VIRGINIA'S HEALTH IS IN YOUR HANDS. Do your part, stay at home.

UVA COVID-19 MODEL WEEKLY UPDATE

VDH VIRGINIA DEPARTMENT OF HEALTH

June 12, 2020

KEY TAKEAWAYS

- Public health restrictions paused the epidemic in Virginia and bought time
- The period of transition, from community mitigation to identify and contain, is a period of uncertainty
- The model shows several possible paths forward
- Impact of better detection and isolation are beginning to show but uncertainty remains
- Effect of events (e.g., protests, schools opening, rising cases in other states) are still unknown.

916,868

Cases Avoided so far

0.724

Reproduction Rate

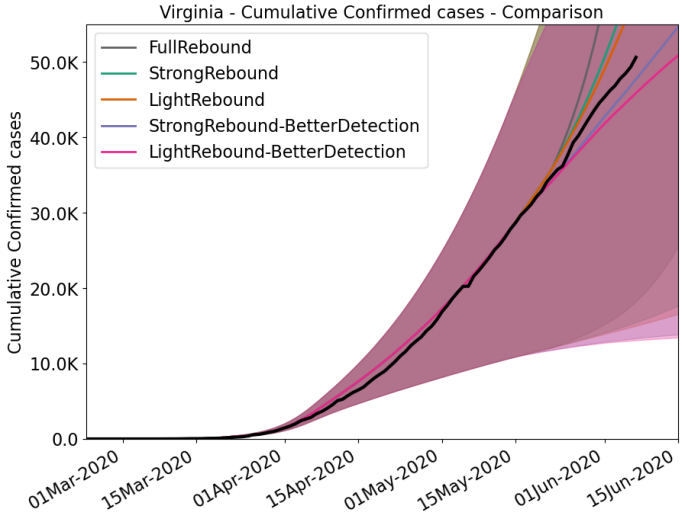
Based on onset date

7 days ending May 30

Region	May 30 R0	Weekly Change
State-wide	0.72	-0.34
Central	0.70	-0.59
Eastern	0.53	-0.79
Far SW	0.85	-0.08
Near SW	1.12	-0.16
Northern	0.71	-0.27
Northwest	0.94	0.01

For the moment, we can exhale. The community mitigation strategies employed by Virginia's residents and businesses paused the epidemic. The transmission rate, or R0, which averaged 2.2 before public health restrictions were put in place, has dropped dramatically. It is below 1.0 and dropping in all but one region of Virginia, indicating the number of new daily cases should decline. Indeed, a *Fortune* analysis of *New York Times* data showed Virginia had the largest statewide drop in new reported cases between May 26 and June 9. Though the scale was due in part to some nuances in data reporting, the trend in new cases by both report and onset date is distinctly downward. Other factors are holding steady as well. While restrictions are loosening, most Virginians are deciding to stay Safer at Home, and business are following the Forward Virginia guidelines. Though it is still early, increased testing and tracing seems to be having the desired effect.

Nevertheless, uncertainties remain. This week's model run shows several possible paths forward for Virginia. In those paths where Virginians continue to follow the Forward Virginia guidelines, and increased testing and contact tracing works, we continue to see a decline in new cases. On other paths, we could see hospitals overwhelmed in all most of the state. There is reason to be concerned. Right now Virginia's cumulative case counts, represented by the black line to the right, track right in the middle of these scenarios. Cases are rising in some states, including key border states and states along the I-95 corridor. Protests are bringing people together throughout the United States, including in Virginia. We are just beginning to reopen, and it is unclear what impact all of these factors will have. Although the situation looks good right now, the path we take depends on all of us.



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THE MODEL

The UVA COVID-19 Model was developed 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)nfected, (R)ecovered epidemiologic model specifically designed to evaluate policy options. That is to say, it is NOT designed to precisely predict future numbers. It is designed to tell us that, given what we know, IF we do "x", THEN we can expect "y". It does this by modeling scenarios.

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THE SCENARIOS

This week's model run examines six scenarios, one unmitigated scenario, and five tracking the public health restrictions lifted on May 15th for most of Virginia, and two weeks later for Northern Virginia, Richmond City and Accomack County.

Unmitigated: No community mitigation measures are put in place in Virginia, and the public does not change behavior.

Light Rebound: Once community mitigation measures are lifted, interactions return to 17% of pre-pandemic levels, with a moderate increase in transmission.

Strong Rebound: Once community mitigation measures are lifted, interactions return to 33% of pre-pandemic levels, with a stronger increase in transmission.

Full Rebound: Once public health restricitions are lifted, interactions return to 100% of pre-pandemic levels, with transmission returning to its pre-March 15 rate.

Better Detection: Both rebound scenarios are paired with a scenario in which new cases are identified and isolated 30% more quickly through a combination of increased testing and contact tracing.

MODEL RESULTS

The model estimates that community mitigation strategies employed in Virginia have **prevented 916,868 confirmed cases in Virginia so far.** Most of Virginia entered *Phase II: Safer at Home* of the Forward Virginia Plan on June 5, which is a slight lift of public health restrictions. If Virginia experiences better case detection and a light rebound of COVID-19 cases after public health restrictions are lifted, the model estimates new confirmed cases already peaked. However, if Virginia's residents relax social distancing even further, leading to a strong rebound, and case detection does not improve, the model forecasts new confirmed cases will peak at 67,590 per week during the week ending July 26, 2020, overwhelming hospitals in some areas. Though it is too early to be sure, the model indicates that even with a strong rebound, better detection may prevent hospitals from being overwhelmed. Doing nothing is not an option, however. Under the full rebound scenario, we expect new cases would peak at 187,920 during the July 4th holiday week.