

November 6, 2020

KEY TAKEAWAYS

- Models are designed to project what could happen based on current trends but do not forecast what will happen. Behavioral responses drive changes in current trends.
- The statewide reproduction rate jumped back above 1.0, and all regions are above 1.0. Last week's statewide rate was revised upward, and has been above 1.0 since late September.
- Weekly incidence in Virginia (15/100K) is rising. Nationally, incidence continues to increase (27/100K), particularly in the Midwest states.
- National and state trends are concerning as we enter the holiday season, heralding colder weather and increased travel.

208,059
 Cases Expected by Thanksgiving

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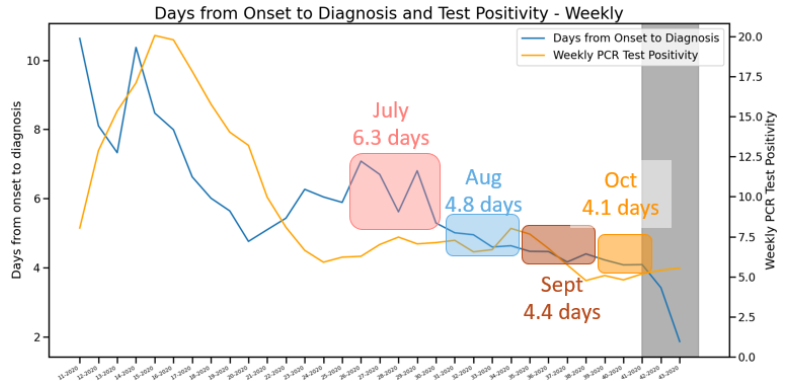
1.087
 Reproduction Rate
 Based on onset date
 7 days ending Oct 24

KEY FIGURES

Reproduction Rate

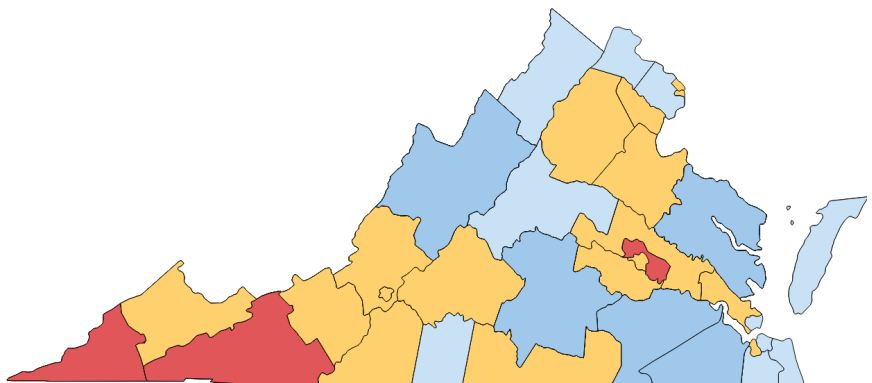
Region	R _e Oct 24	Weekly Change
State-wide	1.087	0.119
Central	1.079	0.168
Eastern	1.046	0.004
Far SW	1.366	0.136
Near SW	1.025	0.049
Northern	1.092	0.122
Northwest	1.074	0.157

Case Detection



Growth Trajectories: 3 Health Districts in Surge

Status	# Districts (last week)
Declining	5 (10)
Plateau	10 (10)
Slow Growth	17 (11)
In Surge	3 (4)



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)nfected, (R)ecovered epidemiologic model designed to evaluate policy options and provide projections of future cases based on the current course of the pandemic.

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

THE PROJECTIONS

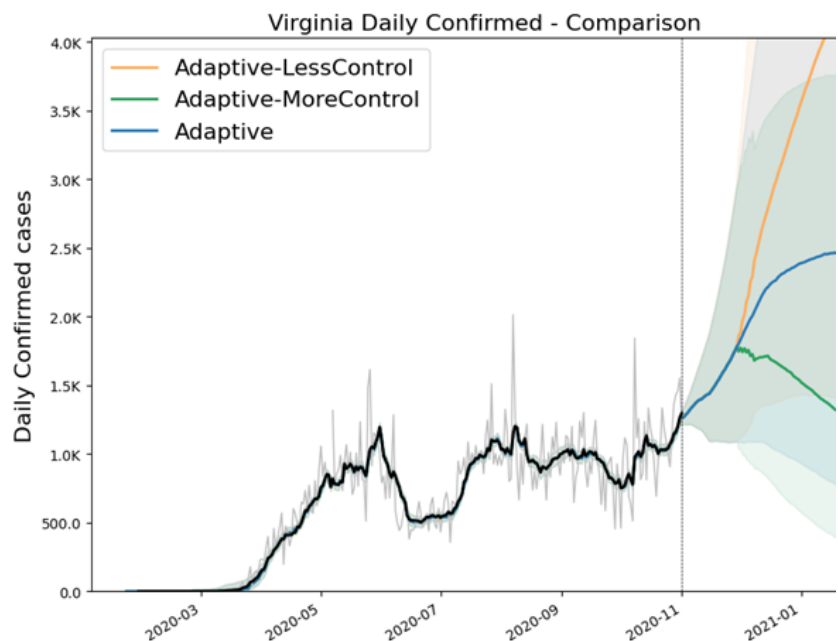
The UVA team continues to improve the model weekly. The UVA model now uses an "adaptive fitting" methodology, where the model precisely traces past and current trends and uses that information to predict future cases. These new projections are based on recent trends the model learns through its precise fitting of each individual county's cases. The new model also includes two "what-if" scenarios to forecast how case growth may respond to seasonal effects, such as changing weather patterns and holiday travel. These "what-if" scenarios are:

