

COVID-19 Update

Dr Mark Cunningham-Hill

Medical Director, NEBGH

Monday, September 20th 2021

Boosters

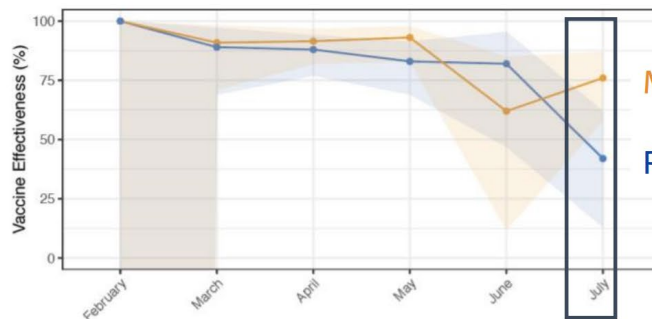
- Boosters needed when there is waning immunity or variants that evolve to avoid a person's immune response
- Risks of boosters too soon or too often:
 - Immune-mediated side-effects (such as myocarditis, or Guillain-Barre syndrome)
 - If unnecessary side-effects these might undermine acceptance of the COVID-19 and other vaccines
 - Need to vaccinate the global population to reduce infections and risk of new variants

Studies that show waning immunity

VE against Infection and Hospitalization July vs. Jan-May

Mayo Clinic Health System, Minnesota, n=25,589

SARS-CoV-2 Infection

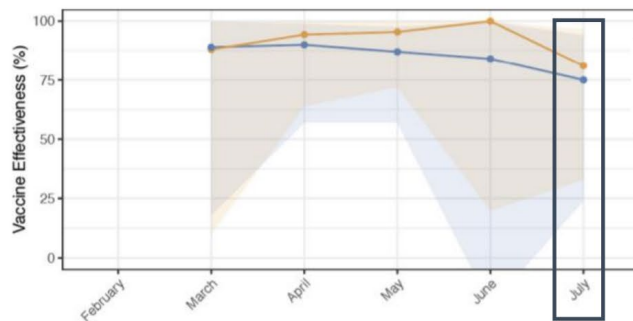


Moderna: 76% (95% CI: 58%-87%)

Pfizer: 42% (95% CI: 13%- 62%)

Delta prevalence increased from
0.7% in May to >70% in July

COVID-19 Hospitalization

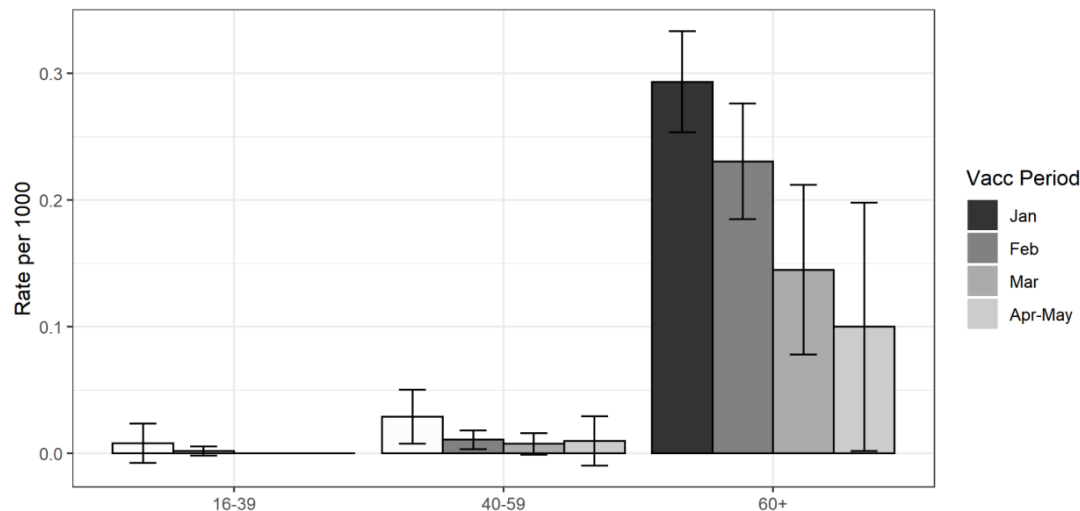


Moderna: 81% (95% CI: 33%-96%)

Pfizer: 75% (95% CI: 24%- 94%)

Studies that show waning immunity

Figure 4: Rate of severe COVID-19 (per 1,000 persons) from July 11, 2021 to July 31, 2021, stratified by period of second dose of COVID-19 vaccine and age group. White bars represent periods at which only persons at higher risk were allowed to receive vaccination.

