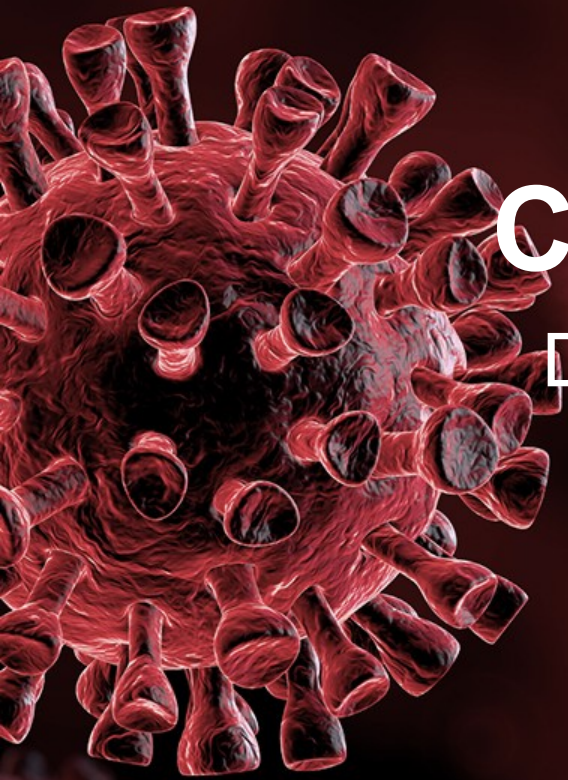
NORTHEAST
BUSINESS GROUP ON HEALTH

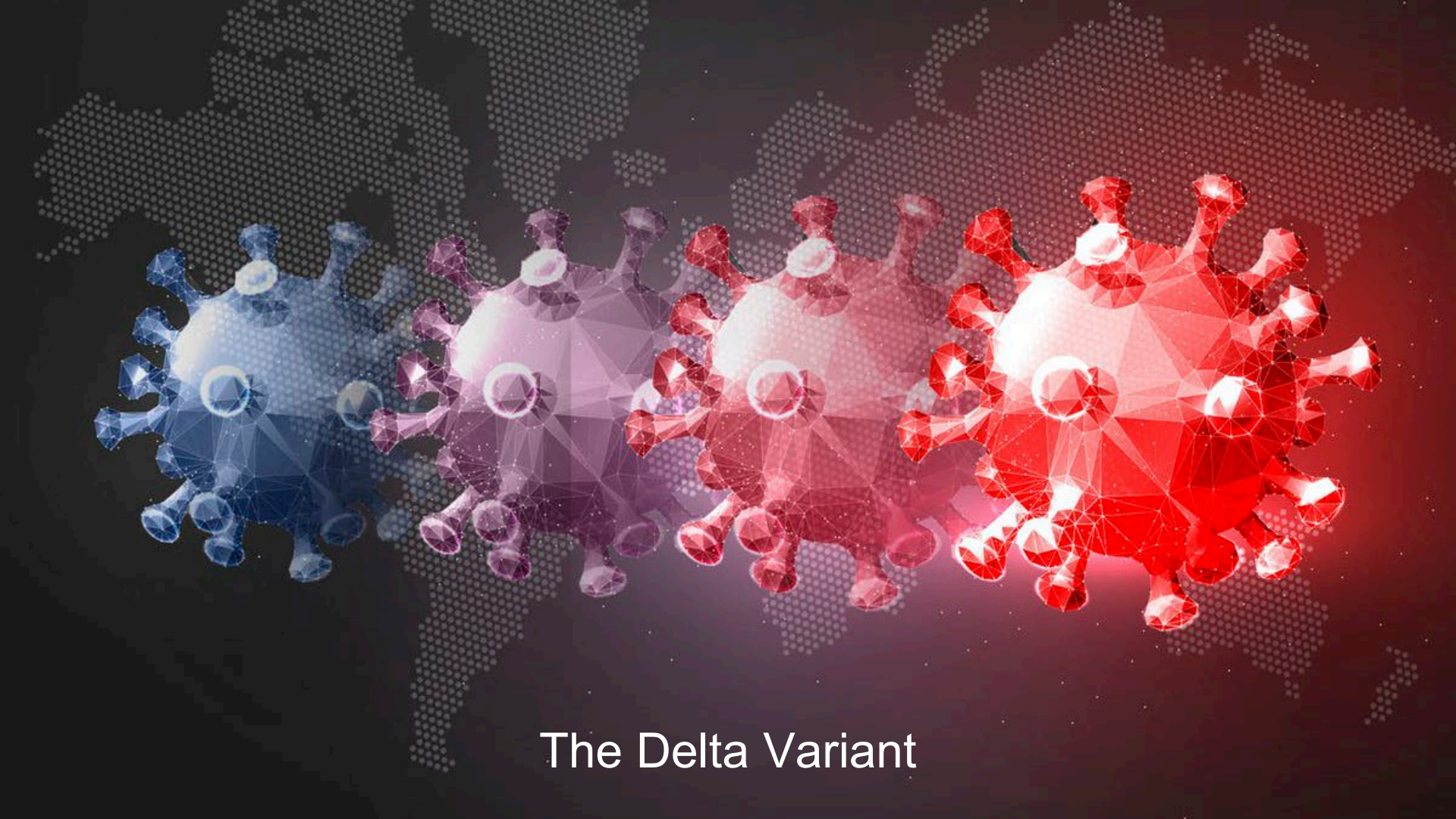


COVID-19 Update

Dr Mark Cunningham-Hill

