

August 20th, 2021

KEY TAKEAWAYS

- COVID19 cases continue to grow in all health districts of Virginia, and models continue to project a significant fourth wave of infections in the coming weeks.
- The model indicates that, in addition to vaccination, prevention measures such as mask usage and social distancing will be necessary to avoid the worst outcomes from Delta.
- Virginians are beginning to respond to Delta, which is affecting model projections.
- Vaccines are highly effective, particularly against hospitalization and death. Vaccination is the best method to protect yourself and your family.

21 per 100k

Average Daily Cases
 Week Ending August 15, 2021

87 per 100k

Potential Peak Average
 Delta Variant Scenario
 Daily Cases, Week Ending
 September 26, 2021

10,002

Average Daily 1st Doses
 August 11, 2021

4,916

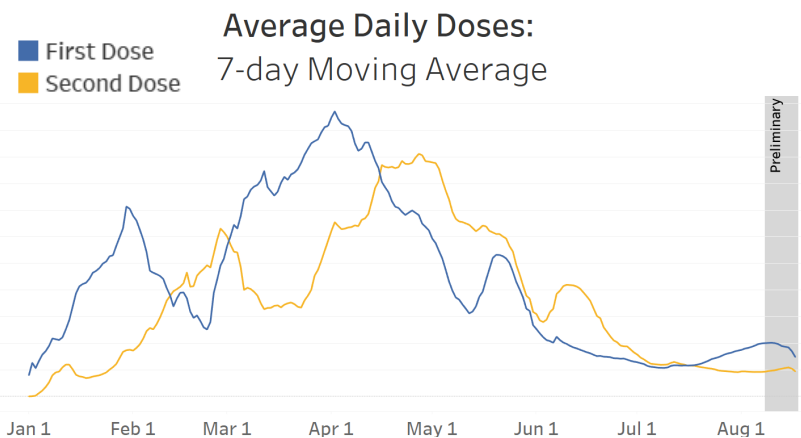
Average Daily 2nd Doses
 August 11, 2021

KEY FIGURES

Reproduction Rate (Based on Confirmation Date)

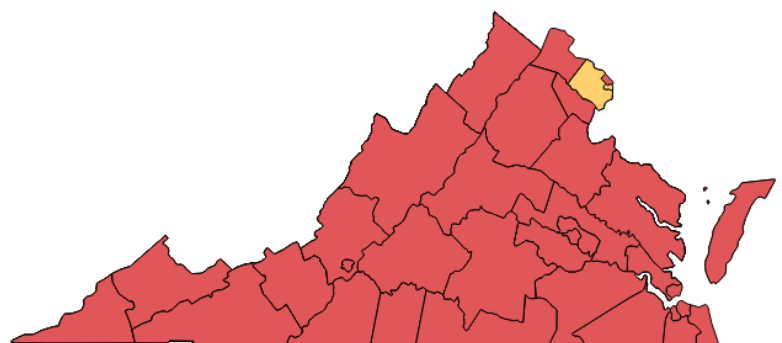
Region	R _e Aug. 16th	Weekly Change
Statewide	1.120	-0.035
Central	1.132	-0.008
Eastern	1.130	-0.040
Far SW	1.134	-0.034
Near SW	1.115	-0.006
Northern	1.071	-0.070
Northwest	1.131	-0.081

Vaccine Administrations



Growth Trajectories: 33 Health Districts in Surge

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



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.

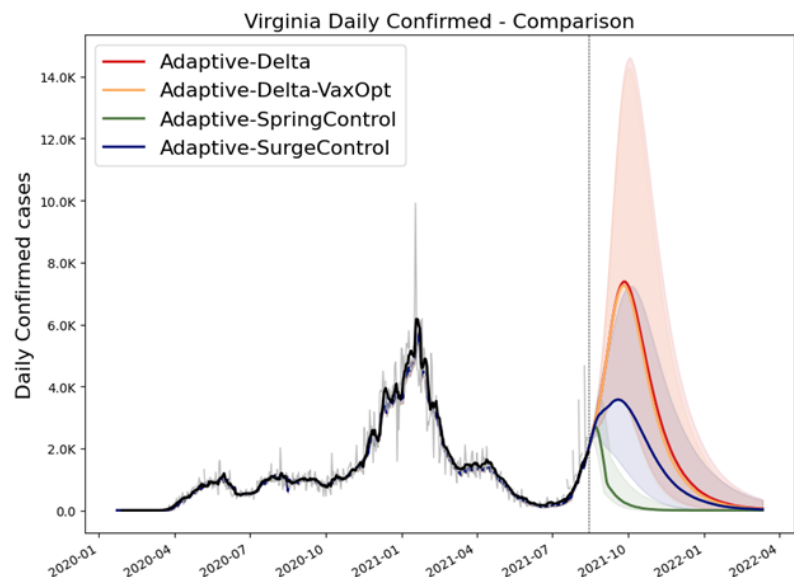
COVID-19 is a novel virus, and the variant mix changes constantly. The model improves as we learn more.

