

August 13th, 2021

## KEY TAKEAWAYS

- The Delta variant has taken over and is causing a swell of new cases and hospitalizations in Virginia. All health Districts are showing growth, with 33 of 35 districts now "surging".
- Case rates in Florida and Louisiana have already exceeded the peaks of last winter. UVA modeling continues to suggest that Virginia could possibly do the same in a few weeks time.
- Research suggests that the Delta variant causes more severe and longer illness than prior strains.
- Vaccines are very effective at preventing serious illness and death. However, indoor mask usage is critical to reducing local transmission rates during this surge.

**25 per 100k**

Average Daily Cases  
 Week Ending August 8, 2021

**122 per 100k**

Potential Peak Average  
 Delta Variant Scenario  
 Daily Cases, Week Ending  
 September 12, 2021

**8,608**

Average Daily 1st Doses  
 August 1, 2021

**4,593**

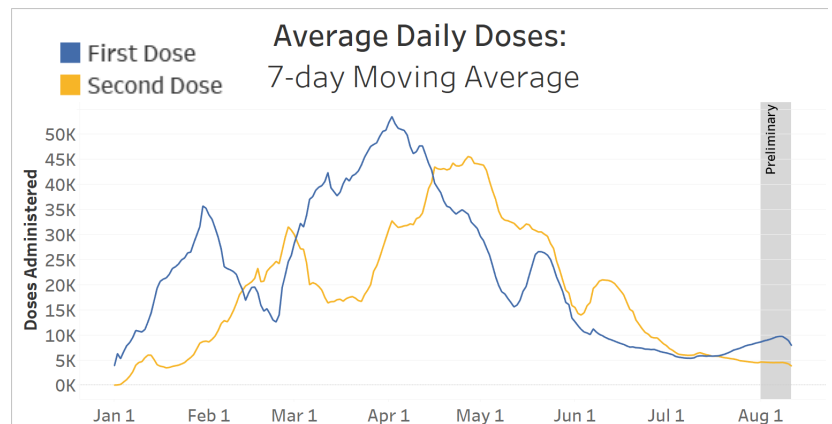
Average Daily 2nd Doses  
 August 1, 2021

## KEY FIGURES

### Reproduction Rate (Based on Confirmation Date)

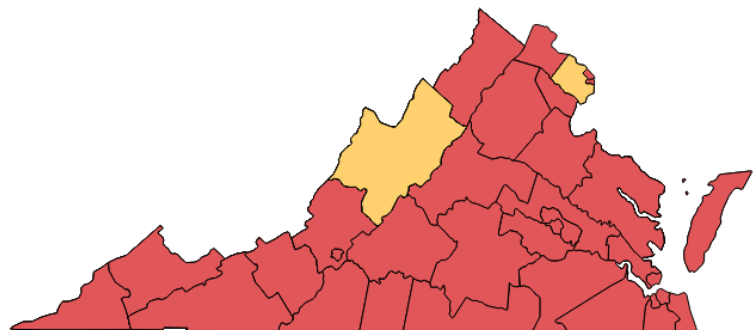
Region	R <sub>e</sub> Aug. 9th	Weekly Change
Statewide	1.155	-0.047
Central	1.139	-0.077
Eastern	1.169	-0.037
Far SW	1.169	-0.068
Near SW	1.121	-0.058
Northern	1.140	-0.055
Northwest	1.212	0.028

### Vaccine Administrations



### Growth Trajectories: 33 Health Districts in Surge

Status	# Districts (prev week)
Declining	0 (1)
Plateau	0 (1)
Slow Growth	2 (23)
In Surge	33 (10)



## THE MODEL

The UVA COVID-19 Model and the weekly results are provided by the UVA Biocomplexity Institute, which has over 20 years of experience crafting and analyzing infectious disease models. It is a (S)usceptible, (E)xposed, (I)nfectious, (R)ecovered epidemiological model designed to evaluate policy options and provide projections of future cases based on the current course of the pandemic. The Institute is also able to model alternative scenarios to estimate the impact of changing health behaviors and state policy.