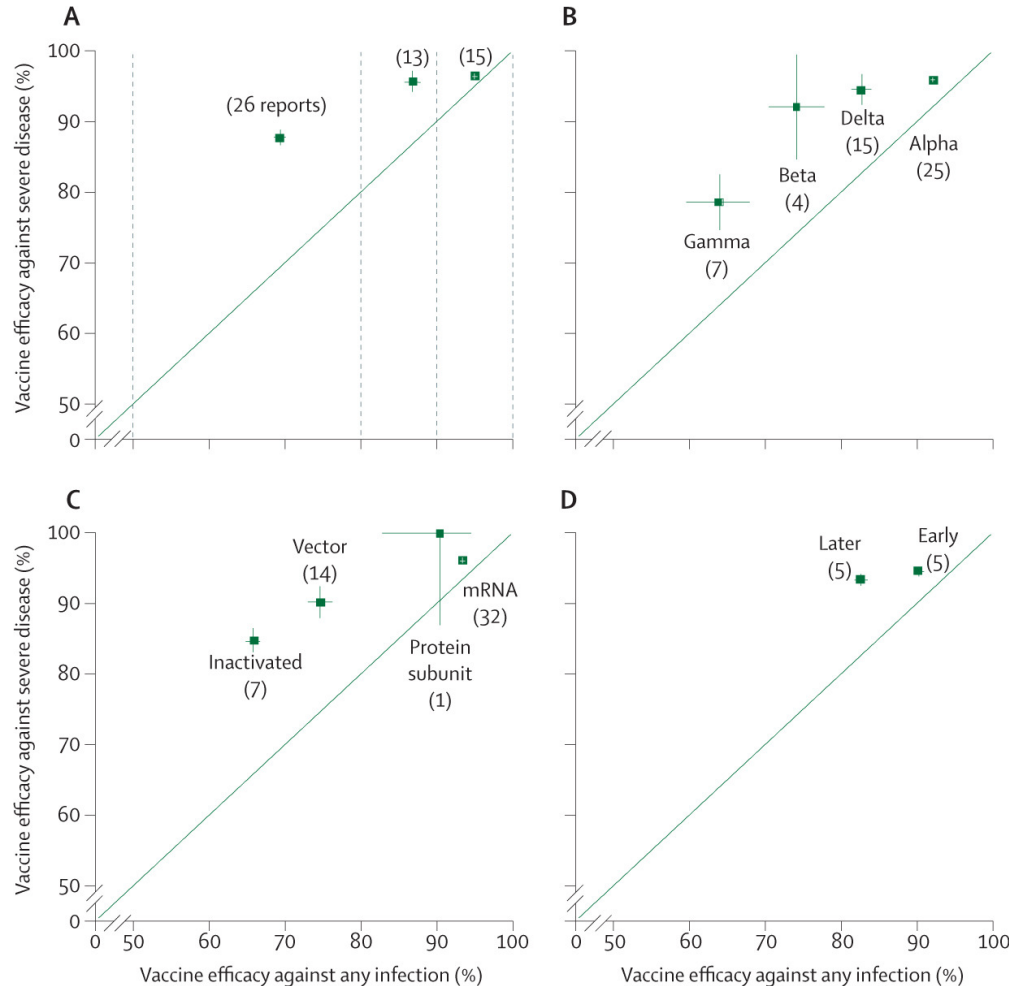


<https://www.medrxiv.org/content/10.1101/2021.08.24.21262423v1.full.pdf>

https://www.cdc.gov/mmwr/volumes/70/wr/mm7034e4.htm?s_cid=mm7034e4_w#T1_down

Study on front line workers - The VE point estimate was 85% among participants for whom <120 days had elapsed since completion of full vaccination compared with 73% among those for whom ≥150 days had elapsed; however, the VE 95% CI were overlapping, indicating the difference was not statistically significant

