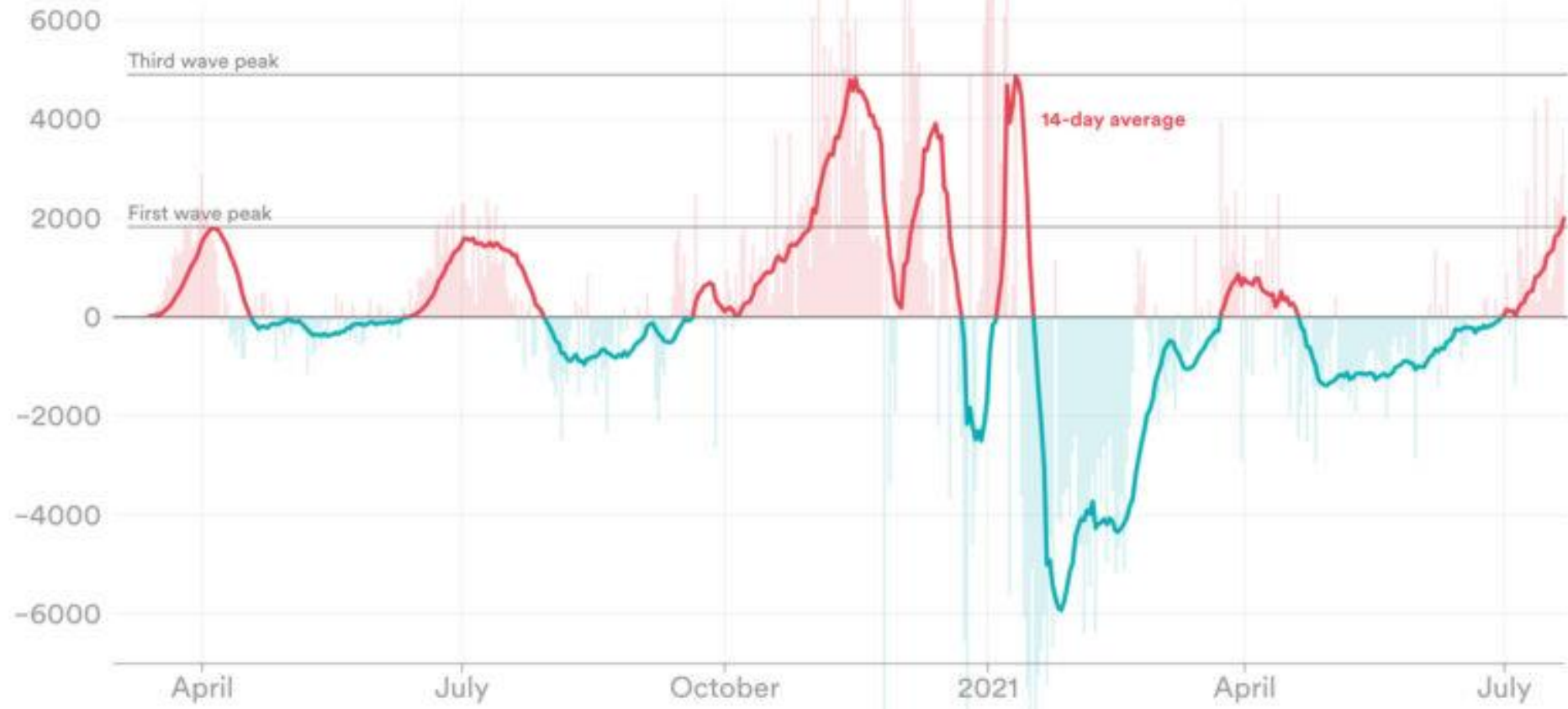
Feb. 2020 Apr. Jun. Aug. Oct. Dec. Feb. 2021 Apr. Jun.

