

March 3, 2023

KEY TAKEAWAYS

- For the third week, not a single county or city is experiencing high COVID19 community levels. More than 95% of Virginians reside in localities at low community levels.
- Seventeen localities, with 407,000 residents, are at medium community levels. High-risk individuals in these areas should wear a mask when in indoor public places.
- XBB.1.5 remains the dominant variant. It accounts for an estimated 94% of sequenced cases in HHS Region 3 according to CDC's Nowcast. There are no exceptional variants on the horizon.
- Models project continued declines in COVID-19 confirmed cases and hospitalizations. Influenza rates are also expected to remain low.
- The COVID-19 modeling and analytics products will transition to an all-threats framework over the coming weeks. Work on COVID-19 will continue. But efforts will expand to include other emerging public health threats.

1,460,868

Total Bivalent Booster Doses Administered by March 2, 2023

587,911

Of eligible Virginians / Seniors have received a Bivalent Booster as of March 2, 2023

17.1% / 42.0%

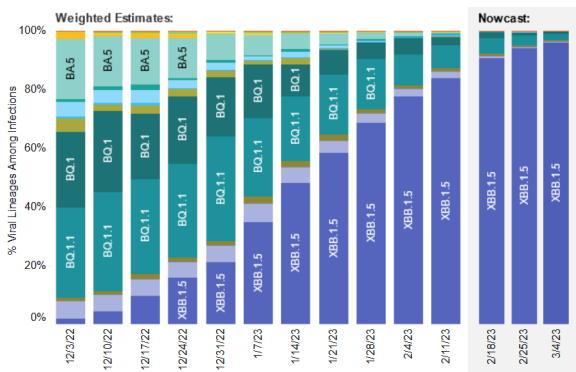
Of Virginians / Seniors have received an annual Flu shot as of March 2, 2023

35.2% / 63.3%

Virginia Localities at High / Medium Community Levels as of March 2, 2023

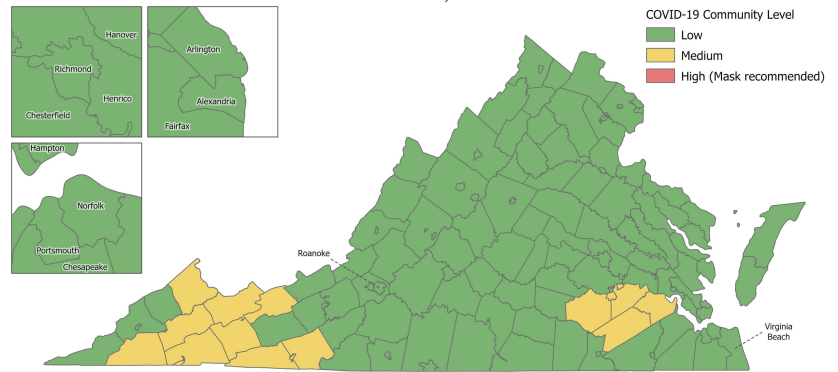
KEY FIGURES

Variant Mix – HHS Region 3



CDC Community Levels

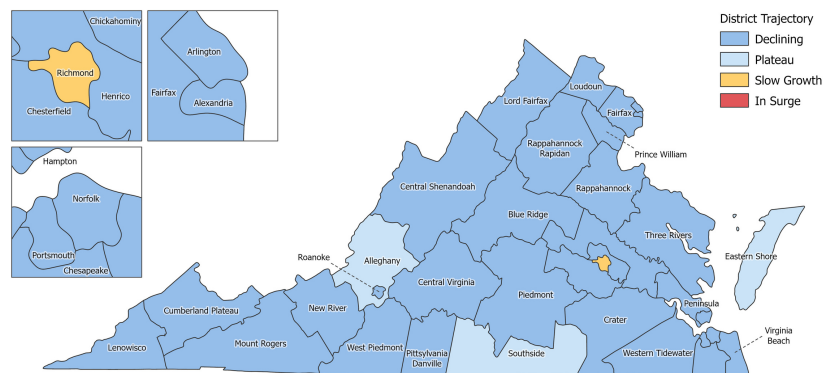
As of March 2, 2023



Click Map for Full Size Image

Growth Trajectories: No Health Districts in Surge

Status	# Districts (prev week)
Declining	31 (28)
Plateau	3 (3)
Slow Growth	1 (4)
In Surge	0 (0)



Click Map for Full Size Image

- Only one district is showing a growth trajectory. None are in surge. The vast majority of regions are in sustained decline.

