

October 15th, 2021

KEY TAKEAWAYS

- While case levels remain very high, they are declining in most areas of the state. 31 health districts are in declining trajectories, and only one is in a slow growth trajectory. None are in surge trajectories.
- High case levels, combined with a substantial unvaccinated population, could lead to a significant holiday surge.
- Combined with a possible holiday COVID-19 surge, a severe flu could result in hospitalizations that exceed last January's peak.
- Vaccines are the best prevention for flu and COVID-19. Booster shot administrations currently exceed first and second dose COVID-19 vaccine administrations.

29 per 100k

Average Daily Cases
Week Ending Oct. 10, 2021

(43 per 100k)

Adaptive Scenario
Forecast Average Daily Cases **Already Peaked**
on September 19, 2021

5,330

Average Daily 1st Doses
Oct. 10, 2021

5,014

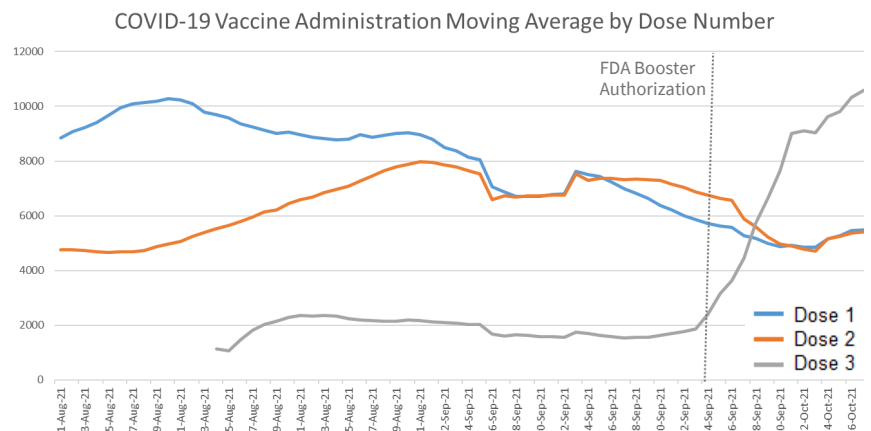
Average Daily 2nd Doses
Oct. 10, 2021

KEY FIGURES

Reproduction Rate (Based on Confirmation Date)

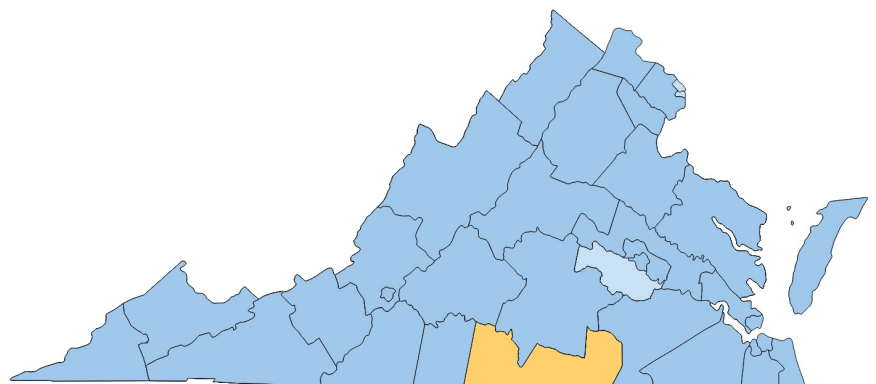
Region	R_e Oct 11th	Weekly Change
State-wide	0.889	-0.125
Central	0.902	-0.139
Eastern	0.892	-0.115
Far SW	0.858	-0.130
Near SW	0.863	-0.121
Northern	0.930	-0.059
Northwest	0.813	-0.206

Vaccine Administrations



Growth Trajectories: No Health Districts in Surge

Status	# Districts (prev week)
Declining	31 (31)
Plateau	3 (3)
Slow Growth	1 (1)
In Surge	0 (0)



THE MODEL

The UVA COVID-19 Model and these 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 county-level **S**usceptible, **E**xposed, **I**nfected, **R**ecovered (SEIR) 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 SCENARIOS