[About this data](#)

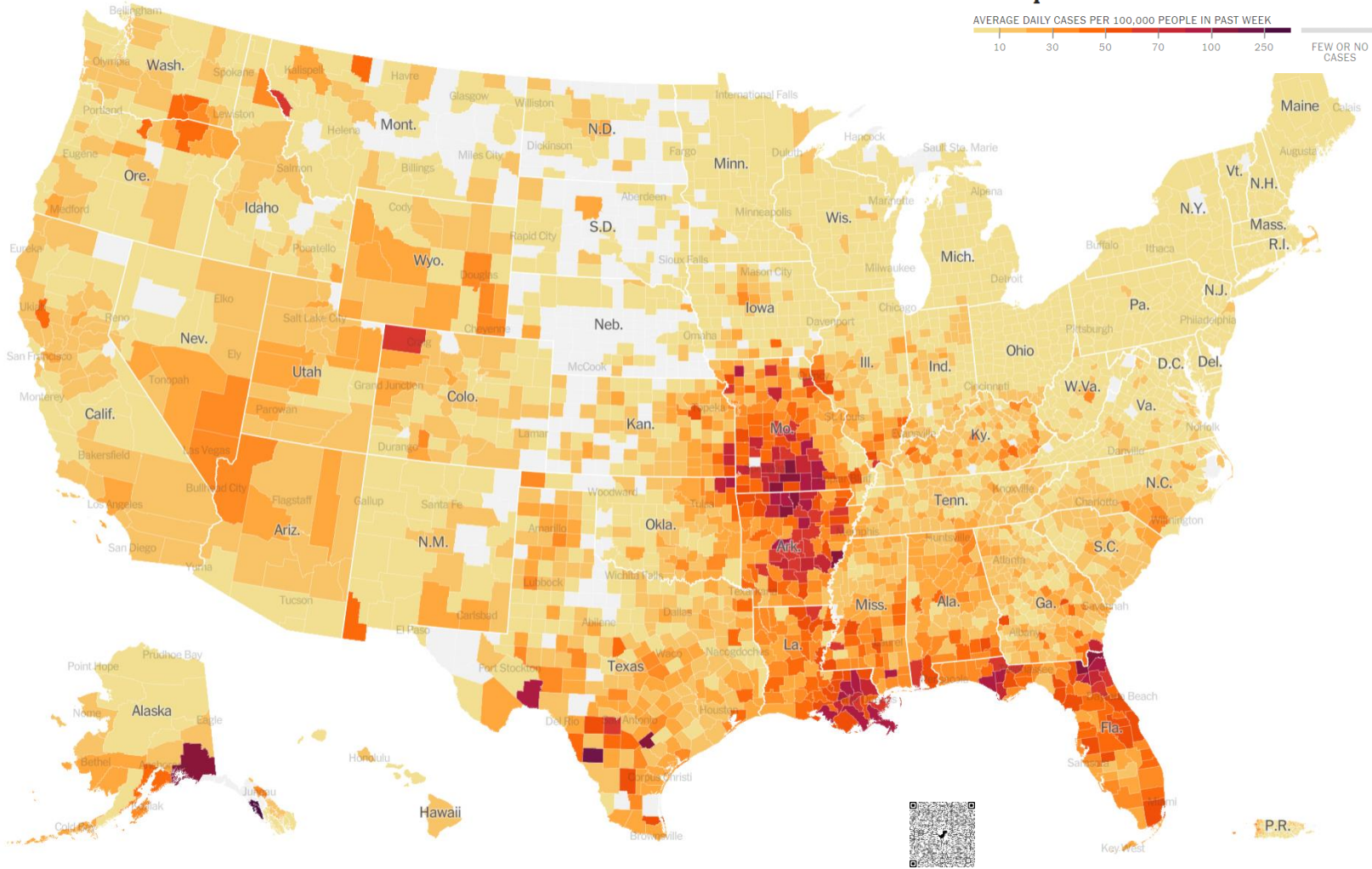
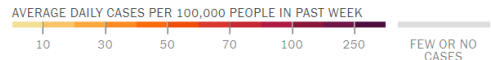