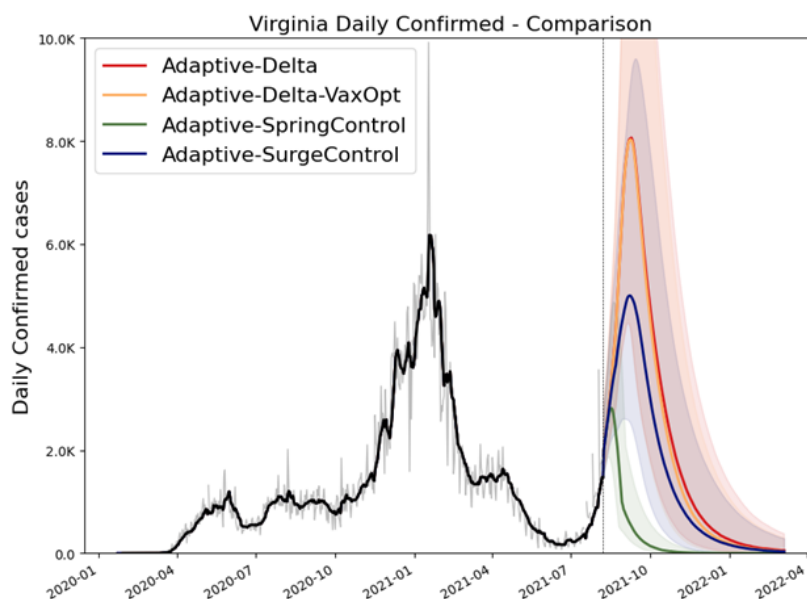
**COVID-19 is a novel virus, and the variant mix changes constantly. The model improves as we learn more.**

## THE PROJECTIONS

The UVA team continues to improve the model. The UVA model uses an "adaptive fitting" methodology, where the model traces past and current trends and uses that information to predict future cases at the local level. The "Adaptive-Delta" scenario adds the known effects of the newly dominant Delta variant (B.1.617.2) to transmission rates. This model supersedes the older "Adaptive" models which were calibrated to the earlier Alpha variant (B.1.1.7). All four scenarios also incorporate projections on the impact of vaccines, including current vaccination rates and the stalled rate of vaccine uptake. The "VaxOpt" scenarios show the impact of a *hypothetical* increase in vaccine acceptance to 85% of the adult population by Labor Day. Two hypothetical control scenarios have also been added. The "Surge Control" scenario shows the impact of a 25% reduction in transmission rates through mask-usage and social distancing, while the "Spring Control" scenario shows a return to the low transmission rates seen this spring.

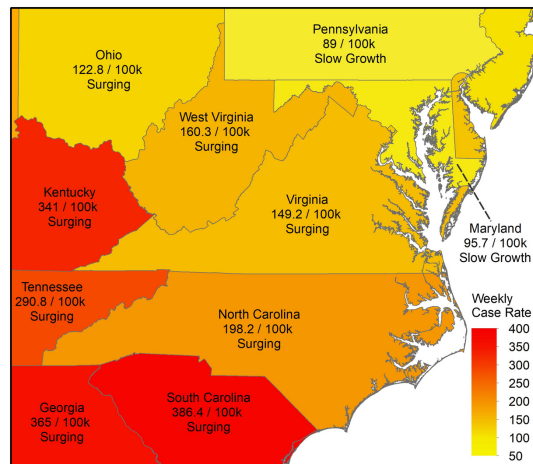
## MODEL RESULTS

With the Delta virus dominant, the model projects that cases will surge through the fall, reaching levels not seen since April in mid-September. Vaccination rates are still below herd immunity levels and, with many Virginians returning to normal, the virus has room to run. If the Delta variant continues to spread, **cases could possibly peak at levels higher than previous January peaks**. To lessen the projected peak, we must give vaccines time to have an impact. If vaccination rates pick up, the model estimates that **over 60,000 cases could be avoided**. Do your part to stop the spread. Please continue to **practice good prevention** including masking, and **get vaccinated** as soon as eligible.