Studies that show durable immunity

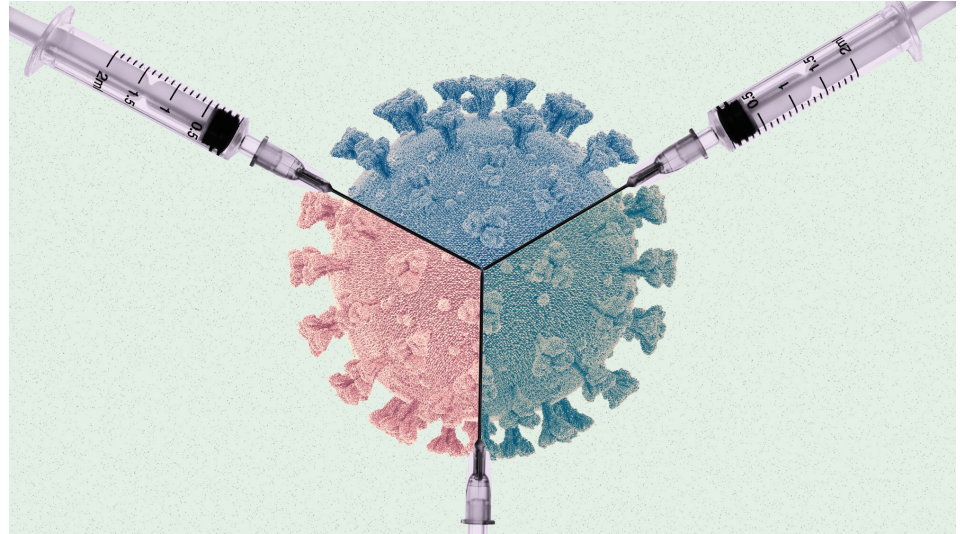


Considerations in boosting COVID-19 vaccine immune responses : Philip R Krause, MD, et al, *The Lancet* DOI: 10.1016/S0140-6736(21)02046-8

[https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(21\)02046-8/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(21)02046-8/fulltext)

Booster's work

- Studies show strong immune response following a booster
- Israeli study¹ found that
 - 7-13 days after the booster shot there is a 48-68% reduction in the odds of testing positive for SARS-CoV-2 infection, and that
 - 14-20 days after the booster the marginal effectiveness increases to 70-84%



1. <https://www.medrxiv.org/content/10.1101/2021.08.29.21262792v1>

Recommendation from Advisory Panel

- Advisory panel voted to recommend that the FDA authorize a third booster shot of Pfizer's COVID-19 vaccine for people over the age of 65 and others who are at a high risk for COVID-19
- The panel voted against recommending a booster shot for everyone over the age of 16
- No recommendations on Moderna or J&J Vaccines (yet)



Pfizer-BioNTech – Children Study

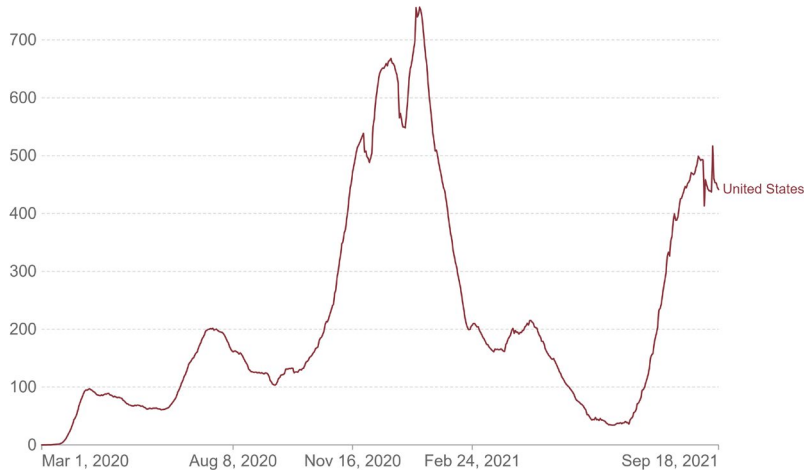
- Data from a phase 2/3 study of 4,500 children
 - 2,268 participants who were 5 to 11 years of age
- 10 µg administered 21 days apart (cf. 30 µg dose - 12 and older)
- The antibody responses comparable to those recorded in people 16 to 25 years of age
- Vaccine was well tolerated, with side effects generally comparable to those observed in participants 16 to 25 years of age
- Submitting to FDA by end of month – potential approval end of October
- Age 6 month – 5 years data expected Q4'21