# Covid-19 case acceleration in the U.S.

Cases / week / day

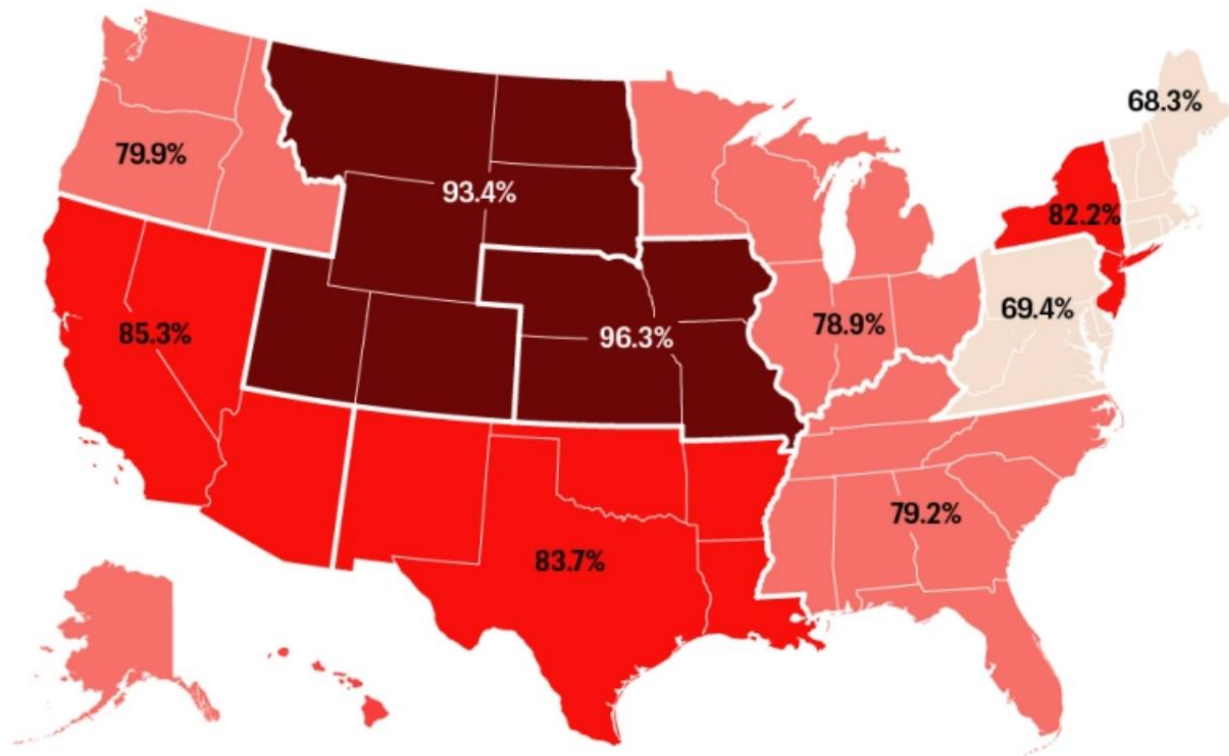
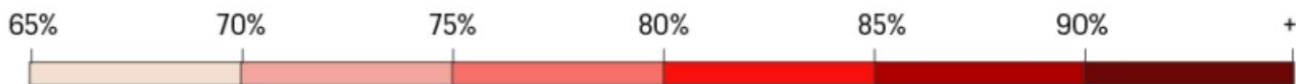


