September 16, 2022

KEY TAKEAWAYS

- Reported case rates across the Commonwealth continue along a slow decline. They are down by about 30% since this time last month. The statewide effective reproduction number (R_e) is also now well below one at 0.833.

- Despite decreasing case rates at the state level, fifteen of Virginia's 35 districts are in growth trajectories with three in surge. All three were also in surge last week.

- Thirty-eight localities are still at "High" community levels. Masking in indoor public places is recommended for everyone in these regions. A further 52 localities report "Medium" community levels where masking is suggested for high-risk individuals.

- Hospitalizations in Virginia have begun a slow decline. They are now down about 10% compared to this time last month. Models continue to project a slow decline in hospitalizations in the coming weeks.

- BA.5 continues as the dominant subvariant in Virginia. But BA.4.6 is slowly gaining ground. At the moment there is no significant growth of BA.2.75 or BF.7 in Virginia, but the CDC and VDH are carefully tracking both.

- Models continue to suggest the possibility of a major surge should a new variant coincide with the Holiday Season. They also suggest that bivalent boosters could save hundreds of lives and prevent thousands of hospitalizations in Virginia.

20.7 per 100k
Average Daily Cases Week Ending Sept. 12, 2022

0.833
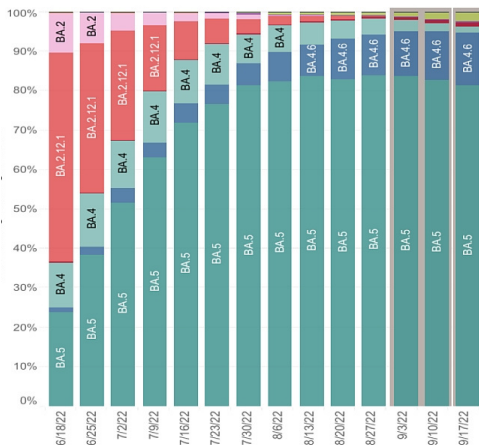*Statewide Reproduction Number as of Sept. 12, 2022*

38
*Virginia Localities at **High** CDC Community Levels as of Sept. 15, 2022*

52
*Virginia Localities at **Medium** CDC Community Levels as of Sept. 15, 2022*
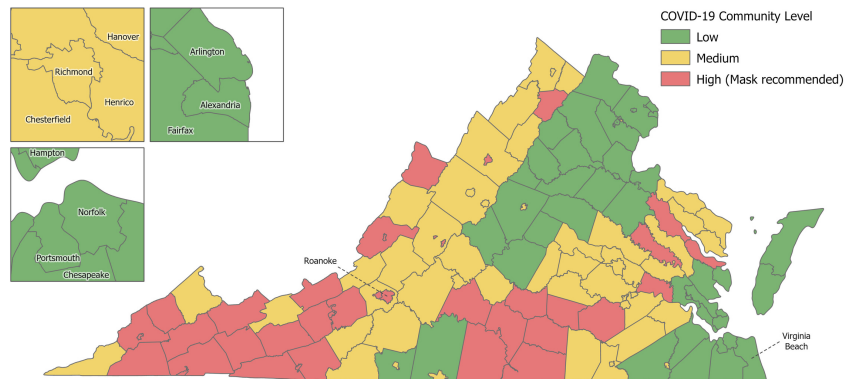
KEY FIGURES

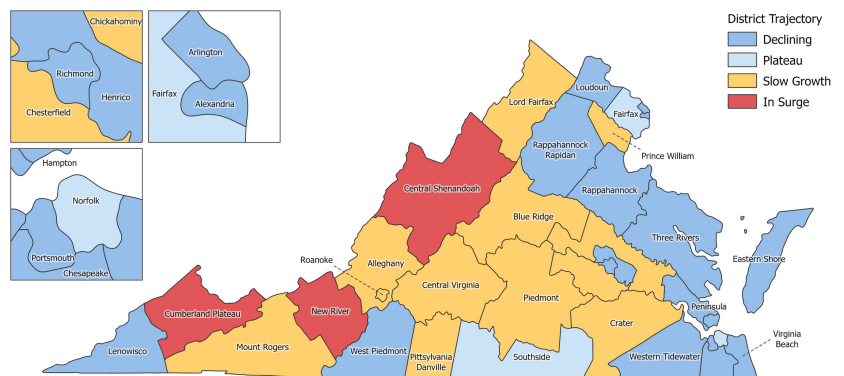## Variant Mix – HHS Region 3

CDC Community Levels

As of September 15, 2022

Click Map for Full Size Image

Growth Trajectories: Three Health Districts in Surge

Status	# Districts (prev week)
Declining	17 (20)
Plateau	3 (3)
Slow Growth	12 (9)
In Surge	3 (3)

Click Map for Full Size Image

VIRGINIA'S HEALTH IS IN OUR HANDS. Do your part, stop the spread.

