September 30, 2022

KEY TAKEAWAYS

- Case rates continue to dwindle in Virginia. They are now down 45% since the start of September. The effective reproduction number (R_e) is now below 0.9 for all health regions as well as statewide. Twelve of Virginia's thirty-five health districts are in slow growth trajectories, but none are in surge. Most districts are in decline.

- Only five localities in the Commonwealth are still reporting "High" community levels. Masking in indoor public places is still recommended for everyone in these communities. A further 49 localities are reporting "Medium" community levels. High-risk individuals in these communities should continue masking as well.

- Hospitalizations in Virginia have fallen significantly. They are now down by over 25% since the start of September. Hospitalizations typically lag reported cases by a few weeks. As such, this decline will likely continue in the coming weeks.

- Variant proportions continue to evolve as expected. BA.4.6 and BF7 are making slow progress against BA.5 which remains dominant. There is no significant growth by any novel variant in the Commonwealth.

- Models suggest the possibility of a winter surge. If the Commonwealth follows the same trajectory it did in 2020 and 2021, transmission rates will begin increasing in the next few weeks. It is critical that Virginians get boosted this fall. Models suggest that a bivalent booster campaign could prevent 150,000 cases by March.

15.8 per 100k
Average Daily Cases Week Ending Sept. 26, 2022

0.859
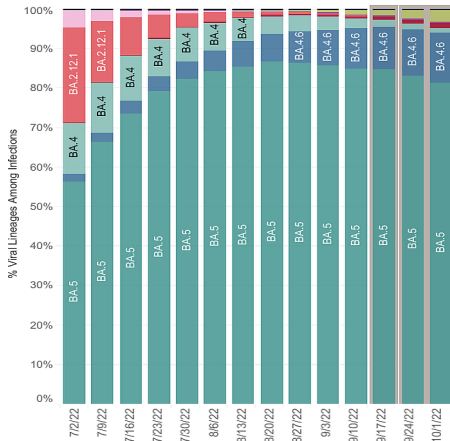*Statewide Reproduction Number as of Sept. 26, 2022*

5
*Virginia Localities at **High** CDC Community Levels as of Sept. 29, 2022*

49
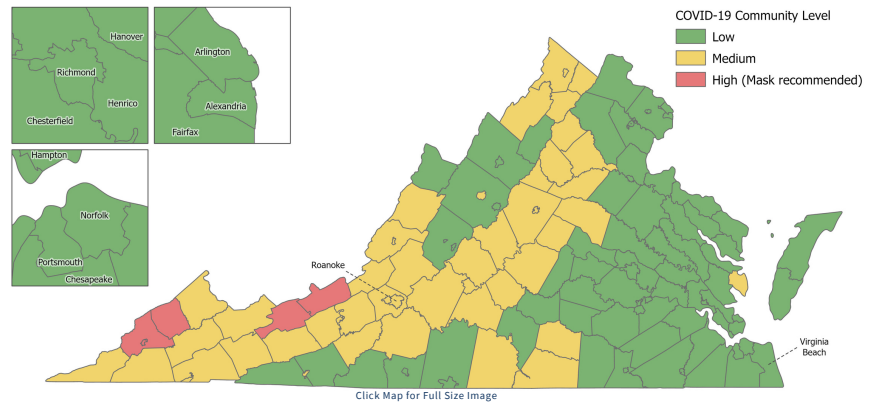*Virginia Localities at **Medium** CDC Community Levels as of Sept. 29, 2022*
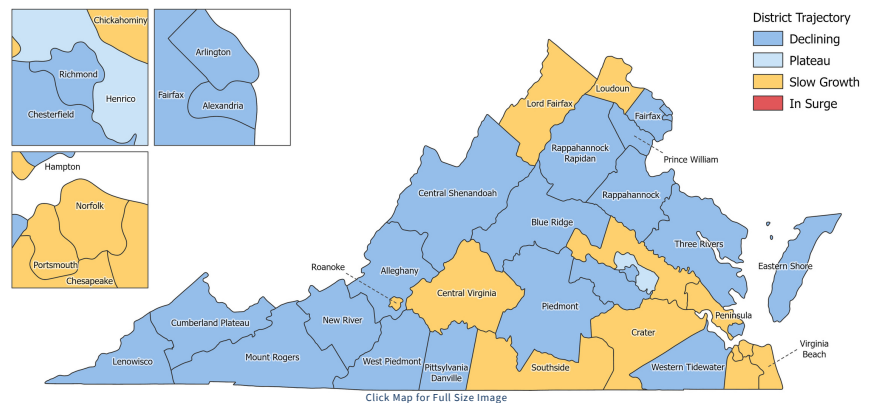
KEY FIGURES

Variant Mix – HHS Region 3

CDC Community Levels

As of September 29, 2022

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

Click Map for Full Size Image

Growth Trajectories: No Health Districts in Surge

Status	# Districts (prev week)
Declining	22 (23)
Plateau	1 (1)
Slow Growth	12 (11)
In Surge	0 (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.

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.
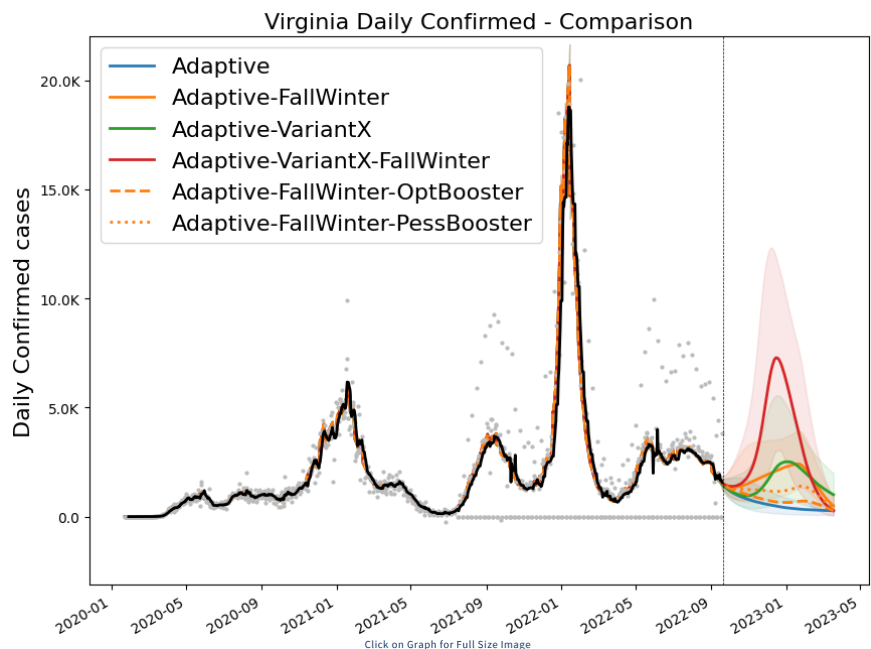
MODEL RESULTS

Unchanged: As always, the current course "**Adaptive**" scenario is shown in blue. This scenario projects a very gradual decline of cases. In this scenario, Virginia will fall below 1,000 daily cases by mid-October.

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

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 7,200 daily cases in mid-December before quickly declining.

The "**Adaptive-FallWinter-OptBooster**" and "**Adaptive-FallWinter-PessBooster**" scenarios (dashed orange lines) show that even in the case of a Fall / Winter surge, a booster campaign can quickly tamp down cases. The optimistic booster scenario cuts total cases by over 50% by March 2023. The pessimistic scenario cuts them by by 30%.

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: September 21, 2022
Date of Next Model Run: October 5, 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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