Medical Director NEBGH

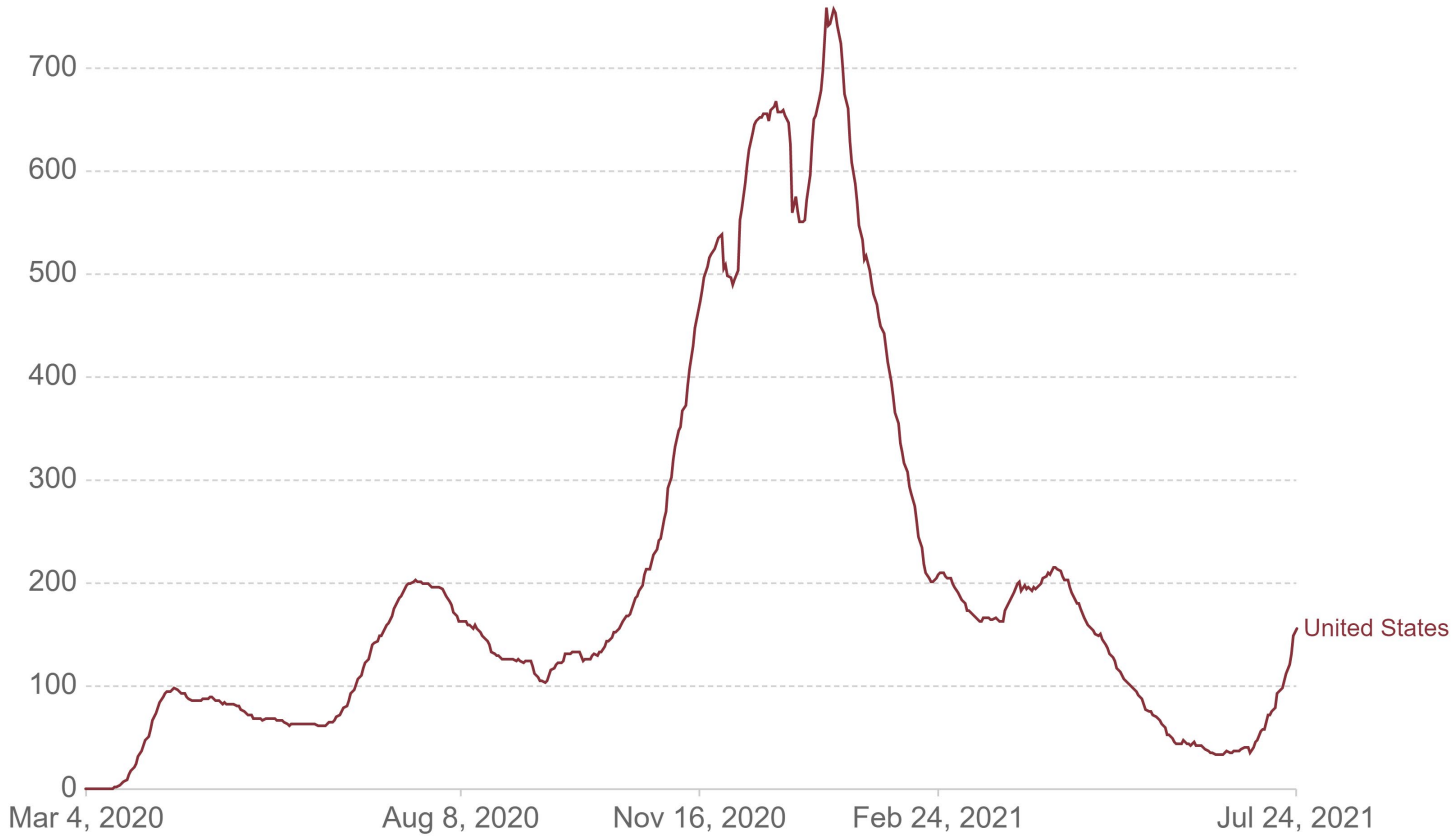
Monday July 26th, 2021


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.