UNIVERSITY*of* VIRGINIA
BIOCOMPLEXITY INSTITUTE

**UVA COVID-19 MODEL
WEEKLY UPDATE**

VDH VIRGINIA
DEPARTMENT
OF HEALTH

THE MODEL

The UVA COVID-19 Model and 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 health district-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 periodically. These models improve as we learn more.*

THE SCENARIOS

Unchanged: The model uses scenarios to explore the potential paths the pandemic may take under future conditions. Model projections take a variety of factors into account, including current variants, vaccine uptake, vaccination/boosting rates, previous infection, waning immunity, weather, and behavioral responses. The "**Adaptive**" scenario represents the current course of the pandemic, projecting it forward with no major changes. The "**VariantX**" modifier explores the potential impact of a new variant emerging in the next three months. This hypothetical variant is imagined as having the same immune escape and transmissibility advantages over BA.4/5 that BA.4/5 did over the earlier BA.2. See page three of the July 15 report for details. The "**FallWinter"** modifier layers seasonal increases associated with colder weather, holiday gatherings, and travel, on top of the base scenarios. It does this by artificially adjusting transmissibility between September and January to match transmissibility from the same time last year. The new "**OptBooster**" (optimistic) and "**PessBooster**" (pessimistic) modifiers assume that a bivalent vaccine booster campaign will begin in September. The optimistic scenario assumes that 90% of those getting a Flu vaccine will also get a bivalent COVID19 booster. The pessimistic scenario assumes that 45% will.
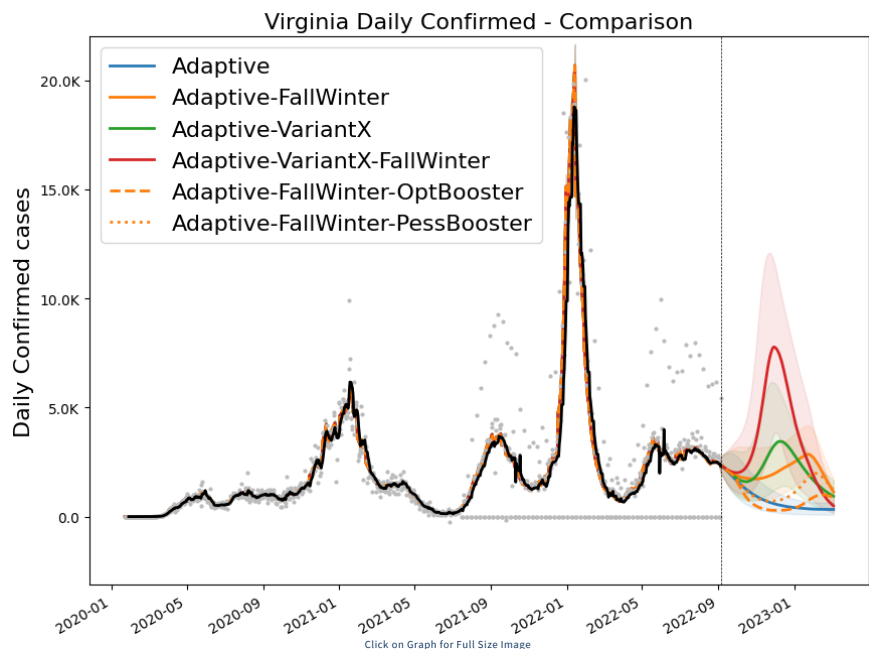
MODEL RESULTS

Unchanged: As always, the current course "**Adaptive**" scenario is shown in blue. This scenario projects a continued slow decline of cases. In this scenario, Virginia will fall below 1,000 daily cases by October's end.

Both the "**Adaptive-FallWinter**" (orange) and "**Adaptive-VariantX**" (shown in green) scenarios project mild surges, peaking at around 2,500 daily cases in January, and 3,500 daily cases in December, respectively.

The "**Adaptive-VariantX-FallWinter**" (red) combines both a hypothetical new variant with the seasonal forcing of Fall / Winter. The combination allows for a significant surge, peaking at almost 8,000 daily cases in early-December before quickly declining.

The "**Adaptive-FallWinter**-**EarlyBooster**" and "**Adaptive-FallWinter-LateBooster**" scenarios (dashed orange lines) show that even in the case of a Fall / Winter surge, a booster campaign can quickly tamp down cases. Models suggest that such campaigns could reduce hospitalizations by 60%.

Virginia Daily Confirmed - Comparison

Legend:
— Adaptive
— Adaptive-FallWinter
— Adaptive-VariantX
— Adaptive-VariantX-FallWinter
-- Adaptive-FallWinter-OptBooster
··· Adaptive-FallWinter-PessBooster

Y-axis: Daily Confirmed cases (0.0, 5.0K, 10.0K, 15.0K, 20.0K)
X-axis: 2020-01, 2020-05, 2020-09, 2021-01, 2021-05, 2021-09, 2022-01, 2022-05, 2022-09, 2023-01

Click on Graph for Full Size Image

Date of Latest Model Run: September 7, 2022
Date of Next Model Run: September 21, 2022

Please note: The data and projections shown here reflect reported cases. During the Omicron wave, testing shortages resulted in far fewer infections being reported as cases. This suggests fewer total infections than experienced in January. Please see page three of the May 13th modeling report for more details.

(Explore the model results in detail on this dashboard)

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