# Hot spots



# DELTA VARIANT PREVALENCE IN THE U.S.

COVID-19 DELTA VARIANT CASES BY REGION, AS A SHARE OF NEW CASES



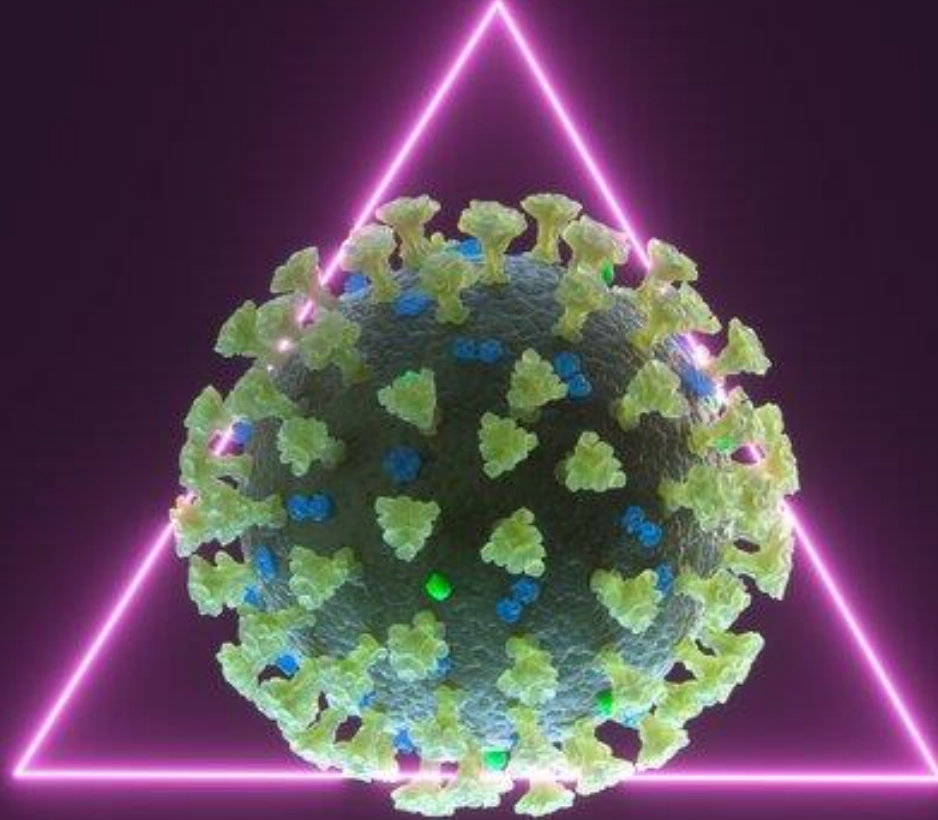
SOURCE: CDC

TWO WEEKS PERIOD ENDING JULY 17, 2021

FORTUNE



# Vaccine Efficacy and the Delta variant



# Vaccines Highly Effective, but Concerns about Delta Variant

Vaccine	Efficacy at preventing disease: D614G & Alpha (B.1.1.7)	Efficacy at preventing infection: D614G & Alpha (B.1.1.7)	Efficacy at preventing disease: Beta (B.1.351), Gamma (P.1), Kappa (B.1.617)	Efficacy at preventing infection: Beta (B.1.351), Gamma (P.1), Kappa (B.1.617)	Efficacy at preventing infection: B.1.617.2 (Delta)	Efficacy at preventing Hospitalization: B.1.617.2 (Delta)
Pfizer/BioNTech	91%	86%	86%	82% (concern with Gamma)	36-88% 32% if partially vaccinated	90-96% if fully vaccinated
Moderna	94%	89%	89%	85%	88% fully vaccinated	Assumed like Pfizer
AstraZeneca-Oxford	74%	52%	35%	31%	67% 33% % 1 dose	92%
Johnson & Johnson (Janssen)	72%	72%	64%	57%	64%	82% - more data needed
Sputnik-V (Gamaleya)	92%	81%	59%	52%	Reported as 90% effective but no data available	ND
Novavax	89%	79%	49%	43%	93%	ND
CoronaVac	50%	44%	32%	28%	ND	ND
Sinopharm	73%	65%	47%	41%	ND	ND
Tianjin CanSino	66%	58%	42%	37%	ND	ND
Covaxin	79%	69%	57%	50%	ND	ND

D614G – Early SARS-CoV-2 – nickname “Doug”

B.1.1.7 – Alpha first identified in the UK

B.1.351 – Beta first identified in South Africa

P.1 – Gamma first identified in Brazil

B.1.617 – earlier version of Kappa and Delta

# Breakthrough infections

- CDC counts only breakthrough infections from fully vaccinated people who are hospitalized or die.
  - As of July 19, 2021, >161 million people in the US fully vaccinated against COVID-19