US vs. UK

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

CC BY

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

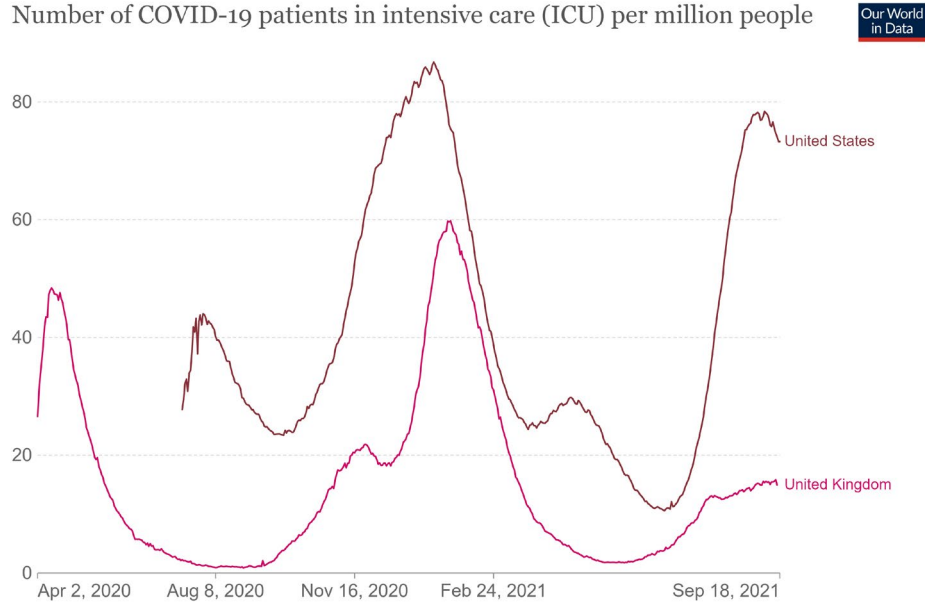
CC BY

- Lower vaccination rates (54% fully vax)
- Vaccination rates not uniform
- Varied public health measures
- Schools reopening Aug/Sept

- Higher vaccination rates (65% fully vax)
- “Freedom Day”
- Varied public health measures
- Schools reopening Aug/Sept

US vs. UK

Number of COVID-19 patients in intensive care (ICU) per million people



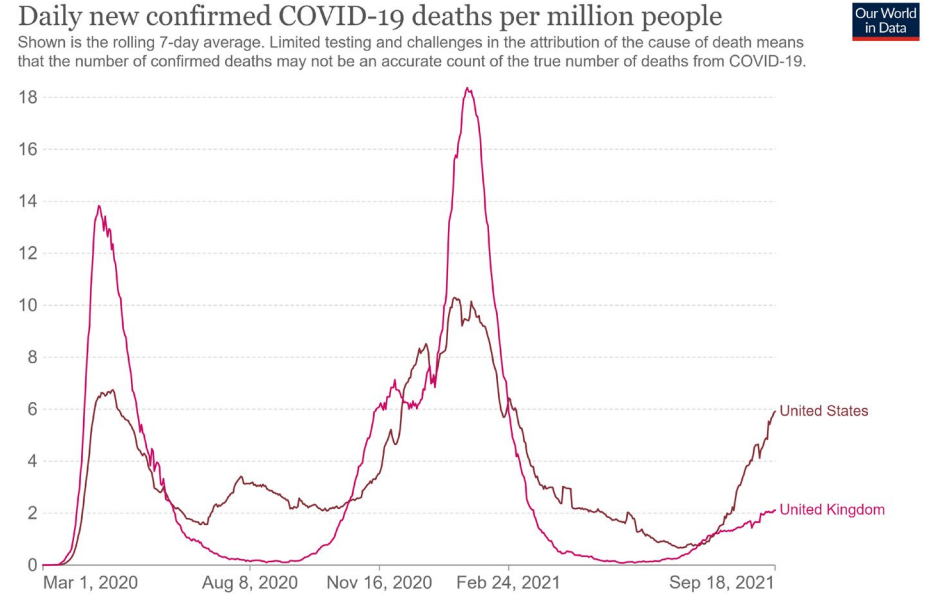
Source: Official data collated by Our World in Data

Our World
in Data

CC BY

Daily new confirmed COVID-19 deaths per million people

Shown is the rolling 7-day average. Limited testing and challenges in the attribution of the cause of death means that the number of confirmed deaths may not be an accurate count of the true number of deaths from COVID-19.

