UVA COVID-19 MODEL WEEKLY UPDATE

October 29th, 2021

KEY TAKEAWAYS

- The cadence of COVID-19 projections has been reduced to bi-weekly. This is an abbreviated interim report.
- Case rates remain high, but continue to decline statewide. The reproductive rate is below 1.0 in all of Virginia's regions.
- New vaccinations are accruing slowly but steadily. Vaccination rates remain below community immunity levels in all regions.
- Similar to last year, holiday travel and winter weather could prompt a new surge in cases. Vaccination, including boosters when eligible, is your best protection during the holiday season.
- Stay safe during the holidays by following CDC guidance.

19 per 100k
Average Daily Cases Week Ending Oct. 24, 2021

(43 per 100k)
*Adaptive Scenario Forecast Average Daily Cases **Already Peaked** on September 19, 2021*

5,489 / 3,790
Average Daily 1st / 2nd Doses Oct. 24, 2021

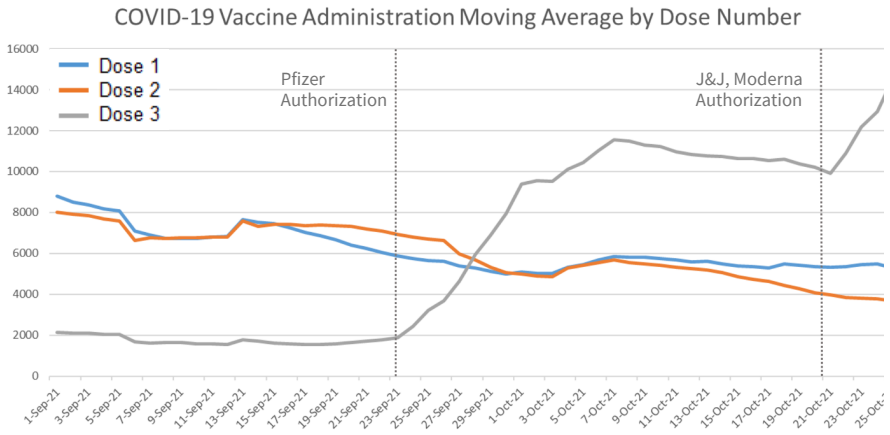
12,920
Average Daily Boosters Oct. 24, 2021

KEY FIGURES

Reproduction Rate
(Based on Confirmation Date)

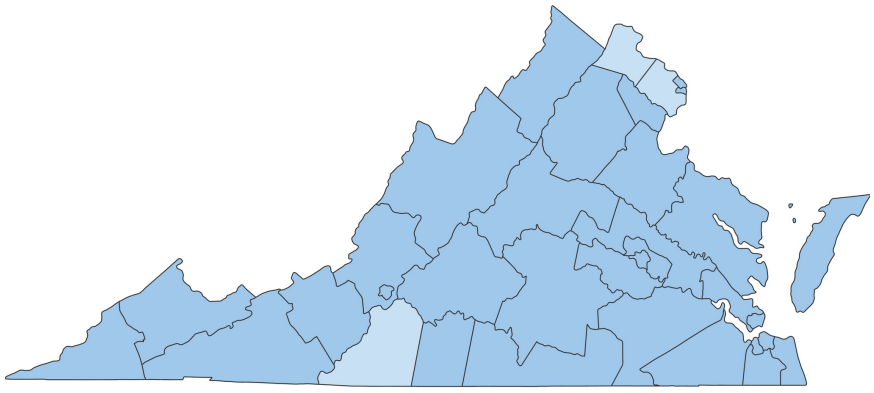
Region	R_e Oct 25th	Weekly Change
Statewide	**0.835**	**-0.045**
Central	0.871	0.053
Eastern	0.752	-0.072
Far SW	0.846	-0.023
Near SW	0.844	-0.044
Northern	0.886	-0.082
Northwest	0.839	-0.054

Vaccine Administrations



Growth Trajectories: No Health Districts in Surge

Status	# Districts (prev week)
Declining	32 (31)
Plateau	3 (4)
Slow Growth	0 (0)
In Surge	0 (0)



UNIVERSITY of VIRGINIA
BIOCOMPLEXITY INSTITUTE

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VDH VIRGINIA DEPARTMENT OF HEALTH

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

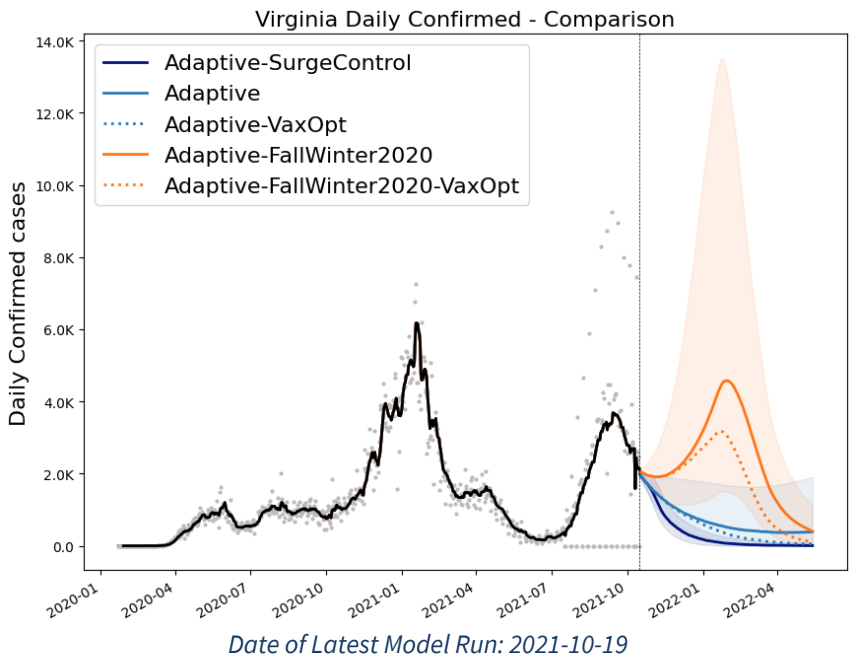
Scenarios remain unchanged from last week. The models use various scenarios to explore the path the pandemic is likely to take under differing conditions. The **Adaptive** scenario takes the current course of the pandemic at the county level, including the impact of the Delta variant and vaccines, and 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 projects 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

No change from 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.



Date of Latest Model Run: 2021-10-19