Our World in Data

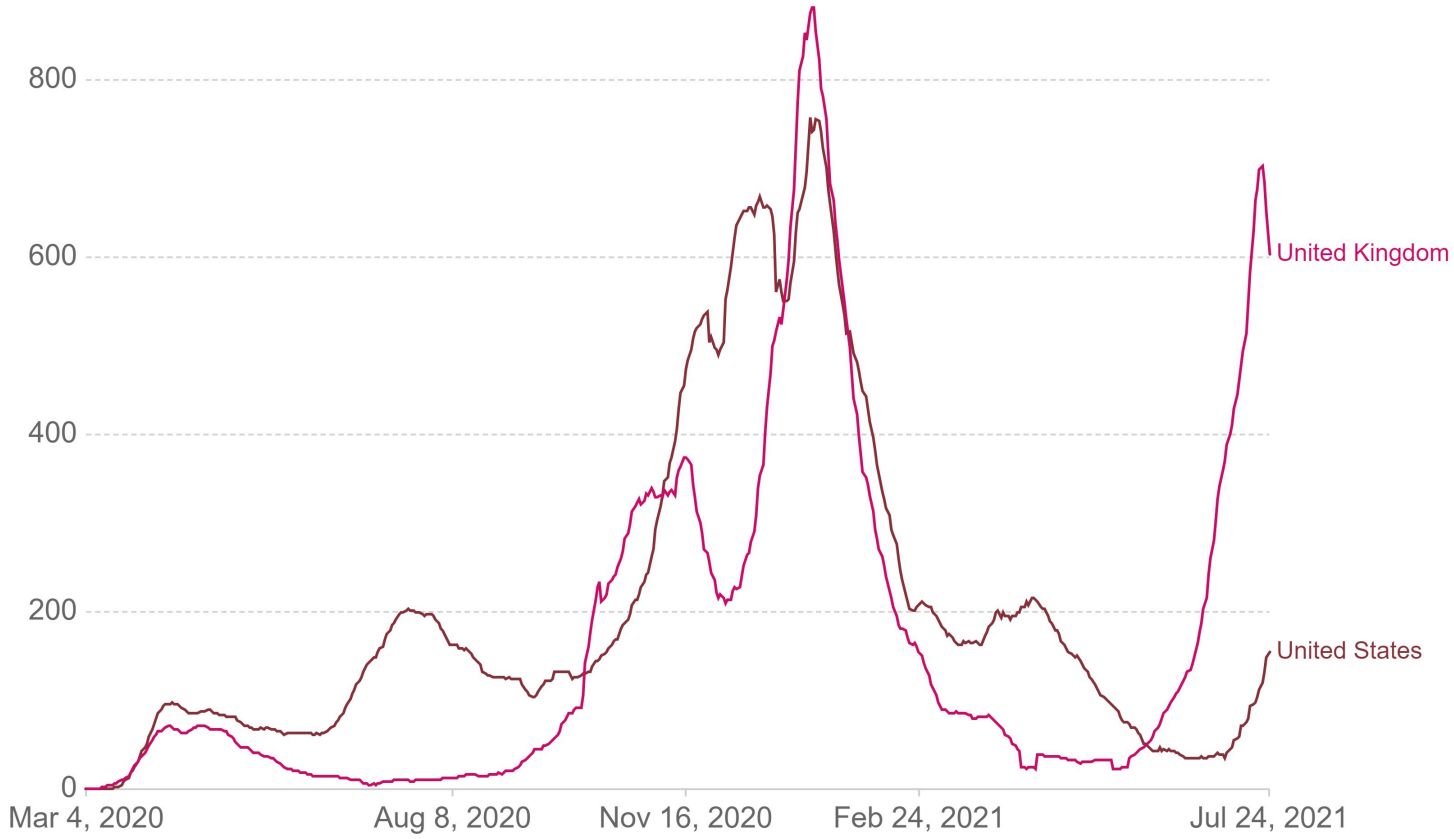


Source: Johns Hopkins University CSSE COVID-19 Data

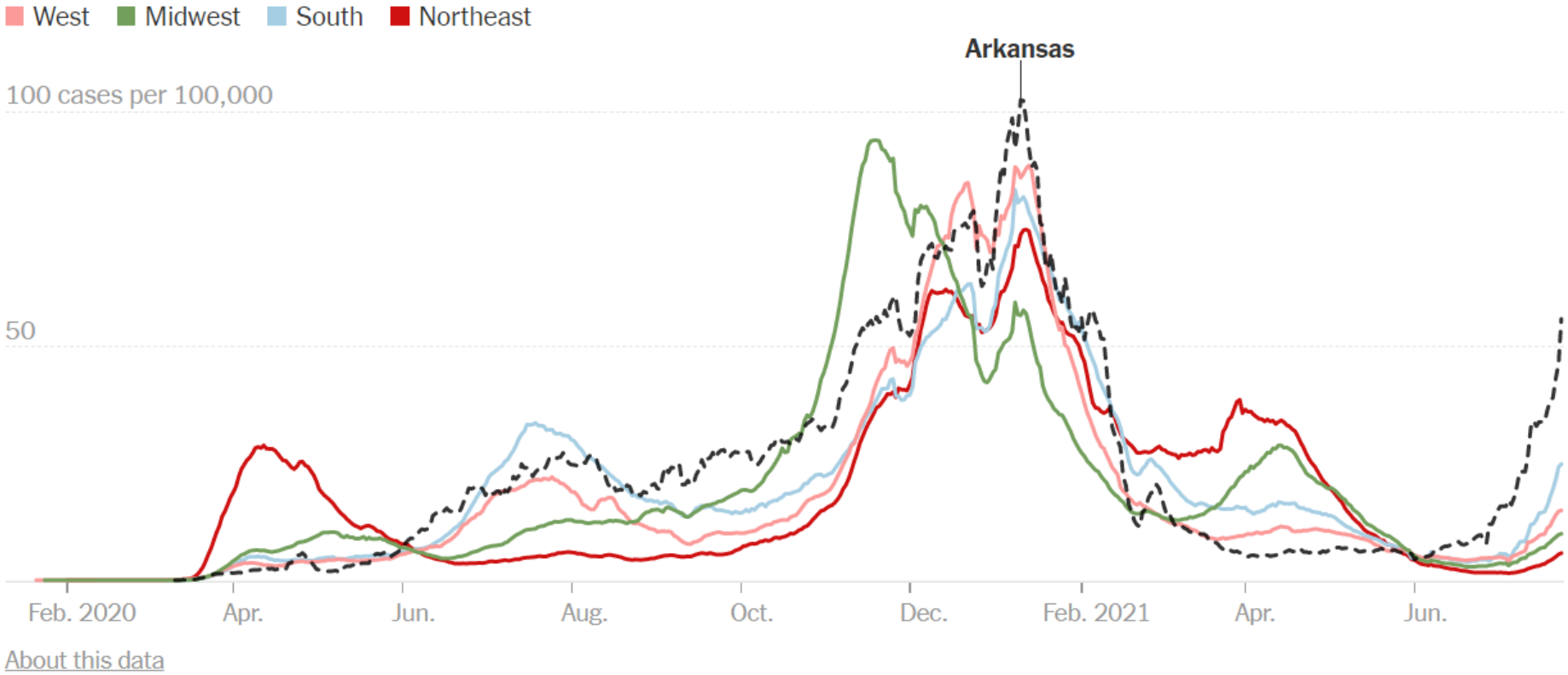
Daily new confirmed COVID-19 cases per million people

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.