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 24,000 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.



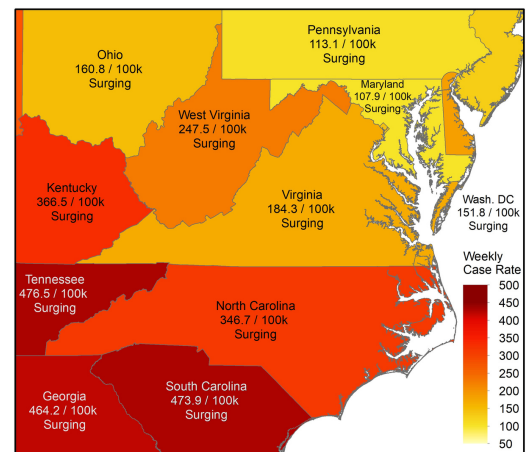
PREDICTIONS VS PROJECTIONS

All too often, we hear people making predictions - predicting election results, sports scores, or an Oscar win. The goal of these is often to "predict" a specific outcome, an attempt to divine exactly what will happen. By contrast, most models, including the UVA model, make "projections", showing what is likely to happen given certain parameters. These show what will likely occur if we continue along the current path, and allow us to evaluate the impact of different interventions. By showing where we are headed, models allow individuals and policy-makers to change course and avoid the worst outcomes.

The "Adaptive-Delta" scenario represents the course we are on right now -- heading towards a large surge of cases in September -- but we may change course tomorrow. Unlike other events, each and every one of us directly influences the course Virginia takes. Vaccination rates have increased slightly, mask usage has increased 11.7%, and the reproductive rate has fallen slightly. If Virginians continue these behaviors, the "Adaptive-Delta" projections will be wrong, and we will be glad that they are. But if nothing changes, we could be on course for a substantial fourth wave.

The Continued March of Delta

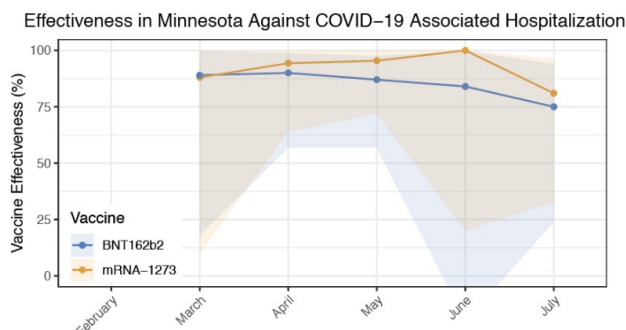
Across the nation, the Delta variant is causing a flood of new cases, and severely taxing the healthcare system. In the Commonwealth, 33 of 35 health districts are now "surging", as is every single neighboring state. Nationwide, hospitalizations are up 14.2% from last week, and some states are struggling to keep up. Florida is reporting that COVID19 patients are now taking up 55% of their Intensive Care Unit (ICU) beds, Mississippi reports only seven ICU beds left statewide, and Alabama has exceeded its ICU capacity entirely. Tennessee is reporting that most of its metro area hospitals are almost full and may have to divert patients. Models suggest that Virginia could be on the same path, just a few weeks behind the rest.



A Different Path for Virginia

The same models, however, also show that even a small change can make a large difference. The "Surge Control" scenario assumes that we find a way to reduce transmission rates by 25%, and projects that doing so would prevent 236,000 of the near 516,000 new cases expected by the end of 2021. But how do we do that?

With the speed Delta is spreading, vaccines will likely need some assistance. Research suggests that most people infected by the Delta variant will be infectious for nearly two days before feeling sick themselves. The same work suggests most new cases came from "presymptomatic" people who may have had no idea they were ill and putting others at risk. Our best solutions at this point are the tried-and-true preventive measures: mask-usage, social distancing, testing, and self-isolation when sick. Though surgical masks do protect the wearer, the primary goal of masking is "source control". A recent study suggests that mass mask-wearing could reduce transmission rates by 25.8%. In combination, masking and distancing could alter the course of this epidemic.



What Can You Do Now?

Follow preventive measures (wear a **mask** when indoors, social **distance** if possible, **isolate** when sick), and get vaccinated if you haven't already. The brunt of this fourth wave will be felt by the unvaccinated. Though breakthrough cases are possible, the Mayo Clinic has found (graph on left) that vaccines remain highly effective against hospitalization, despite the rise of the Delta variant.