## THE FOURTH WAVE

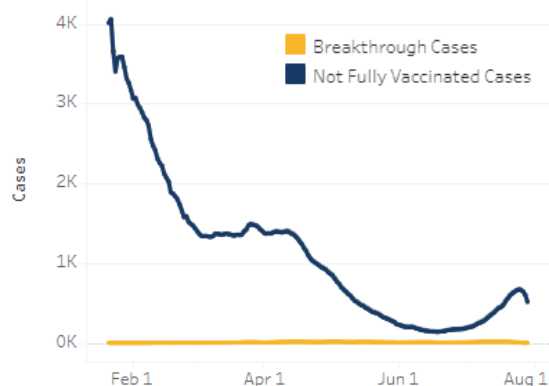
It doesn't take a complex mathematical model to see where we may be headed. The Delta variant is highly contagious, vaccination rates fall short of herd immunity levels, and community transmission is high. Common sense can tell you that a new surge is here. Dozens of other states, including neighbors like North Carolina, Kentucky, Tennessee, and West Virginia are already experiencing this. Florida, which is only slightly behind Virginia in percent of fully vaccinated residents (49.9% vs 55.4%), has already exceeded the highest weekly case rate it experienced during the winter. Across the Commonwealth, weekly incidence is up nearly 4x since the middle of July. Models from UVA, as well as those of other academic labs, suggest that Virginia will likely follow the trajectory of these other states and experience a large surge in the coming weeks.



## A "Meaner" Virus

Mounting evidence continues to suggest that the new Delta strain poses a **serious risk to the unvaccinated**. A recent study conducted in Scotland found that the Delta variant is almost twice as likely to cause hospitalization as prior strains. Research from Canada corroborates this, finding a similar 2.2x increase in hospitalization associated with Delta, and a near 4x increase in the likelihood of being transferred to Intensive Care. Delta also seems to prolong illness, with data from Singapore showing that those infected with Delta may, on average, be ill and infectious for five days longer than those infected with other strains. Furthermore, a systemic review published in Nature suggests that many people infected with symptomatic COVID19 could develop long-term side effects such as persistent fatigue or headaches. As Delta is now the dominant strain in Virginia, this ongoing surge may cause significant morbidity and mortality, with the brunt of both on the unvaccinated.

7-Day Moving Average of Cases by Date of Onset



## A Silver Lining

Though the threat of another wave is concerning, there is some good news. The vaccines remain **highly protective** against severe illness and death. The Mayo Clinic found that while breakthrough cases can occur more frequently with Delta, the vaccines are still very effective in protecting against hospitalization and severe illness. In Virginia, over 97% of recent hospitalizations and 98% of recent deaths have been among those who were not fully vaccinated. Studies have also shown that in general, those who are infected after vaccination have lower viral loads, fewer symptoms, and clear the infection a few days sooner than those who were not vaccinated. The vaccines also seem to produce a stronger antibody response against the Delta variant than is found in those with immunity gained from a prior infection.

## What Can You Do Now?

The most important thing you can do **for your own health** is to get vaccinated as soon as possible. Even the first dose of two-dose vaccines offers some protection. Protecting your community and Commonwealth is a different matter. The "VaxOpt" scenario on page two shows that even if we did reach an 85% vaccination rate by Labor Day, the Commonwealth will still experience a significant surge. It is simply too late for new vaccinations to bend the curve for September. Furthermore, infected vaccinated individuals can still spread the infection to others. Simply put, vaccines alone are not enough. To protect those around you, we urge everyone -- vaccinated and unvaccinated -- to continue preventive measures, including **social distancing** and **indoor mask wearing**. If we can reduce the transmission rate by 20%, shown in the "Surge Control" scenario on page two, we could potentially prevent thousands of cases across Virginia.