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 26, 2020

KEY TAKEAWAYS

- The period of transition, from community mitigation to identify and contain, is a period of uncertainty
- Better detection and isolation has been effective thus far, and statewide data is tracking related scenarios
- However, there is wide variation by district, with some tracking scenarios showing higher growth rates.
- Outbreaks may have a large, but short term, impact on growth rates
- Statewide, the transmission rate has been below 1.0 since May 26.

178,160

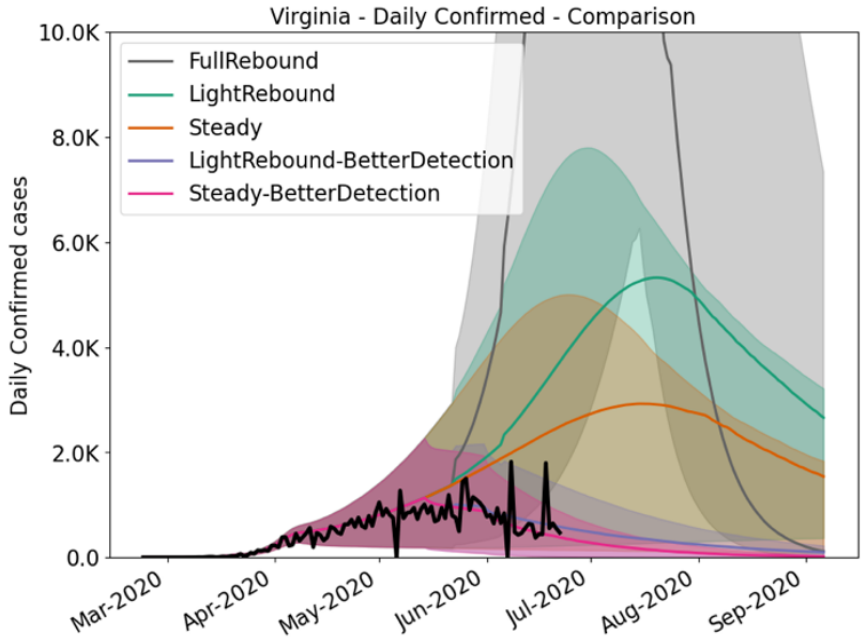
Cases Avoided since May 15

0.759

Reproduction Rate

Based on onset date
7 days ending June 16

See Page 3 for Comparisons by Local Health District



Virginia began Phase I of the Forward Virginia plan on May 15, followed by Phase II on May 28. This cautious approach, along with increasing numbers of tests and contract tracers, has paid dividends. Statewide, the transmission rate dropped below 1.0, the rate at which we expect new cases to decline, on May 26, and has continued to decline. As a result, Governor Northam was able to announce that Virginia will enter Phase III next Wednesday, July 1st. Some states that took a less cautious approach to reopening are seeing a surge in cases. Some, such as Texas, are pausing or rolling back earlier reopening plans. Despite this success, many risks and uncertainties remain, including growing cases in other states.

Additionally, not all regions of the state are faring as well as Virginia as a whole. Some Local Health Districts seem to be tracking closer to scenarios which, if the trend continues, could put some hospitals at risk of running out beds. Outbreaks associated with workplaces, long term care facilities, or other events, are driving some of these growth rates. Outbreaks can cause large but often short-term spikes in cases. This may be the case for Eastern Virginia, which is tracking the "Full Rebound" scenario. Eastern Virginia experienced several large outbreaks in April and May, but has since seen fewer new cases.

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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 five scenarios tracking the phased reopening approach which began May 15th for most of Virginia, and two weeks later for Northern Virginia, Richmond City and Accomack County.

Steady: Lifting public health restrictions has no effect on transmission rates due to increased mask use, hand washing, and other effective mitigation strategies.

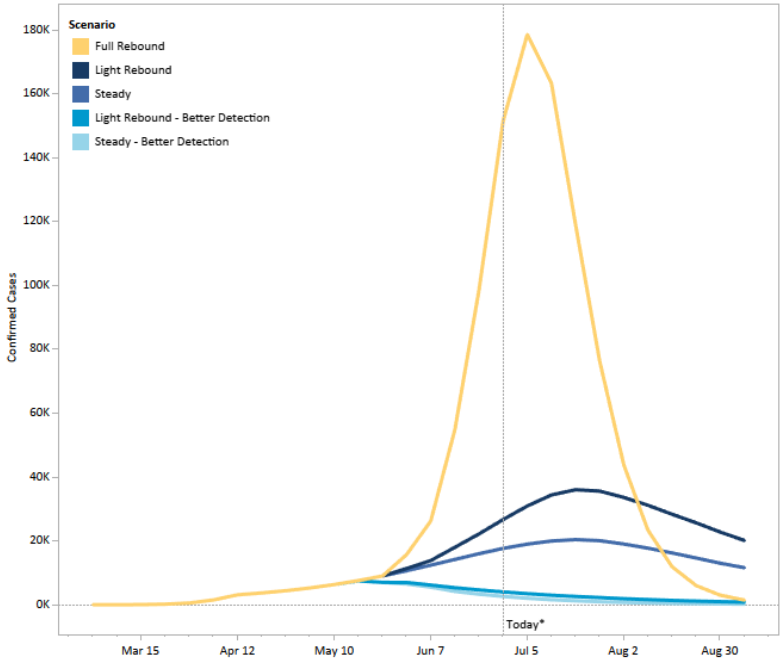
Light Rebound: Once community mitigation measures are lifted, interactions return to 17% of pre-pandemic levels, with a moderate increase in transmission.

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: Steady and light rebound scenarios are paired with a scenario in which new cases are identified and isolated more quickly through a combination of increased testing and contact tracing.

MODEL RESULTS

The model estimates that Virginia's cautious approach to reopening have **prevented 178,160 confirmed cases in Virginia since May 15.** Virginia will enter *Phase III: Safer at Home* of the Forward Virginia Plan on July 1, continuing the phased lifting of public health restrictions. This phased approach, along with increased testing and tracing, and the infection control practices of Virginia residents and businesses are having an impact. If Virginia experiences better case detection and steady transmission after public health restrictions are lifted, the model estimates new confirmed cases already peaked. Standing in stark contrast to this are the estimates if we simply returned to pre-emergency declaration behaviors, and transmission rates. In this case, the model forecasts that new confirmed cases will peak at 178,672 per week during the July 4 holiday. Indeed by taking the phased approach and remaining vigilant, the model estimates that we have avoided 178,160 confirmed cases since May 15.



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This series of charts shows how case growth rates in Local Health Districts (LHDs) compare to scenario estimates. LHD charts are located in similar position to their location on a Virginia map. Colors of the outer boxes correspond to region. The Color of the Confidence Interval curve (the wide swooshes) correspond to the nearest scenario. Model estimates are shown in the red dashed line, while actual case counts are in blue.

Scenarios

Light	Light Rebound, Detection same
Steady	Steady Interactions, Detection same
Light –Better Detection	Light Rebound, Detection improved
Steady – Better Detection	Steady Interactions, Detection improved
Full Rebound	Return to No mitigation