

August 28, 2020

KEY TAKEAWAYS

- Surges in most health districts are abating. Only one health district (Mount Rogers) remains in the upward swing of a surge scenario.
- Incidence is declining statewide as we closely approach a state of uncertainty in the Fall.
- With trends continuing in their current trajectory, we would expect to see over 187,000 total cases in Virginia by Thanksgiving.
- Statewide positivity rate hovers around 5-7% while the average time from onset to diagnosis has returned to the duration observed in the May and June (5.8 days).
- The transmission rate again remains below 1.0 statewide and has shown more stability than in past weeks. The transmission rate exceeds 1.0 only in Northern Virginia.

187,883
Cases Expected by Thanksgiving

.....

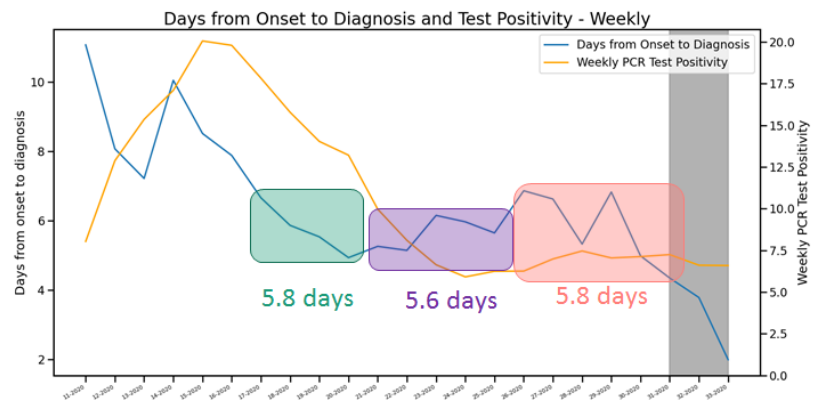
0.926
Reproduction Rate
Based on onset date
7 days ending Aug 15

KEY FIGURES

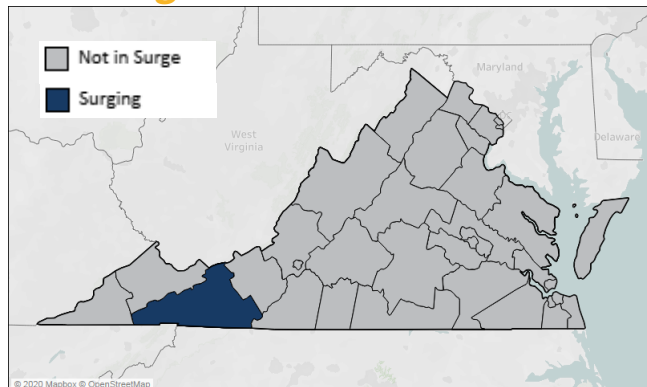
Reproduction Rate

Region	R _e Aug 15	Weekly Change
State-wide	0.926	-0.006
Central	0.917	-0.024
Eastern	0.848	0.057
Far SW	0.838	-0.013
Near SW	0.979	-0.063
Northern	1.018	-0.001
Northwest	0.885	-0.094

Case Detection



In Surge: 1 Health District



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 epidemiologic model designed to evaluate policy options and provide projections of future cases based on the current course of the pandemic.

THE PROJECTIONS

The UVA team continues to improve the model weekly. The UVA model now uses an "adaptive fitting" methodology, where the model precisely traces past and current trends and uses that information to predict future cases. These new projections are based on recent trends the model learns through its precise fitting of each individual county's cases. This model replaces the 8 scenarios reported in prior weeks. Each health district now has its own unique scenario.

The new model also includes two "what-if" scenarios to predict what we might see if cases increase in response to seasonal effects in the Fall, such as schools re-opening and changing weather patterns. It is still too early to know the impact that these seasonal effects will have. For now, the model assumes a 10-20% increase in transmissibility beginning on Labor Day. The model will be updated regularly to incorporate new information.