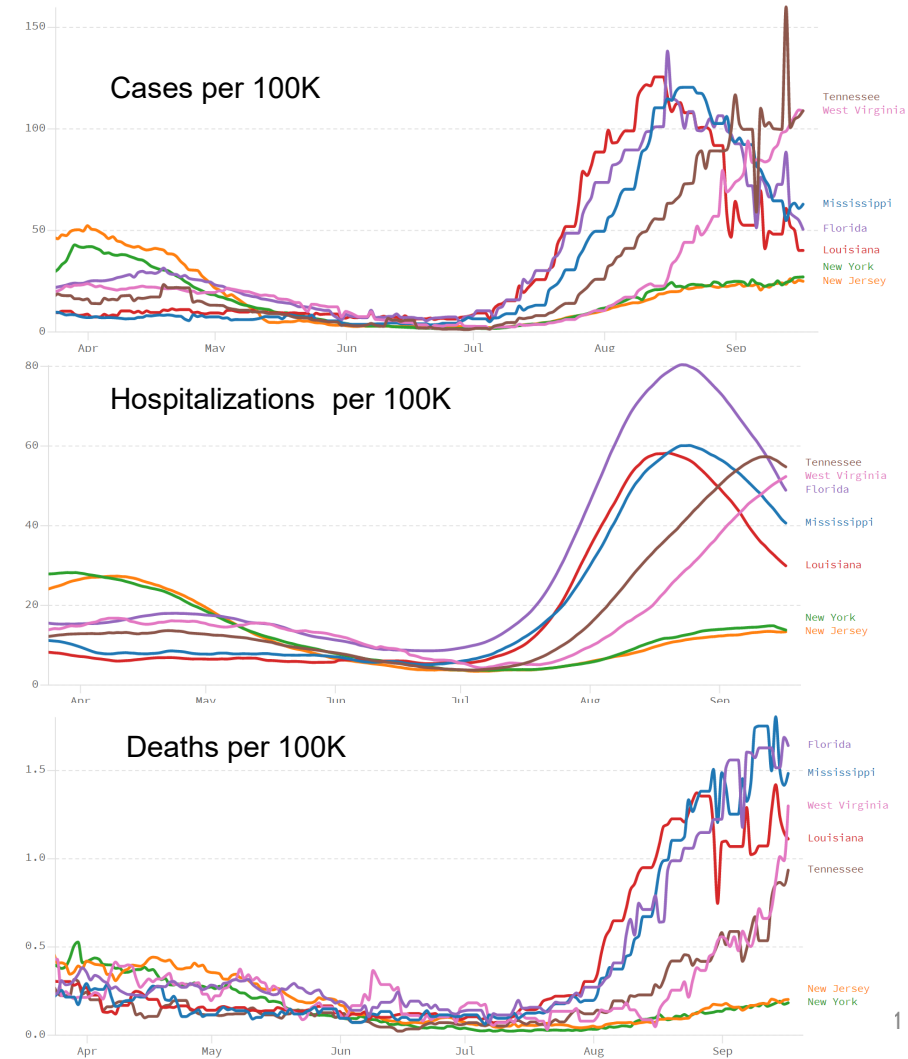


Source: Johns Hopkins University CSSE COVID-19 Data

Our World
in Data

CC BY

- Cases increasing West Virginia and Tennessee
- Cases decreasing in many other states
- Hospitalizations declining except WV
- Deaths are still increasing (2000 per day)