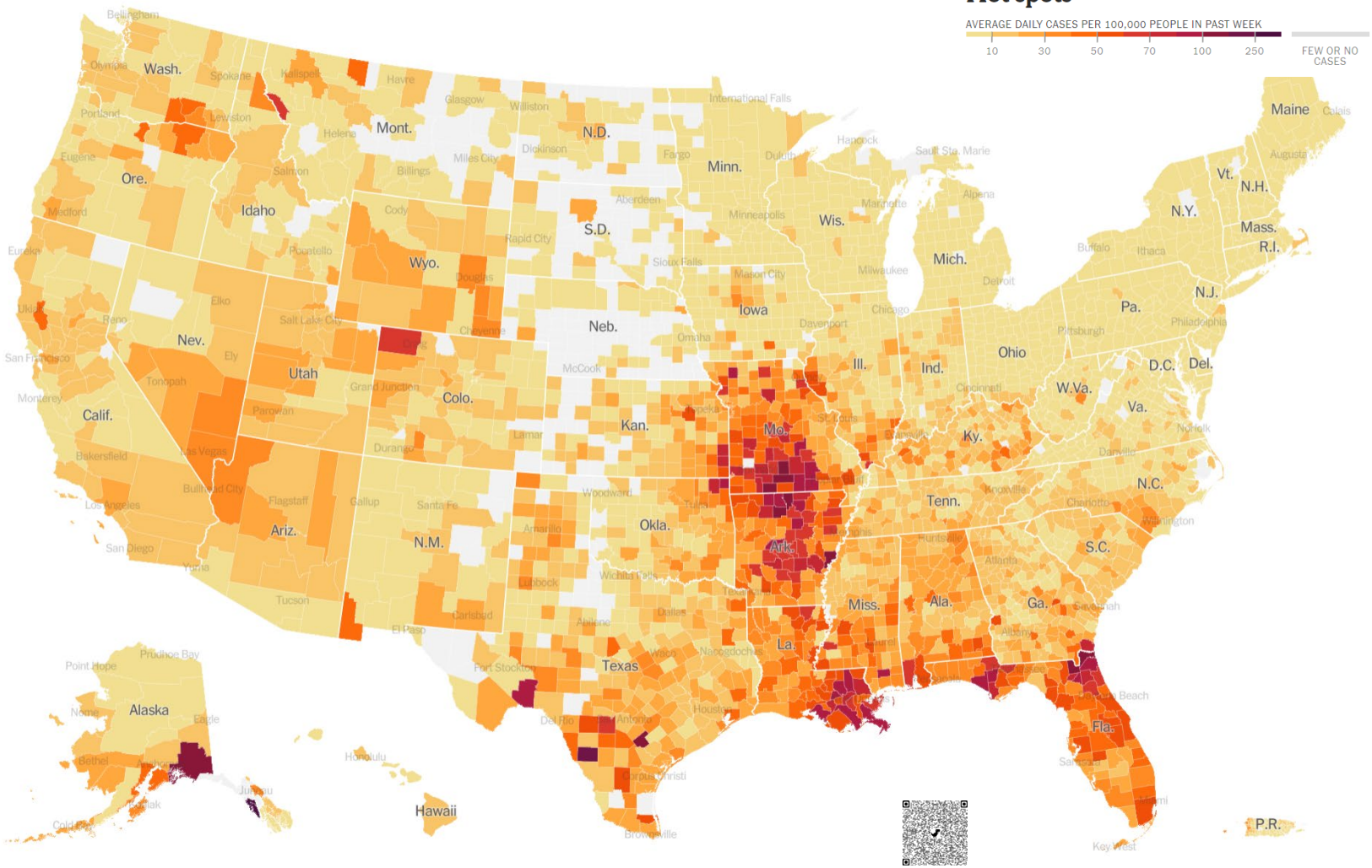
Our World in Data



Source: Johns Hopkins University CSSE COVID-19 Data

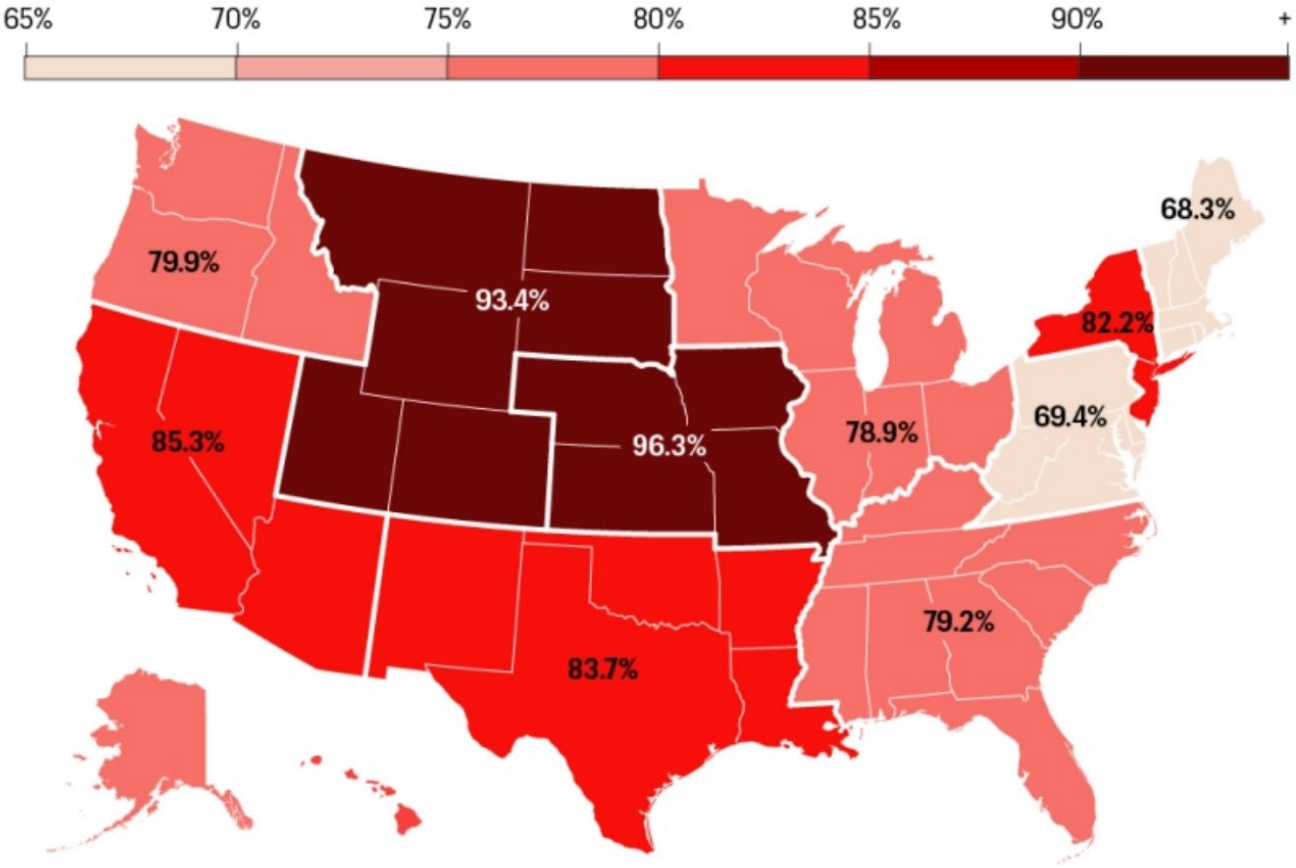


About this data


Hot spots
AVERAGE DAILY CASES PER 100,000 PEOPLE IN PAST WEEK
10
30
50
70
100
250
FEW OR NO CASES
Wash.
Ore.
Calif.
Idaho
Nev.
Mont.
Wyo.
Utah
Ariz.
Colo.
N.M.
N.D.
S.D.
Neb.
Kan.
Okla.
Texas
Minn.
Iowa
Mo.
Ark.
La.
Wis.
Ill.
Mich.
Ind.
Ohio
Ky.
Tenn.
Miss.
Ala.
Ga.
Fla.
S.C.
N.C.
Va.
W.Va.
Pa.
N.Y.
Maine
Vt.
N.H.
Mass.
R.I.
Conn.
N.J.
Del.
D.C.
Alaska
Hawaii
P.R.