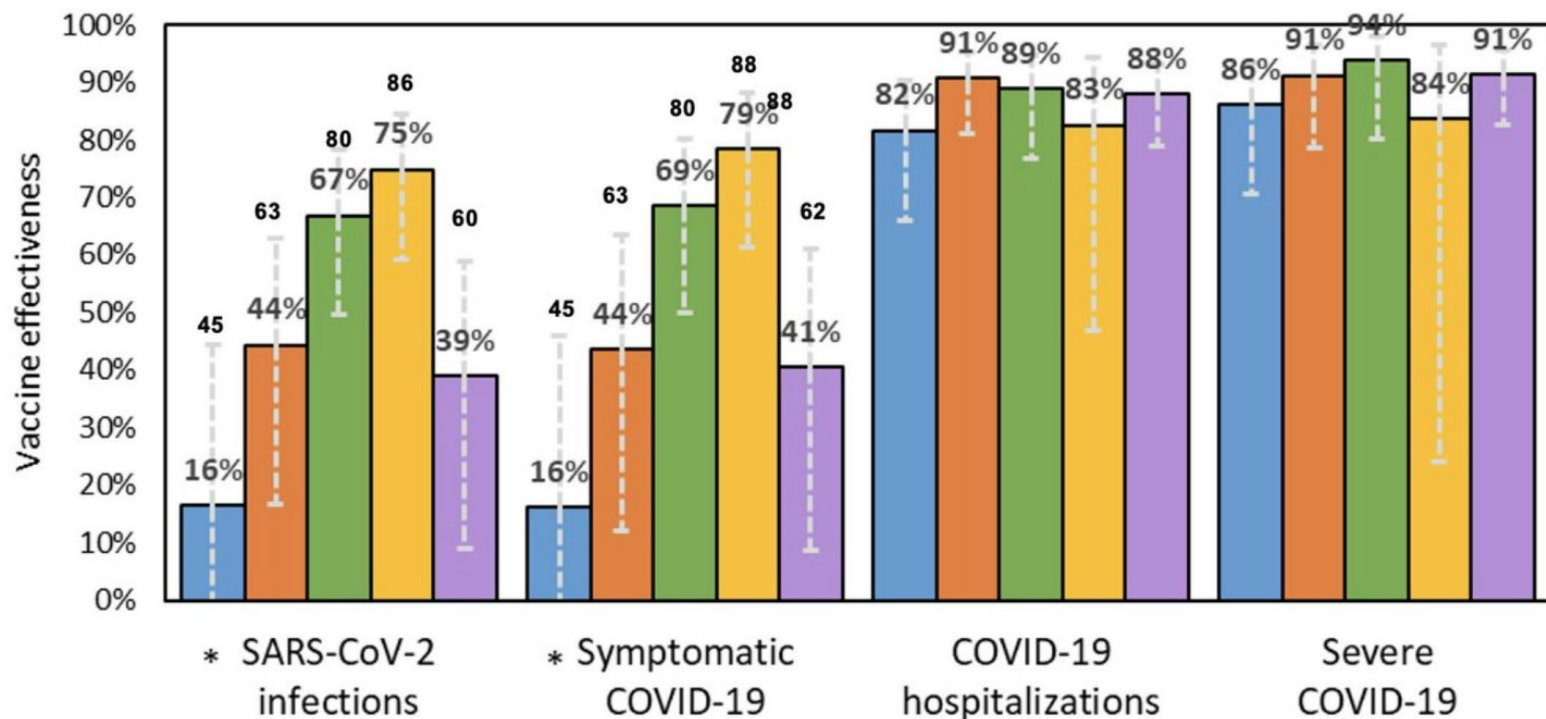
Total number of vaccine breakthrough infections reported to CDC		
Hospitalized or fatal vaccine breakthrough cases reported to CDC	5,914	
Female	2,881	(49%)
People aged ≥65 years	4,392	(74%)
Asymptomatic infections	1,164	(20%)
Hospitalizations*	5,601	(95%)
Deaths†	1,141	(19%)

\* 1,529 (27%) of 5,601 hospitalizations reported as asymptomatic or not related to COVID-19.

† 292 (26%) of 1,141 fatal cases reported as asymptomatic or not related to COVID-19.