Less control of seasonal effects: 15% increase in transmission starting November 26, 2020

More control of seasonal effects: 15% decrease in transmission starting November 26, 2020

MODEL RESULTS

With the adaptive modeling approach, the current course predicts that confirmed cases continue to increase through model projection period **with over 17,000 weekly cases by January 17th**. If we continue on this trajectory, we would expect over 208,000 total confirmed cases by Thanksgiving. However, there are a number of risks on that could influence case growth over the next several weeks, including fall weather, the holiday season, and a national surge in cases. If these result in a jump in case growth, cases exceed 28,000 per week by mid-January. However, if Virginians respond by improving prevention efforts such as hand washing, social distancing, wearing masks, and avoiding indoor gatherings, cases could peak in early December, at just over 12,000 cases per week. Virginia's health is in our hands. Follow guidance in the [Forward Virginia](#) plan to help control COVID.

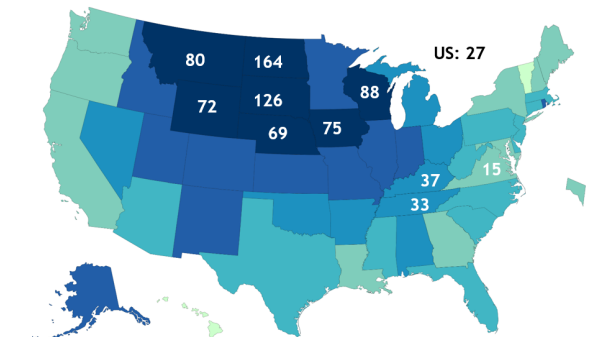


CONCERNING TRENDS

The past few weeks have seen a number of concerning trends nationally and in Virginia. Nationally, COVID-19 incidence continues to surge upward. This latest wave began in the Midwest but is beginning to radiate outward. Closer to home, several Virginia border states are experiencing high incidence rates. In Virginia, Southwest Virginia is experiencing high and growing incidence. In other regions, slower but growth is beginning to have an impact. While Virginia remains in a *relatively* good place compared to much of the country, incidence is high. These trends are concerning as we enter the winter months.

The National Situation

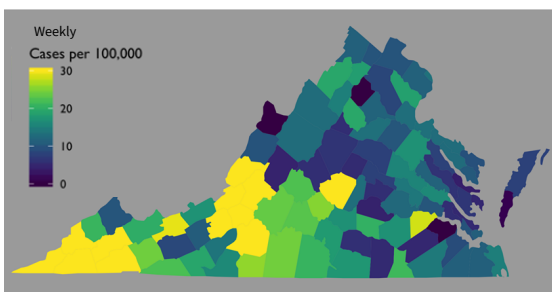
The Dakotas are the epicenter of the latest wave of COVID-19. On October 15, the Dakotas had weekly cases per 100,00 residents in the 70s: 72 per 100k in South Dakota and 77 per 100k in North Dakota. As of yesterday weekly cases per 100k were in the hundreds there: 126 in South Dakota and an astounding 164 in North Dakota. By comparison, there were 27 weekly cases per 100k nationally, and 15 in Virginia. The Dakotas also had the highest number of COVID-19 deaths per 100k residents over the last seven days. Several states, including Wisconsin, Iowa, Wyoming and Montana have now reached or exceeded the weekly incidence rates the Dakotas experienced three weeks ago. Due to the incubation period of COVID-19, it is likely incidence rates will continue to increase for at least the next few weeks. Due to this and growing seasonal risks, this third wave may not subside as quickly as earlier waves in other areas of the country and may continue to grow and spread. Nationally, 23 states are in surge trajectories as defined by our partners at the [UVA Biocomplexity Institute](#), including most Midwest states.



Weekly Cases per 100,00 Residents by State as of November 5, 2020. Source: [CDC COVID Data Tracker](#)

Closer to Home

All states bordering Virginia, along with the District of Columbia, have weekly cases over 10 per 100k, which our partners at [RAND](#) categorize as high case loads. Kentucky, Tennessee, and West Virginia all have weekly cases over 20 per 100k, categorized as very high case loads. Kentucky and Tennessee are both in surge trajectories, while West Virginia is in a slow growth trajectory. All other neighboring states are, like Virginia, plateauing with high case loads.



Weekly Cases per 100,00 Residents as of November 4, 2020. Source: [RAND](#)

In Virginia

For the past few weeks, cases per 100k residents in Virginia have been fairly stable. However, as is often the case, statewide averages can mask local disparities. Low weekly case counts in more populous parts of the state are overshadowing burgeoning cases in Southwest Virginia, including high incidence in Appalachia and in the Roanoke Valley. Weekly cases per 100k in these areas match the very high case loads in neighboring Kentucky, Tennessee and West Virginia. Meanwhile, persistent slow growth in Central Virginia and some areas of Northern Virginia are beginning to affect long-term projections.

Outlook

The combination of exceptionally high and surging cases in the Midwest, very high and high case loads on Virginia's borders, and very high case loads in some areas of Virginia is concerning, especially as we approach the winter months. It is essential that Virginians take steps now to prevent a larger surge. Our partners at [RAND](#) [note](#) that the 18- to 29-year old population can be a major source of spread. It is essential that all Virginians do their part to stop the spread by practicing [basic prevention](#) and following the guidance in the [Forward Virginia](#) plan. Virginia's health is in your hands.