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 **Susceptible, Exposed, Infected, Recovered (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

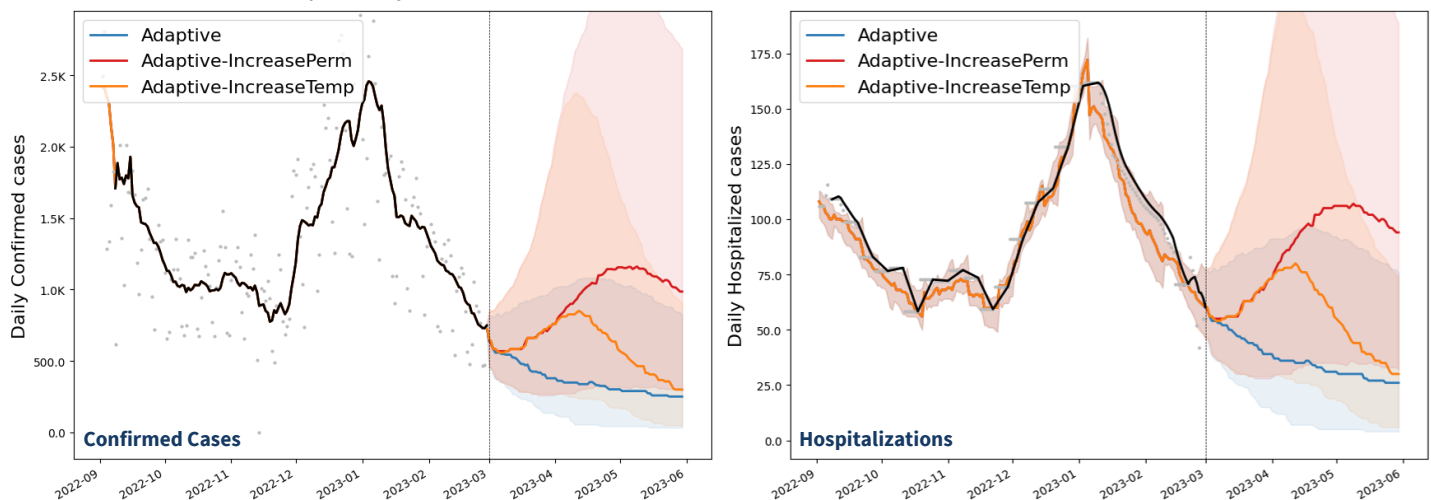
Updated: All models are now trained on hospitalization data rather than confirmed cases. Until the end of 2022, all models were trained on confirmed cases, and made forecasts of those cases. Simple statistics were then used to convert these cases to estimated hospitalizations and deaths. However, case data suffers from significant reporting issues as well as confounding from home test kits. Hospitalizations are a far more reliable data source. Moreover, hospital bed occupancy is one of the primary concerns of emergency planners. As such, the new models are trained on hospitalization data first. Deaths and confirmed case rates are then estimated from these hospitalization forecasts.

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. All models now account for bivalent vaccines and the dominance of the XBB.1.5 subvariant. As always, the **"Adaptive"** scenario assumes that Virginia will continue the current course, with no major changes to the epidemic trajectory. The new **"Adaptive-IncreasePerm"** scenario assumes that transmission rates will increase by 30% over the next four weeks and remain constant thereafter. The new **"Adaptive-IncreaseTemp"** scenario assumes that transmission rates will see the same increase, but then gradually taper back to current levels four weeks later.

MODEL RESULTS

Updated: As always, the current course **"Adaptive"** scenario is shown in blue. This scenario projects a continued decline of cases and hospitalizations. Forecasts suggest Virginia will fall below 500 daily cases and 50 daily hospitalizations by March 19th. From there, rates continue to decline until leveling off at about 200 cases / 25 hospitalizations per day over the summer. This plateau is expected to continue until something changes the dynamics of the pandemic (e.g., a new variant).