# Vaccine effectiveness<sup>^</sup> by outcome and month vaccinated with second dose, 20/6 - 17/7/2021

■ Jan-21   
 ■ Feb-21   
 ■ Mar-21   
 ■ Apr-21   
 ■ All fully vaccinated



<sup>^</sup>Adjusted for age group, sex and epi-week

\* 95% confidence interval crosses 0

# Is it Delta or Waning Immunity?

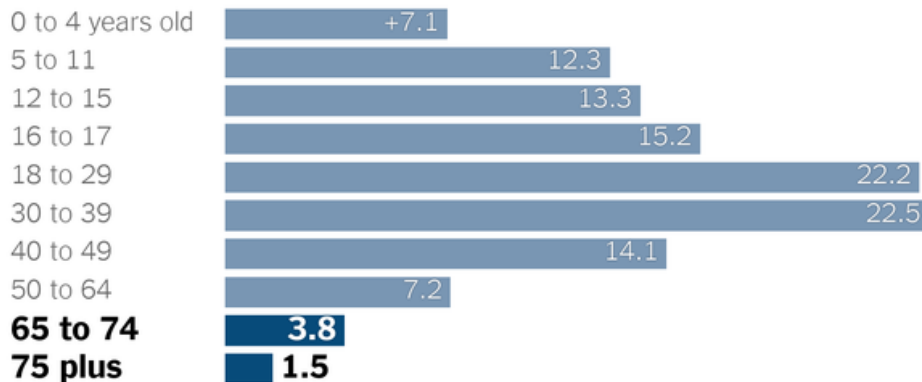
- Waning immunity – something we always suspected would happen
  - Studies show antibodies dropping off especially for older individuals
- Delta variant – More infectious and evidence that it does impact vaccine effectiveness to a small or larger degree depending on the vaccine



DATA FROM US AND UK SHOWS  
MOST INFECTIONS IN YOUNGER  
PROBABLY UNVACCINATED AGE  
GROUPS

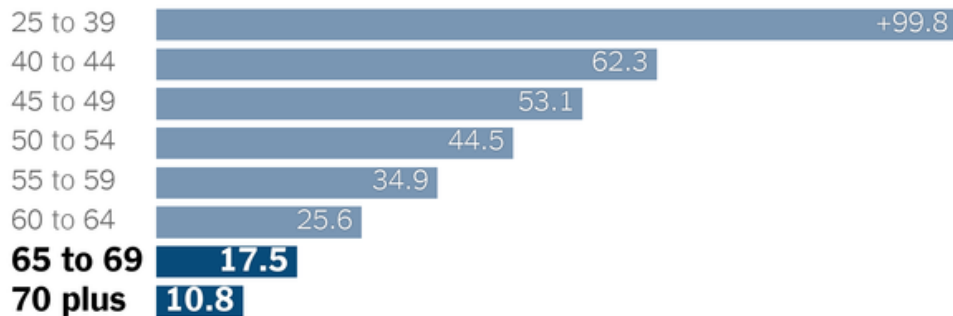
## Change in Covid Cases By Age, in U.S.

Per 100,000 people, past four weeks



## Change in Covid Cases By Age, in England

Per 100,000 people, since late May



# Breakthrough infections

- We know the vaccines are not 100% effective at stopping all infections
  - **They are great at stopping severe illness, hospitalization and death**
  - Asymptomatic, mild and moderate illnesses were expected - So, no surprise with increasing numbers of cases!
  - As the percentage of fully vaccinated increase, we will see the proportion of COVID cases in fully vaccinated increase
  - The reported high % of any breakthrough infections from Israel may reflect very high testing rates and picking up asymptomatic cases
- We also know the Delta variant is:
  - More infectious
  - That vaccinated people can infect others (but their viral load likely less than the unvaccinated)

# Asymptomatic, Mild, Moderate or Severe

No formal definitions

- **Asymptomatic** – no symptoms!
- **Mild** might include a fever, some respiratory symptoms, headaches, dry cough, some aches and pains – may need time off for a day or two
- **Moderate** –mild symptoms but more severe, don't want to or can't get out of bed, increasing breathing issues
- **Severe** – increasing shortness of breath, decreasing oxygen levels, confusion etc..