DELTA VARIANT PREVALENCE IN THE U.S.

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

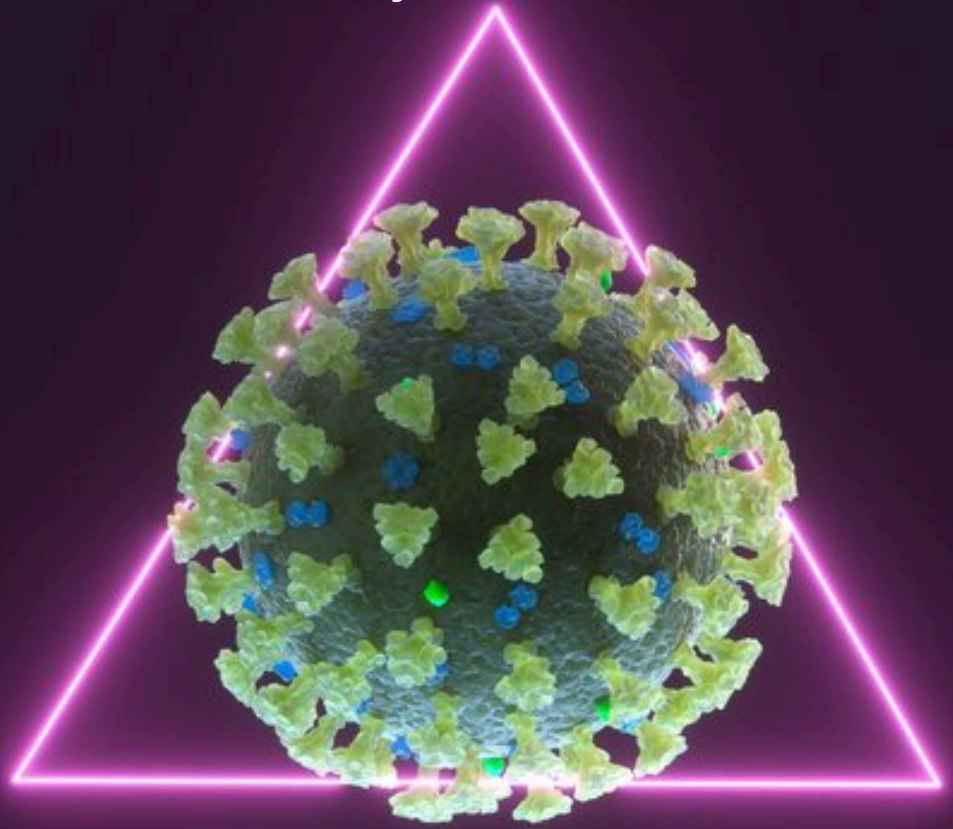


SOURCE: CDC

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

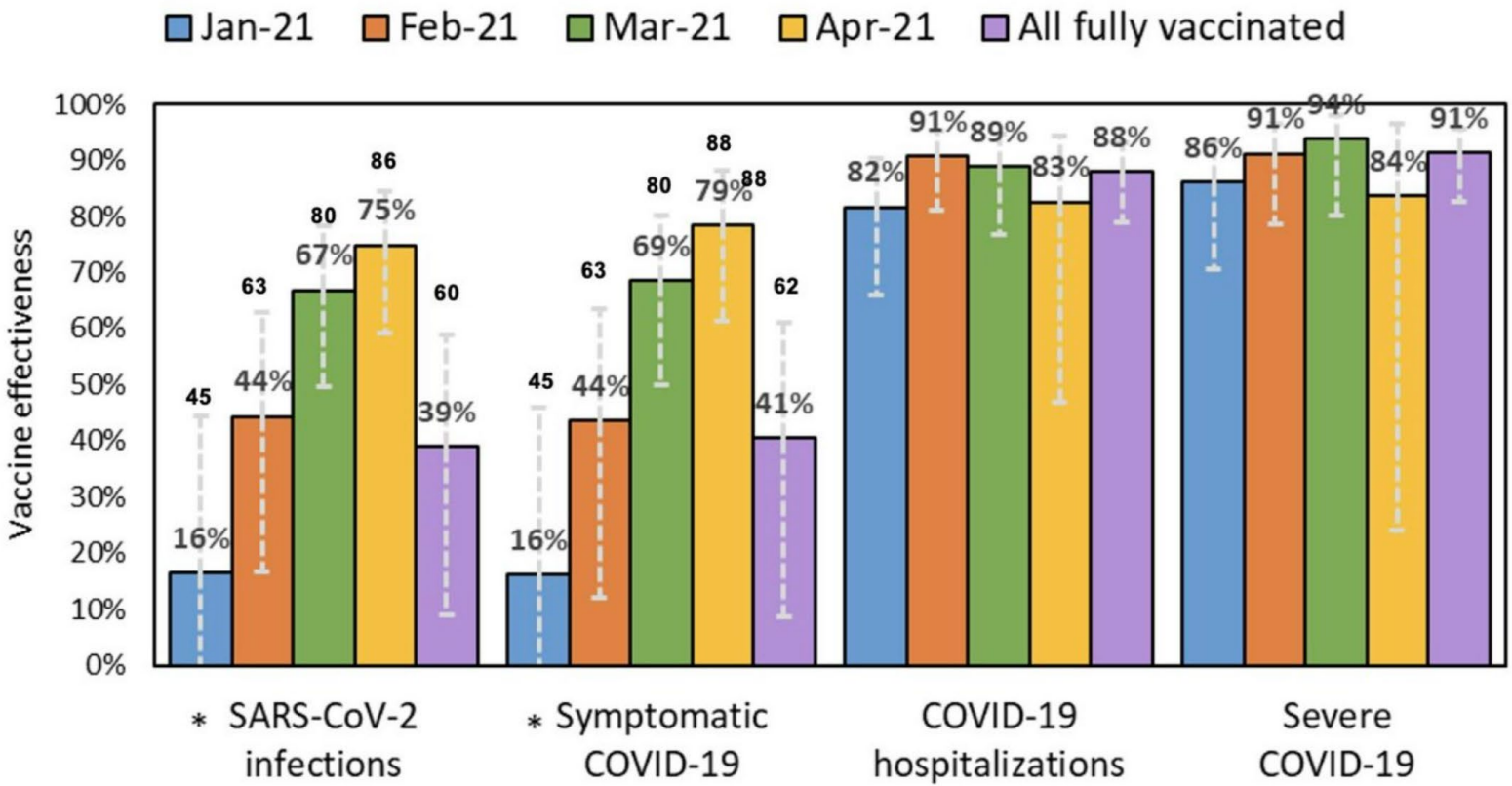
