October 14, 2022

KEY TAKEAWAYS

- Statewide case rates continue to decline. But some indicators suggest this trend is slowing. The effective reproduction number (R_e) has climbed back up to 0.972. This is up from 0.865 last week. Ten more districts have moved into growth trajectories since last week. One district is in surge, the first in a month.

- Only five localities are reporting "High" community levels, though not the same five as last week. The CDC recommends masking in indoor public places for everyone in these communities. Masking is also recommended for high-risk individuals in the 32 localities with "Medium" community levels.

- Hospitalizations in Virginia are still trending downward. They are now down 10% since the start of October. Despite this, they are falling slower than models expected. The rapid declines seen in September may not continue for much longer.

- Variant proportions continue to evolve with no surprises. BF.7 and BA.4.6 are slowly gaining ground against the still dominant BA.5. Newcomers like BA.2.75.2 are not growing significantly in Virginia at the moment.

- Models suggest that a winter surge is possible. Transmission rates may begin to rise in the coming weeks. If so, a bivalent booster campaign could prevent 150,000 cases in the coming months. Please consider getting boosted as soon as possible.

500,740
Total Bivalent Booster Doses Administered

5.95%
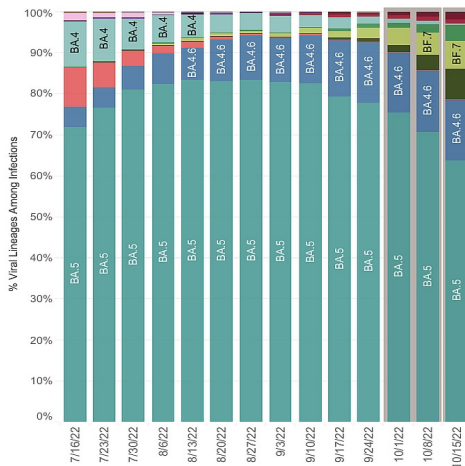*Percentage of Virginians with a Bivalent Booster*

12.2 per 100k
Average Daily Cases Week Ending Oct. 10, 2022

5
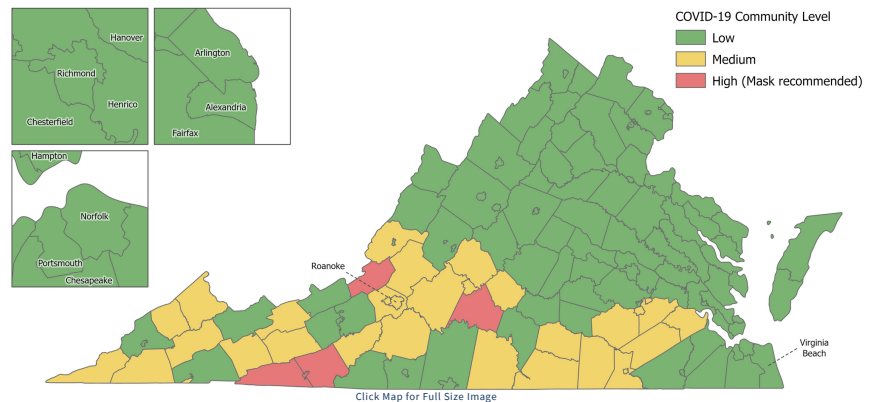*Virginia Localities at **High** CDC Community Levels as of October 13, 2022*
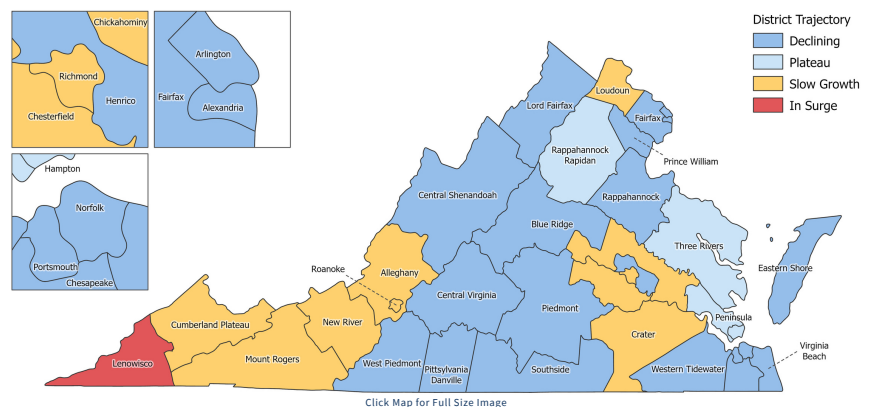
KEY FIGURES