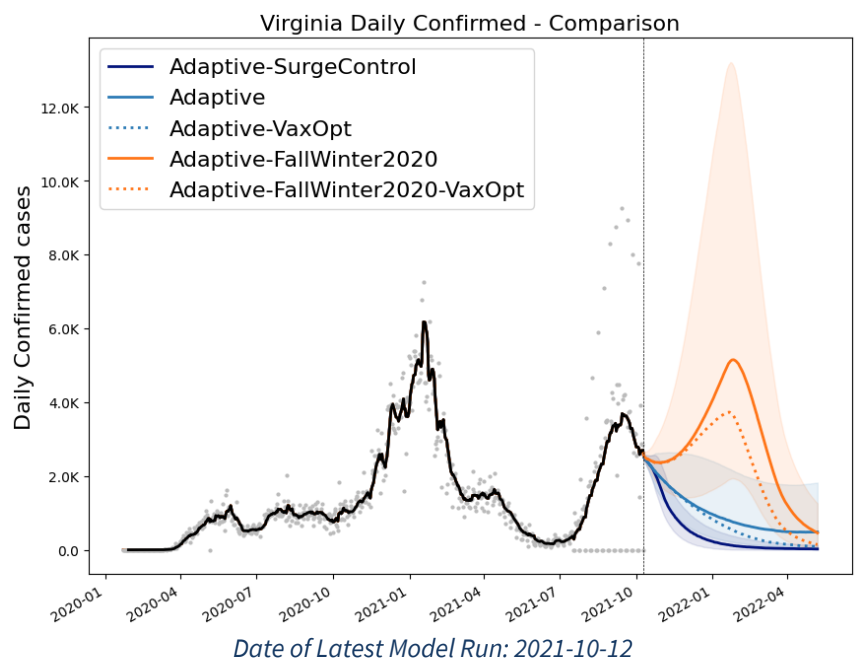
Scenarios remain unchanged from last week. The models use various scenarios to explore the path the pandemic is likely to take under differing conditions. The **Adaptive** scenario takes the current course of the pandemic at the county level, including the impact of the Delta variant and vaccines, and projects it forward. The **SurgeControl** scenario shows the likely impact of prevention and mitigation efforts (masking, social distancing, testing and isolating, etc.) by employing a 25% reduction in transmission rates. The "**FallWinter2020**" captures the transmission drivers of the entire 2020 holiday season and project them forward. In this scenario, transmission rates from October 2021 to February 2022 are manually set to reflect the transmission rates from the same time period last year, but boosted by Delta's enhanced transmissibility.

As usual, all of these scenarios can be augmented by the **VaxOpt** (optimistic vaccine) modifier that adds to the existing scenario a hypothetical increase in vaccinations among adults and assumes vaccine eligibility for children ages 5-11 years in November. Specifically, this modifier assumes that we reach an average of 85% coverage among adults, with a minimum of 65% in each county. Note that all scenarios also include the effects of natural immunity.

MODEL RESULTS

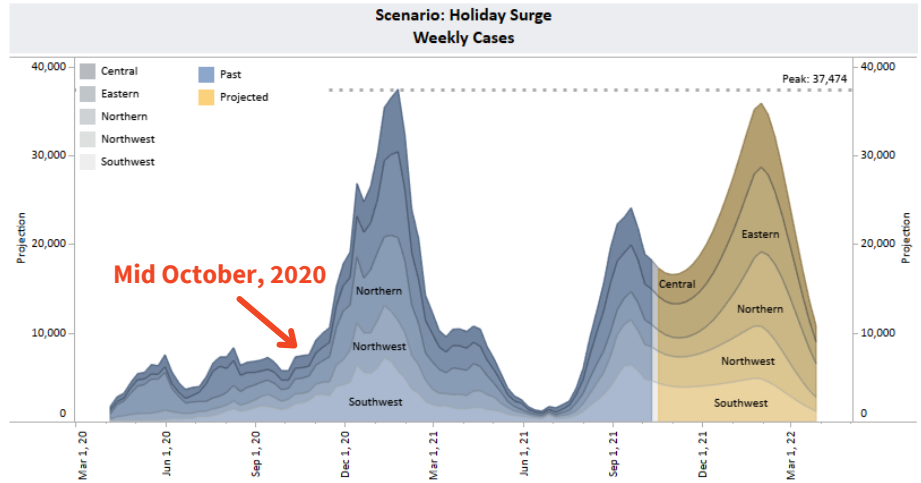
As with last week, the "present course" Adaptive scenario (blue), suggests that **cases have peaked and are now in a gradual decline**. The SurgeControl scenario (shown in indigo) again forecasts a much faster drop-off of case rates, reaching Summer 2021 lows by early December. Conversely, the FallWinter2020 (shown here in orange), projects a consistent rise in case rates possibly exceeding last January's peak.