Both **"Adaptive-IncreasePerm"** (red) and **"Adaptive-IncreaseTemp"** (orange) are hypothetical scenarios the test the modeled immunity against increases in transmission rates. In both cases, a surge of activity can be generated, but neither scenario reaches the levels observed at the beginning of 2023. In the former (red), the epidemic trajectory peaks in early May. Daily cases and hospitalizations reach around 1200 and 105 respectively, before declining again. The latter, shown in orange, projects a minor surge followed by a quick decline. The epidemic peak is expected in mid-April. Daily cases and hospitalizations reach a maximum of 830 and 80 respectively.



AN EARLY SPRING

Spring officially begins on March 20 in the Northern Hemisphere. For those of us who follow COVID-19 data closely, however, it feels like spring has arrived a bit early this year. Case counts and hospital admissions, already much lower than previous winters, peaked a couple of weeks early this year. And they are dropping quickly. All but four of Virginia's 35 health districts are in declining trajectories. Of those that are not just one is in a slow growth trajectory. Overall, over 95% of Virginians are in localities at Low COVID-19 Community Levels according to the CDC. As the UVA-BI scenario projections on Page 2 show, unless something drastic like a new Variant of Concern emerges, cases and hospitalizations are expected to continue their decline. Currently, there are no such VoCs on the horizon.

This is an auspicious beginning to spring and summer, the seasons when the COVID-19 burden has historically been lowest. While we can breathe a bit more freely, it is important to remain vigilant. COVID-19 still claimed the lives of close to 150 Virginians in January. It is still unclear just how seasonal COVID-19 is. It will likely continue to spread in the spring and summer months.

As always, the health of your family and community is in your hands. If you experience COVID-19 symptoms or were exposed to some with COVID-19 get tested. If you haven't already, now is a good time to order your free COVID-19 at-home test kits. Most importantly, stay up-to-date with vaccinations.

Long-term Outlook

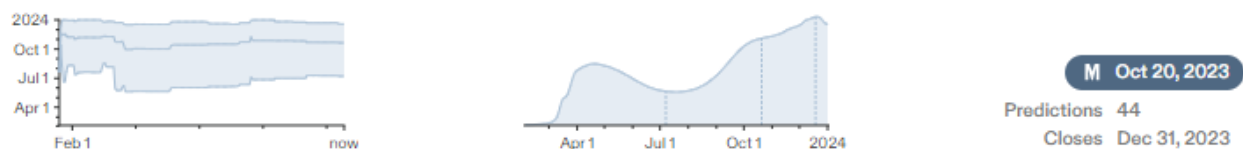
As the COVID-19 threat continues to evolve, so will our efforts to keep Virginians informed about the outlook for COVID-19 and other emerging public health threats. The UVA-BI team has already incorporated more influenza and respiratory disease data into their forecasts. Over the next few weeks, the "COVID-19 Modeling" work will transition to an all-threats framework. VDH's partnership with UVA-BI will continue, including COVID-19 projections. But we will also provide foresight into other emerging threats like influenza and mpox - or the health impacts of hurricanes. As part of this transition our online presence will move the the VDH Office of Emergency Preparedness section of the website. The VDH Office of Emergency Preparedness houses VDH's new Foresight and Analytics unit.

VDH's partnership with the Metaculus forecasting platform is an important part of our all-threats framework. Metaculus' aggregate human forecasting method is particularly useful during emerging public health threats when data may be sparse. The Keep Virginia Safe II tournament, a partnership between Metaculus, VDH, and UVA-BI, is already providing foresight on a range of public health threats. Key forecasts for Virginia in 2023 include:

- Chance of a second flu peak this season: 4.4%
- Number of mpox cases expected in Q2: 17
- Count of Virginia poultry culled due to avian flu: 653,000

Combined, the all-threats framework matched to an integrated range of forecasting methods provides Virginia with a broad range of foresight into emerging public health threats and their potential impact on the state.

When will the UVA Biocomplexity Institute indicate at least 13 of Virginia's 35 health districts are in a "surge" trajectory?



Forecast of the next COVID-19 surge from the Keep Virginia Safe II Forecasting Tournament on the Metaculus platform. Users can take deep dives into probability distributions on the platform - and contribute forecasts of their own. Source: Metaculus.