Variant Mix – HHS Region 3

CDC Community Levels

As of October 13, 2022

COVID-19 Community Level
- Low
- Medium
- High (Mask recommended)

Click Map for Full Size Image

Growth Trajectories: One Health District in Surge

Status	# Districts (prev week)
Declining	20 (31)
Plateau	4 (3)
Slow Growth	10 (1)
In Surge	1 (0)

District Trajectory
- Declining
- Plateau
- Slow Growth
- In Surge

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 few 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.
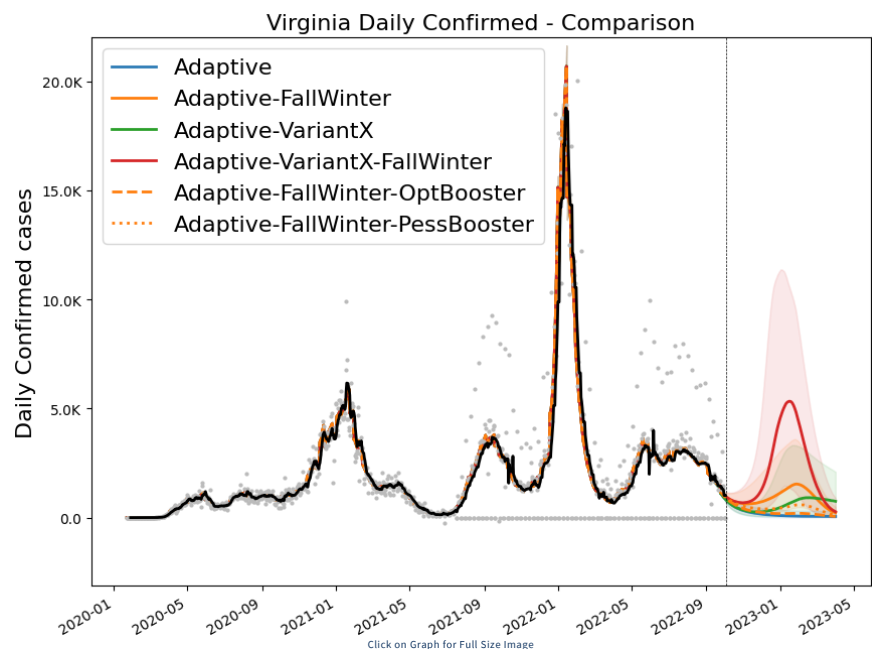
MODEL RESULTS

Unchanged: As always, the current course "**Adaptive**" scenario is shown in blue. This scenario projects a continued decline of cases. In this scenario, Virginia will fall below 500 daily cases by late-October.

Both the "**Adaptive-FallWinter**" (orange) and "**Adaptive-VariantX**" (shown in green) scenarios project mild surges. The former peaks at 1,500 daily cases in late January, the latter at 1,000 daily cases in February.

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 5,300 daily cases in mid-January before quickly declining.

The "**Adaptive-FallWinter**-**OptBooster**" and "**Adaptive-FallWinter-PessBooster**" scenarios (dashed orange lines) show that a booster campaign can severely curtail a Fall/Winter surge. The optimistic booster scenario cuts total cases by over 65%. The pessimistic scenario cuts them by 45%.

Virginia Daily Confirmed - Comparison

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

Click on Graph for Full Size Image

Date of Latest Model Run: October 5, 2022
Date of Next Model Run: October 19, 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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