The VaxOpt (dashed lines) scenarios, show that in the long-run, increased vaccination coverage could prevent thousands of cases in any scenario. Please do your part to stop the spread and continue to **practice good prevention**, including indoor masking, social distancing, and self-isolating when sick, and **get vaccinated** as soon as possible.



TO EVERYTHING THERE IS A SEASON

A year ago, Virginia was in a very tenuous situation as it entered the holiday season. Cases were as high as they had been to that point. More worrying, cases were beginning to grow, with a number of local health districts entering surge trajectories. Our partners at RAND were tracking growing risks, with seasonality and holiday travel chief among them. Ultimately, high and growing cases in October provided the foundation for the holiday surge Virginia experienced last winter.

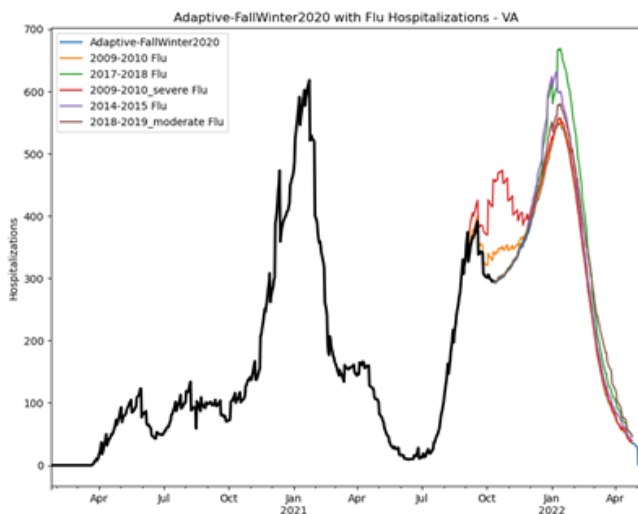


On the cusp of the 2021 holiday season the situation is different. Cases are declining in most health districts, yet, as we entered October, were at level three times higher than seen last October. While declining trajectories are good sign, high case levels may provide a better foundation for a holiday surge than existed last year. There is a large enough unvaccinated population that we could see a repeat of last year's surge.

Flu Season

Public health officials were concerned about another risk last year: the possibility that the annual flu season would further stress health systems already burdened by COVID-19. Fortunately, that scenario never came to pass. Although causes are not confirmed, it is likely that precautions taken to prevent the spread of COVID-19, combined with a record number of flu vaccinations, all but eliminated the flu last year. Again, the situation this year is different. Most public health restrictions have been lifted, and surveys suggest prevention efforts have declined. We are also unlikely to repeat the record vaccination rates seen last flu season. Much like with COVID-19, immunity to influenza wanes over time, meaning low exposure last year could translate to a large pool of susceptible Virginians this season. These factors could lead to a unusually bad flu season. Combined with the potential of a holiday COVID-19 surge, many are warning of the possibility of a "twindemic."

A Season for Vaccination



The exact timing and severity of flu seasons vary by year. Some flu seasons peak earlier or later, but most peak in January or February, corresponding with last year's COVID-19 peak, and the projected peak in the Fall Winter 2020 scenario. The UVA Biocomplexity Institute has examined past flu seasons to get an idea of the potential scale of a twindemic. Testing for flu is not as robust as for COVID-19, so the team examined hospitalizations instead. Flu seasons similar to ones seen in the winters of 2014-2015 or 2017-2018 could create, when combined with COVID-19, more hospitalizations than occurred during last year's COVID-19 surge.

Fortunately, we have tools readily available to protect ourselves from both arms of the twindemic. Prevention is important, vaccination is the key to preventing both flu and COVID-19, particularly for reducing hospitalizations. This season, be sure to get your flu and COVID-19 vaccinations, including booster shots when eligible. As always, Virginia's health is in our hands.