# How the UK's vaccine rollout has dramatically reduced Covid-19 deaths

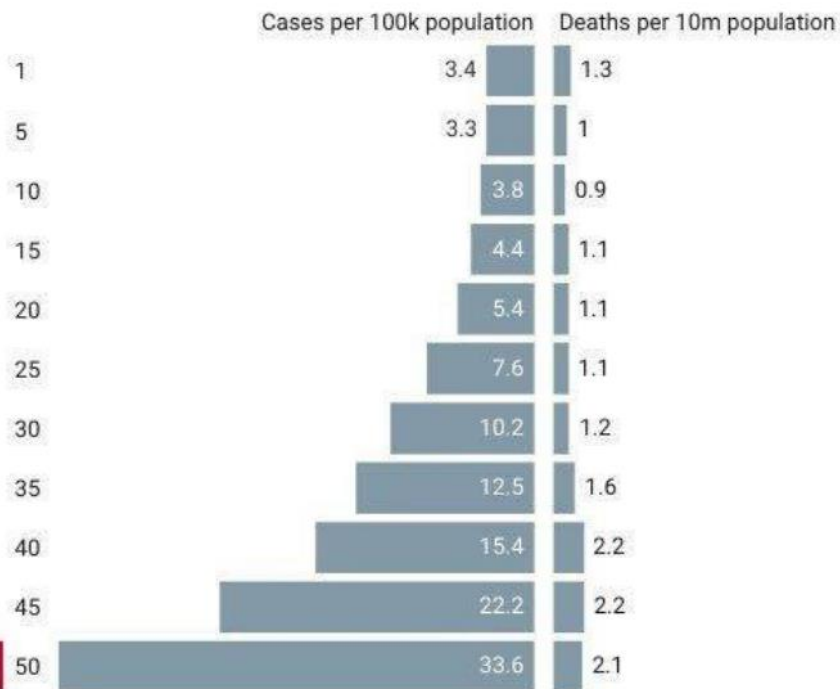
Cases versus deaths over days 1–50 of the UK's second and third Covid waves

## Second Wave



[Get the data](#) • Created with [Datawrapper](#)

## Third wave

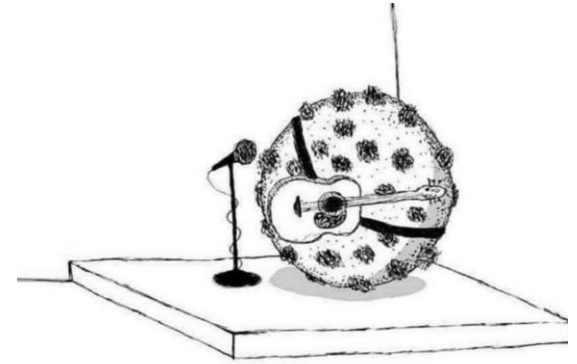


[Get the data](#) • Created with [Datawrapper](#)

Calculations based on a seven-day rolling average of daily recorded cases and deaths. Second wave is recorded from 8/9/20, third wave is recorded from 14/5/21.  
Source: UK Government, ONS

# What are the risks?

- Unvaccinated:
  - If unvaccinated then high probability of catching COVID as Delta highly infectious
  - Real risk of hospitalization and death especially if older or have risk factors – 99% of deaths are unvaccinated people
  - Should take precautions –
    - physical distancing, wearing a mask in public, avoid crowded indoor spaces
    - Get vaccinated as soon as possible
- Vaccinated:
  - Delta increases the risk of still getting COVID even if vaccinated but likely to be asymptomatic, mild or moderate illness
  - Risk of severe illness, hospitalization, needing and ICU or death is low
  - No masks and physical distancing? It depends:
    - On number of unvaccinated people
    - Community rates
    - Indoor versus outdoor
    - High-risk individuals in your family or who you encounter regularly



*"This one's dedicated to all the people that didn't believe in me when I was getting started."*



**KEEP  
CALM  
AND  
PLAY THE  
LONG GAME**



# Questions

**Upcoming NEBGH virtual events:**