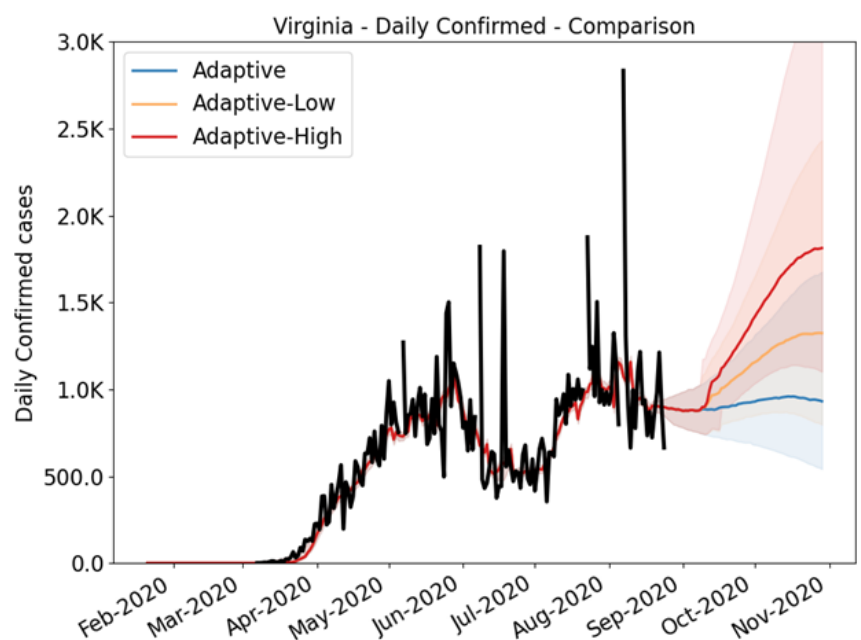
Low impact of seasonal effects: 10% increase in transmission starting September 8, 2020

High impact of seasonal effects: 20% increase in transmission starting September 8, 2020

MODEL RESULTS

With the new modeling approach, the current course predicts that confirmed cases already peaked at **7,358 cases per week** during the week ending **August 9th**. With cases continuing on this trajectory, we would expect **187,883** total confirmed cases by Thanksgiving. Anticipated seasonal changes in the Fall due to schools and universities re-opening, changes to workplace attendance, and the impact of weather patterns could lead to a surge beginning around Labor Day. With a 10% increase in transmissibility beginning on Labor Day, we would expect weekly cases to peak at 9,254 the week of ending November 1st. A 20% increase in transmissibility beginning on Labor Day would lead to a higher peak ending the week of November 8th with 12,684 weekly cases.

COVID-19 is a novel virus causing an unprecedented global pandemic and response. The model improves as we learn more about it.