Breakthrough infections

- 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^ by outcome and month vaccinated with second dose, 20/6 - 17/7/2021



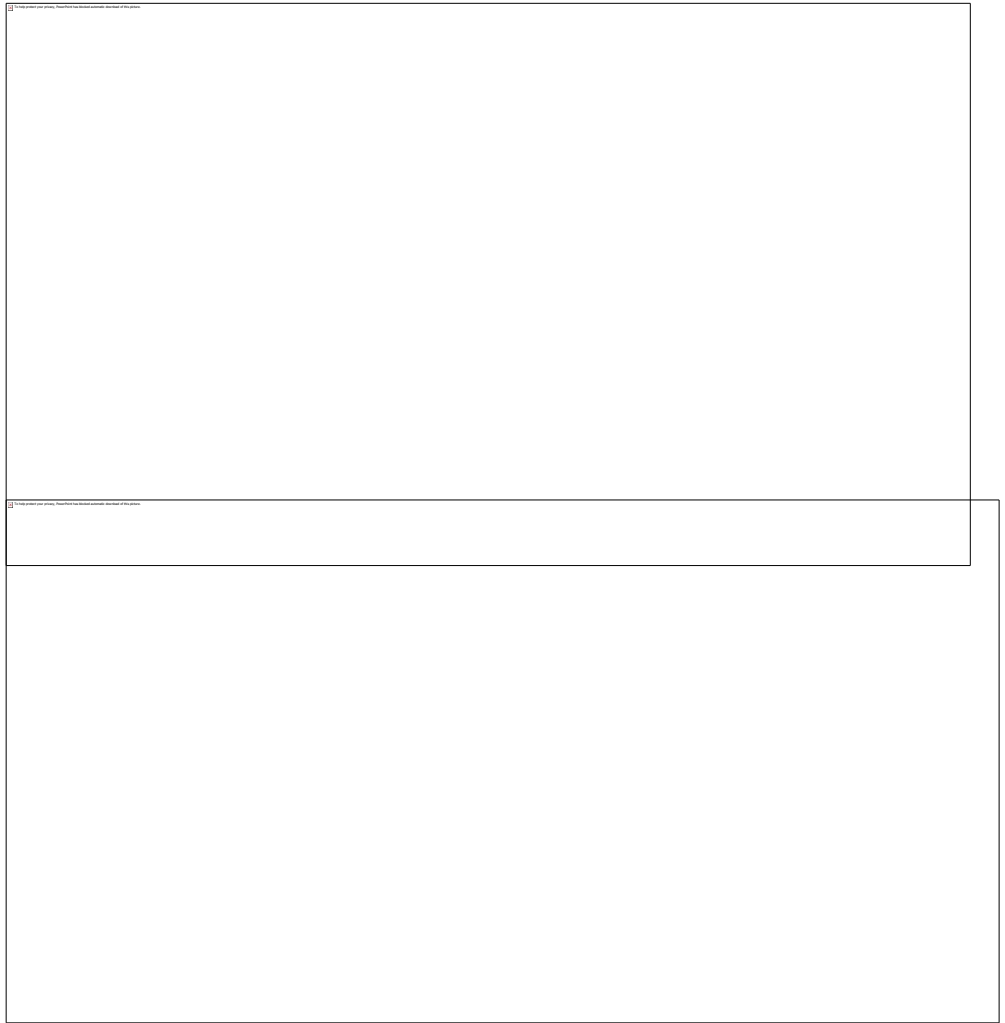
^Adjusted for age group, sex and epi-week