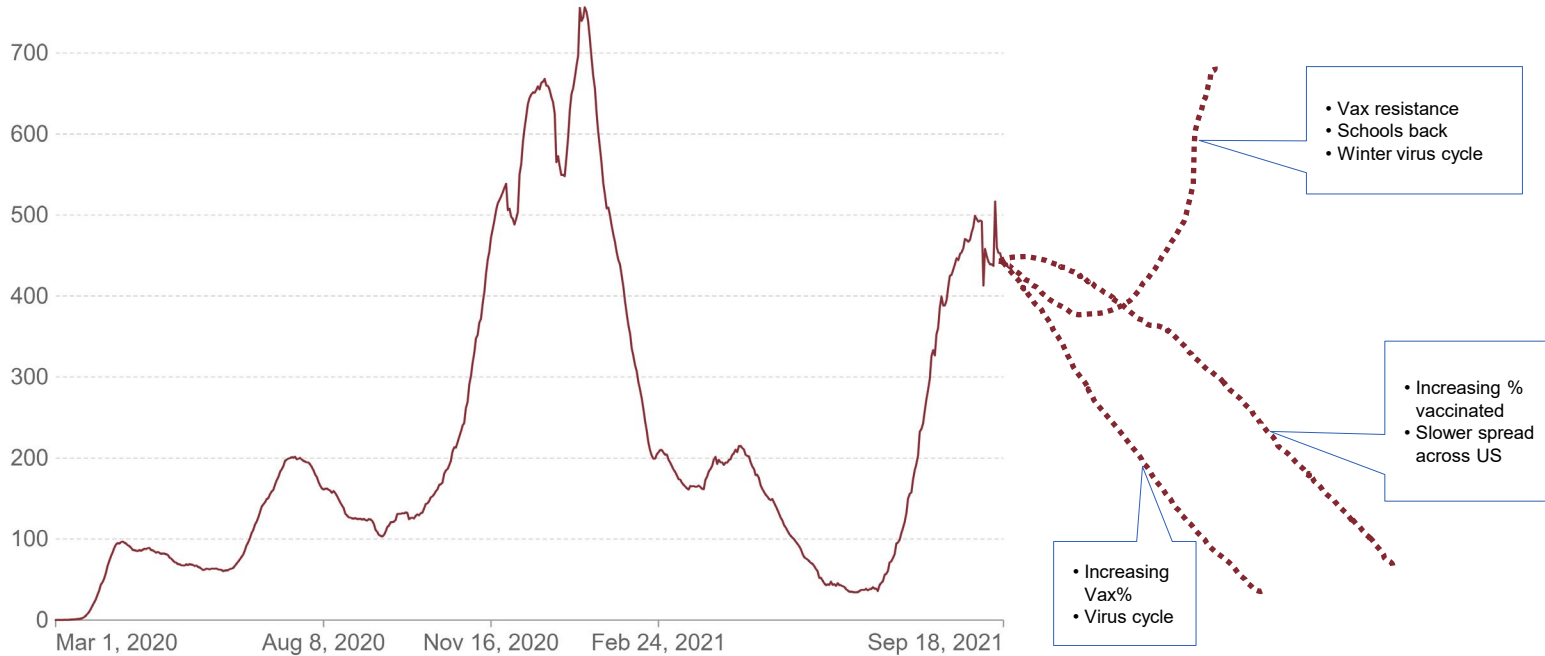


So, what happens next?

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

CC BY

Monoclonal Antibodies

- Available to individuals who:
 - Are high risk for developing severe COVID-19 and,
 - Have a positive COVID-19 test and have not yet been admitted to the hospital, and
 - Are 12 years of age or older (and at least 88 pounds)
- Sooner they are given the better – within 4-5 days (Not after 10 days)
- Boost your immune response and help block virus entering cells
- Side-effects – some local at infusion site
- Effectiveness:
 - Reduces COVID-19-related hospitalization or deaths in high-risk patients by ~ 70%
 - When given to an exposed person reduce their risk of developing an infection with symptoms by 80%
 - Do work against the Delta variant



Vaccine vs. Monoclonal Antibody

- 🧬 Fights SARS-CoV-2 with infused antibodies
- 🧬 Administered within 10 days after exposure
- 🧬 May be out of pocket expenses
- 🧬 Limited treatment window
- 🧬 Under EUA
- 🧬 70-85% effective in reducing severe disease, hospitalization or death
- 🧬 Last 3 months
- 🧬 Government cost \$2,000+

- 💧 Defends against SARS-CoV-2 with your own antibodies
- 💧 Administered before exposure/infection
- 💧 Free
- 💧 Easily accessible
- 💧 FDA Approved
- 💧 99% effective in reducing severe disease, hospitalization or death
- 💧 Last 9+ months
- 💧 Government cost \$20



Questions

Upcoming NEBGH virtual events:

- **Sept. 21** – DE&I-Focused Family Building: What It Really Means
- **Nov. 2** – Navigating the New Gateways to Access Mental Health
- **Nov. 18** – Annual Membership Meeting
- **Dec. 9** - Pharmacy Benefits Strategies for Now - and Later