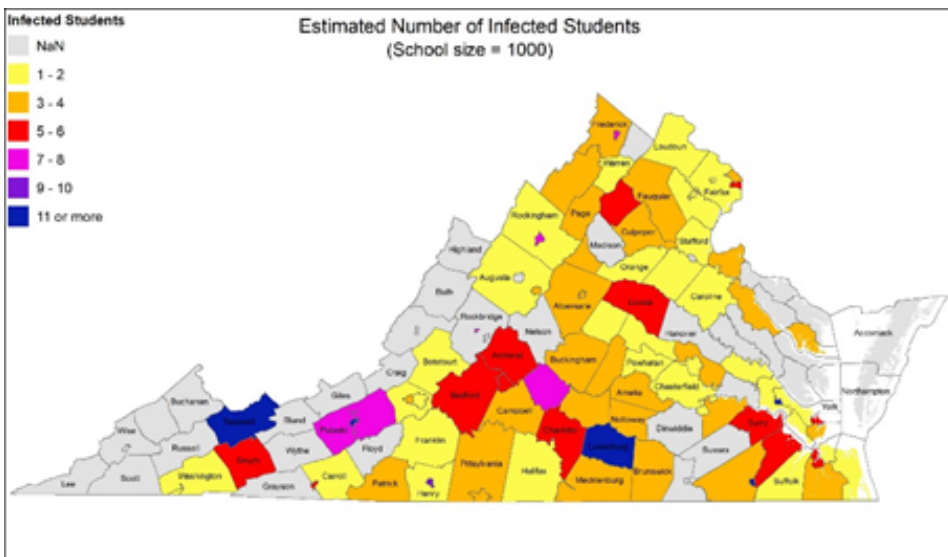
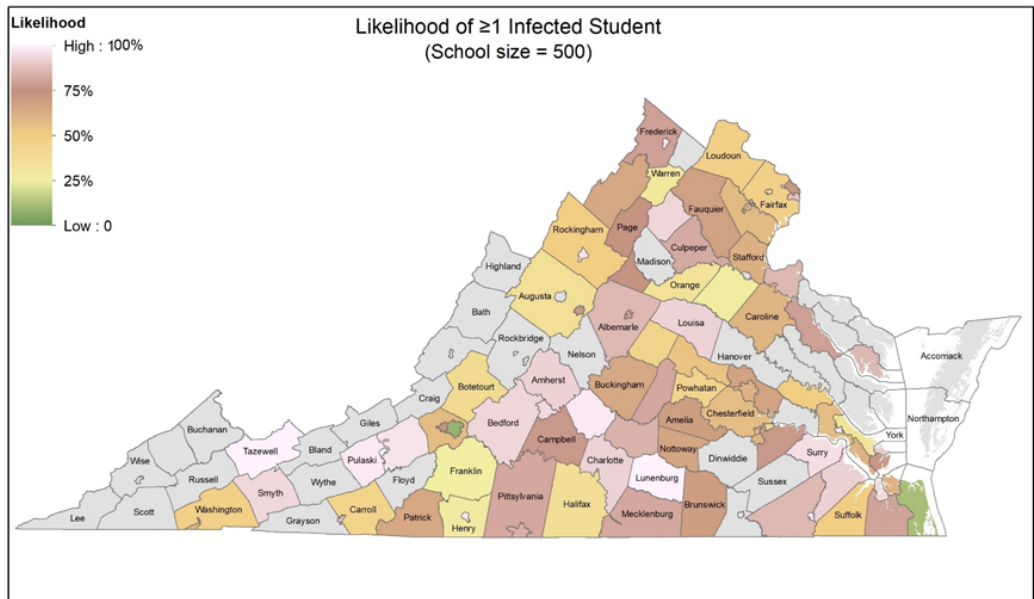


SCHOOLS RE-OPENING: ANTICIPATED PREVALENCE

With the start of the school year upon us, teachers, students, and parents are closely monitoring the status of virus transmission in schools. About half the [school districts in Virginia](#) have opted for fully remote learning, while others chose a combination of in-person, partial in-person, and hybrid learning models. The impact of these decisions is yet to be seen and will vary by a number of factors including school size and public health precautions taken.

Several researchers, including those at the University of Virginia and at the RAND Corporation, have estimated the likelihood that a school with 500 students will have at least one infected student when schools re-open. The UVA model, shown on the right, used incidence rates among school-aged children in the last week to calculate these probabilities. They further assume that for each case there are 6 other undetected cases.

As seen in the map to the right, most counties have a 50% or greater likelihood of having at least one infected student in a school size of 500. For about half the counties, the chances are about 2 in 3.



While a school with 500 students is likely to have at least one infected student in most counties, the estimated number of infected students is even higher in some areas. The map to the left shows the estimated number of infected students in a school with 1,000 students in each county. Schools in southern counties have the greatest risk for high infection rates. In Tazewell and Lunenburg, a school with 1,000 students would expect to have 11 or more infected students based on current school-age incidence rates in the county.

Once schools re-open and students begin interacting with one another, case rates could escalate quickly. In-school transmission risk will depend on precautions taken. It is important for students, teachers, and parents to remain vigilant and closely follow public health recommendations for transmission mitigation measures. With dedicated effort from all Virginians, we can continue on the current trajectory and avoid a resurgence of cases in the Fall. This best-case scenario could mean we have already surpassed the peak. However, a surge resulting in a 20% increase in transmission could push the anticipated peak closer to Thanksgiving. The outcome depends on each one of us.