* 95% confidence interal 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



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

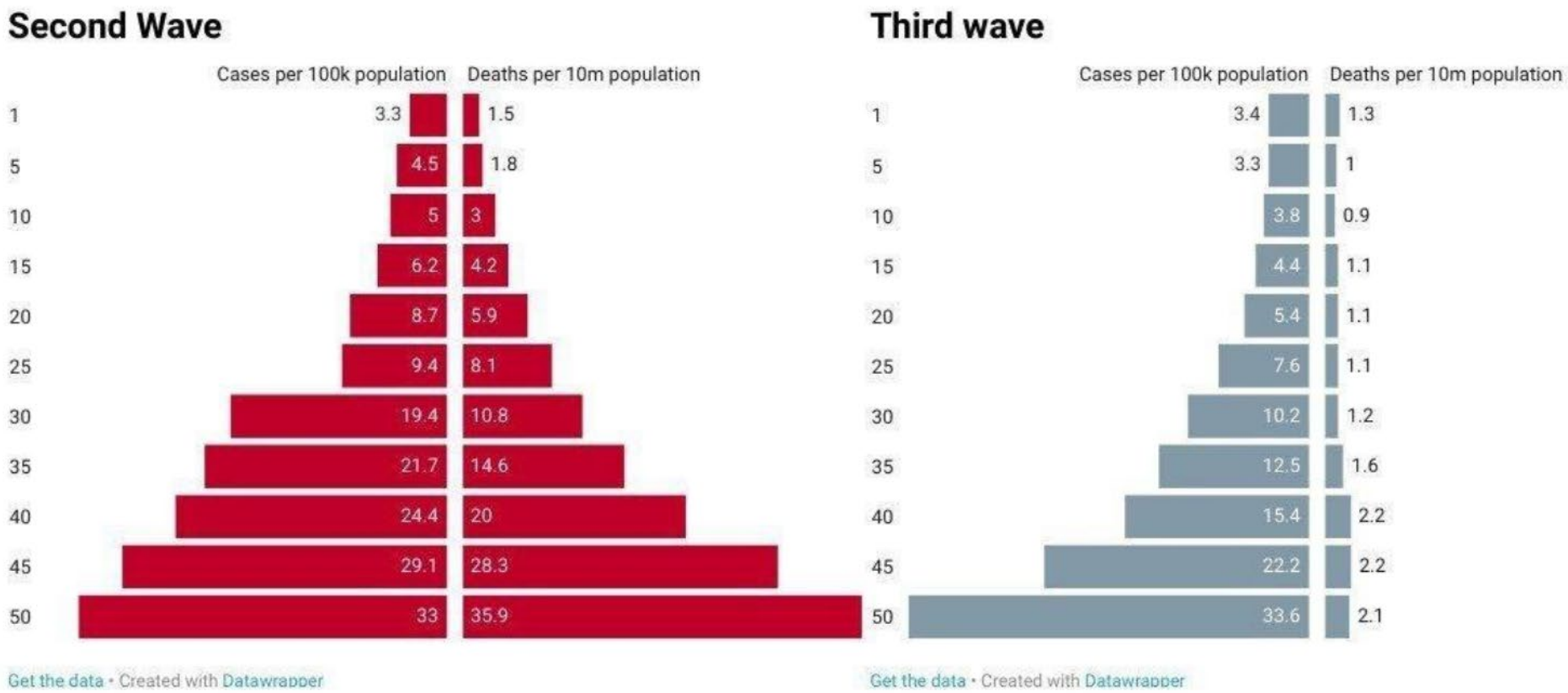
Asymptomatic, Mild, Moderate or Severe

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, confudion etc..

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

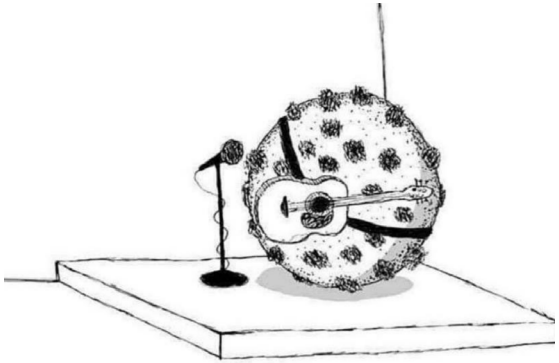
Cases versus deaths over days 1–50 of the UK's second and third Covid waves



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: