



VIRGINIA

COVID-19 Update February 11th, 2021

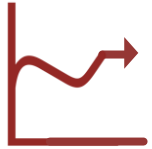
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A team of RAND researchers was asked by the Commonwealth of Virginia to review available information on COVID-19 models of the Commonwealth to determine the strengths and weaknesses of each model and their relevance to decisionmaking. The information in this presentation is intended to keep policymakers abreast of the latest findings of the research team.

This research was sponsored by the Commonwealth of Virginia and conducted by the RAND Corporation. RAND is a research organization that develops solutions to public policy challenges to help make communities throughout the world safer and more secure, healthier and more prosperous. RAND is nonprofit, nonpartisan, and committed to the public interest. For more information, visit www.rand.org.



Bottom-Line Up Front



Virginia's total case levels remain very high but have declined

- Hospitalizations are declining but remain high
- Testing has trended lower



Vaccine administration is accelerating

- Stockpiles have stabilized
- Supply will remain a constraint for another month or two
- Efforts to increase vaccine demand will be needed to reach some populations



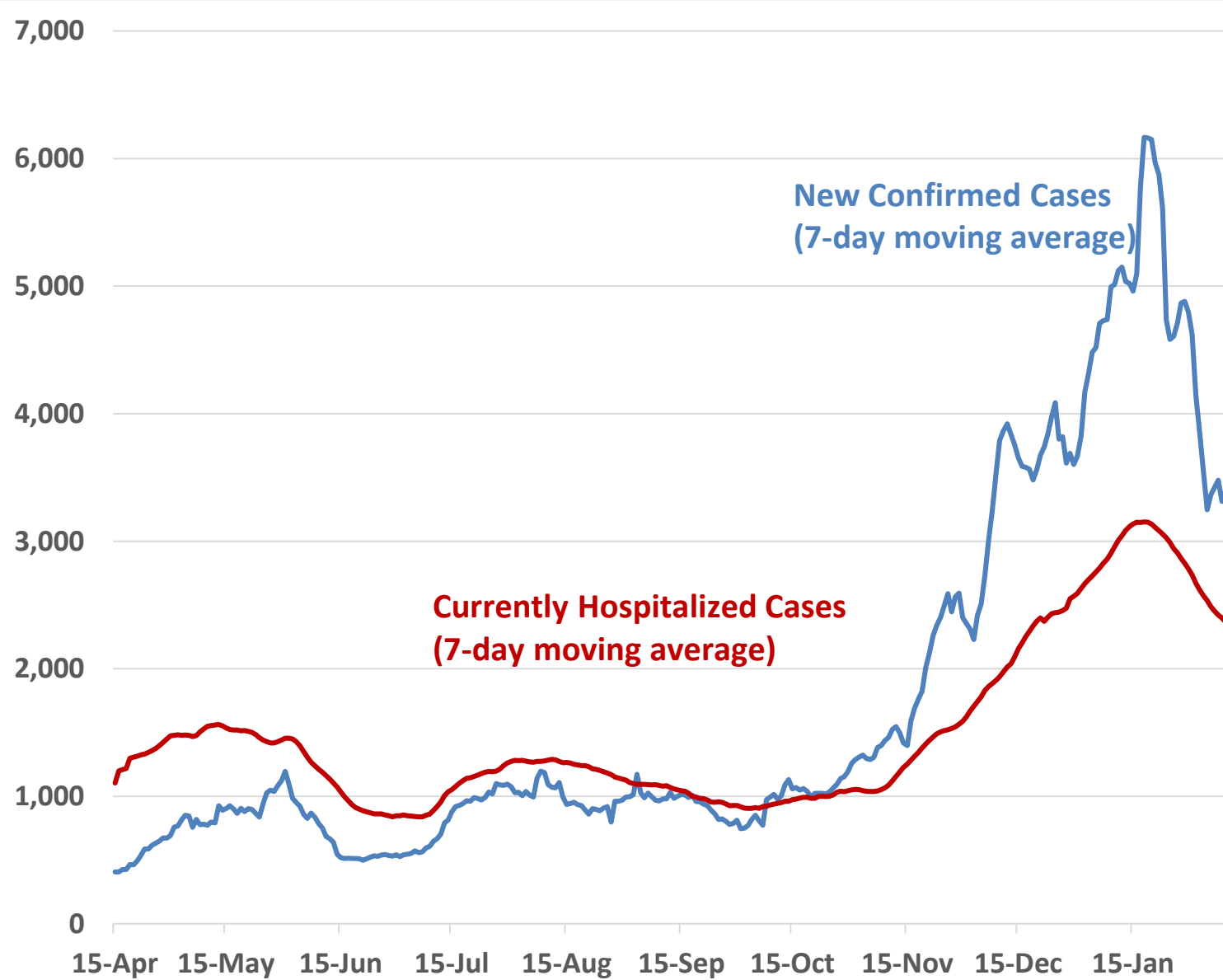
Model forecasts may be less accurate because behavior is driving growth

- Models will continue to be useful for comparing policies and exploring scenarios

New COVID variants have been detected in Virginia and could accelerate spread



Cases and hospitalizations remain high



New confirmed cases have dipped to 3,300/day on average

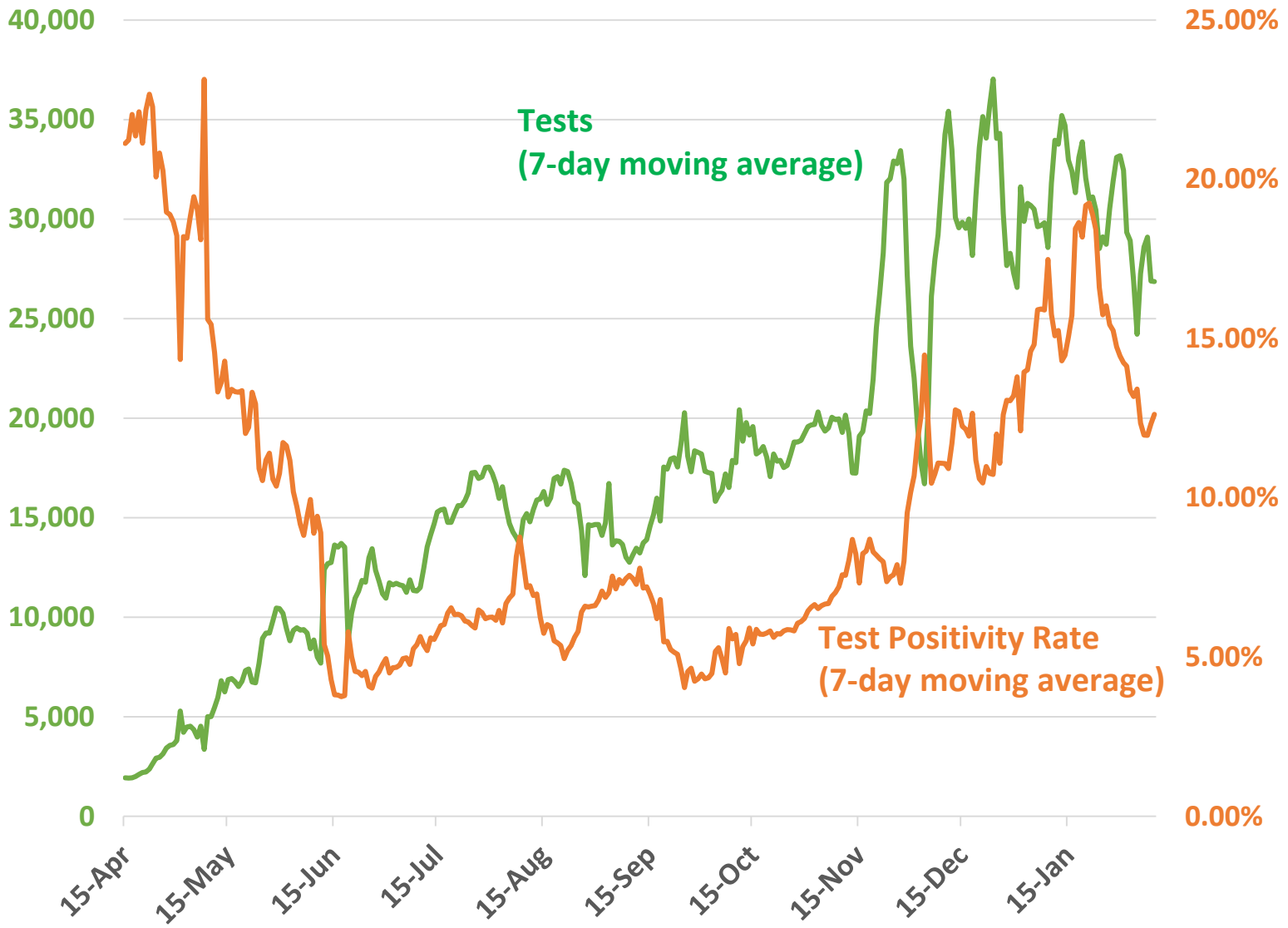
- This is the level from early December

Currently hospitalized cases peaked in mid-January

- Hospitalizations are likely to continue to fall for the next few weeks
- The decline in hospitalizations will typically be slower than that of cases



Testing remains high but may be drifting lower



Tests per day have averaged around 26,000

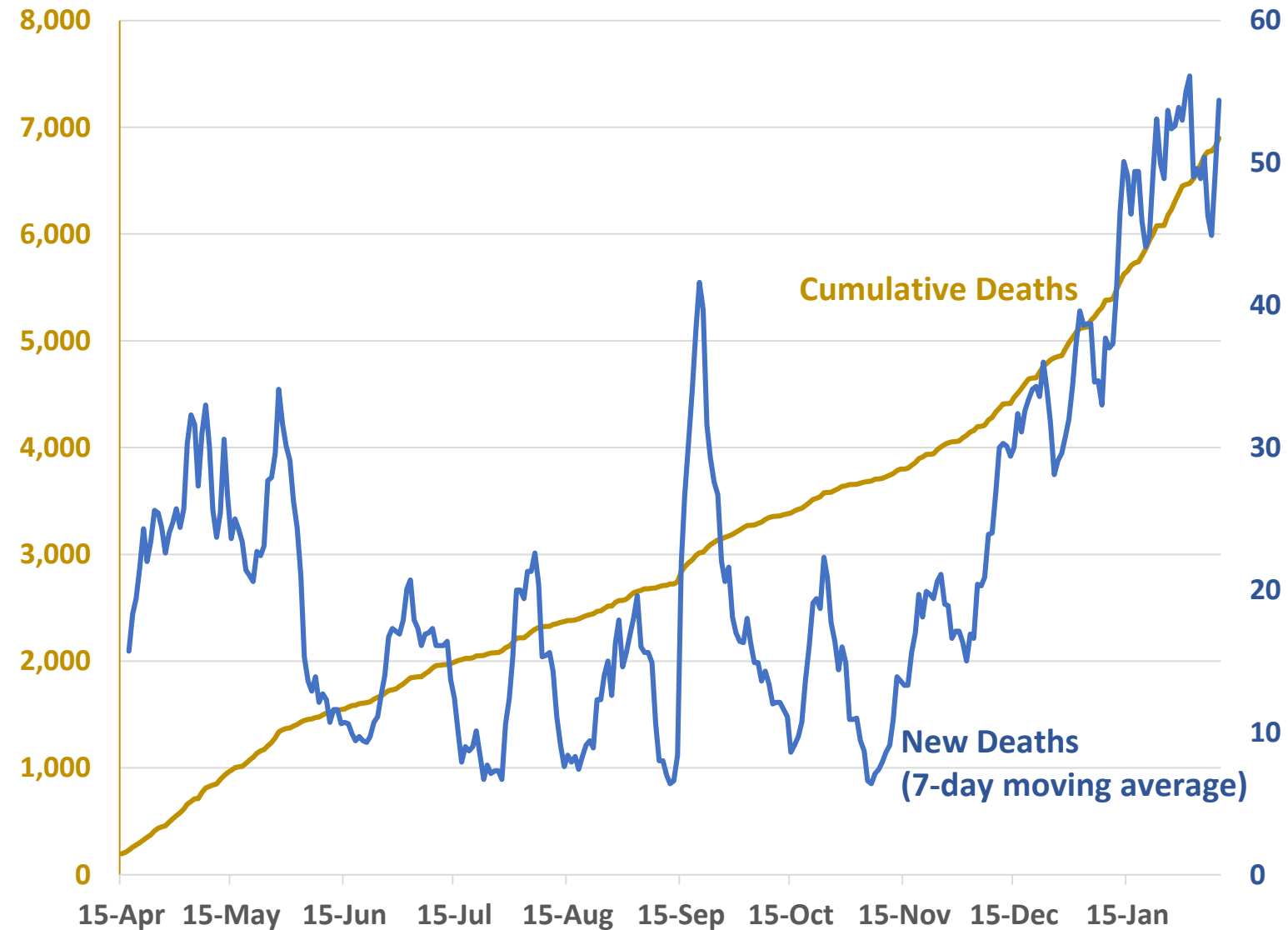
- This is lower than the 30,000 to 35,000 range that had been maintained since November

The test positivity rate is roughly 12 percent

- Five percent is a suggested target
- At this rate, the case count levels are likely to be slightly less reliable



The new deaths from COVID remain elevated



Cumulative Deaths have nearly reached **7,000**

- At 81 per 100,000, Virginia's death rate from COVID remains well below the national rate of 143 per 100,000

New deaths have remained between **45 to 55 per day** for the last month

- Death rates typically lag case rates by several weeks and so we expect declines to begin in the next week or two

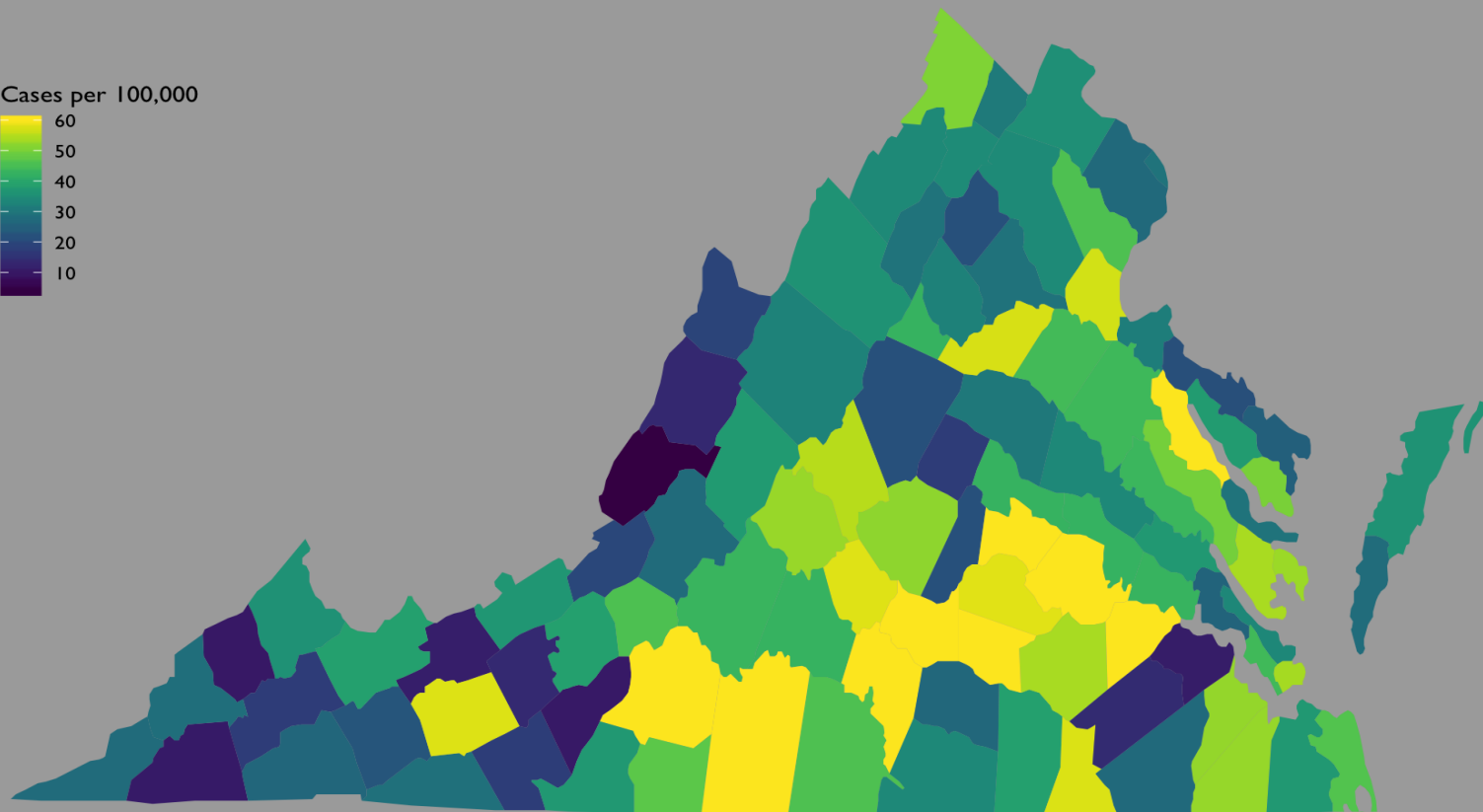
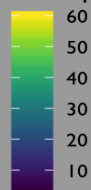


Case levels have continued to decline but remain very high across much of the Commonwealth

CASE COUNT

Source: VDH

Cases per 100,000



Yellow indicates at least 60 cases per 100,000

Case levels have declined across the Commonwealth

- 45 percent of counties have more than 40 cases per 100,000 (89 percent three weeks ago)
- 2 percent have more than 100 cases per 100,000 (18 percent three weeks ago)

These data were updated February 10th and represent a seven-day average of the previous week

The spread has declined in most neighboring states

Over the last 7 days, Virginia had 39.7 (-12% from last week) new confirmed cases per day per 100,000

Very high case loads (>20):

- North Carolina (51.5 new cases per 100k, +3% from last week)*
- Kentucky (45.4, -14%)
- Tennessee (33.7, -15%)*
- West Virginia (28.6, -28%)
- District of Columbia (23.1, 21%)
- Maryland (21.2, -10%)

*Test positivity rates above 10%

High case loads (10-20): None

Lower case loads (<10): None

These data were updated February 10th and represent a seven-day average of the previous week



Almost three percent of Virginians are fully vaccinated and eight percent have received the first shot

Age	0-9	10--19	20-29	30-39	40-49	50-59	60-69	70-79	80+	Total
Fully Vaccinated	0	1,396	29,934	43,985	44,214	45,356	31,771	15,876	16,813	229,345
% Full	0.0%	0.1%	2.6%	3.8%	4.1%	4.0%	3.3%	2.6%	5.4%	2.7%
Partially Vaccinated	0	3,657	55,063	78,725	89,104	100,845	116,674	149,654	103,705	697,427
% with Partial	0.0%	0.3%	4.8%	6.7%	8.3%	9.0%	11.9%	24.4%	33.3%	8.2%
Confirmed Cases	21,995	52,479	99,424	85,517	77,533	76,470	52,531	29,086	21,530	516,565
% Confirmed Cases	2.2%	4.8%	8.6%	7.3%	7.2%	6.8%	5.4%	4.7%	6.9%	6.1%

Source: VDH, February 10th

Vaccinations are being rolled out in Virginia

- 1,618,075 doses have been distributed as of February 10th
- Virginia’s program has administered 88 percent (812,846 out of 922,550) of its first doses
- It has also administered 37 percent (189,477 out of 517,100) of its second doses
- The Federal Long-Term Care Facility Program has administered 86 percent (153,794 of 178,425) of doses

At some point in the next month or two, vaccine supply will likely be less of a constraint and growing the vaccination rates will rely on improving demand

- A series of national surveys by the Kaiser Family Foundation found 71 percent of adults will “definitely” or “probably” get the vaccine, which is up from 63 percent in September
- KFF also noted disproportionately more skepticism about COVID vaccines in the Black population and a majority of the Black and Hispanic populations report not having enough information about the vaccination process



We've been monitoring recent, relevant literature



Monod et al. studied age patterns in U.S. mobility and mortality data to identify how COVID spread is sustained in the community

- They noted that as of October 2020, those 20-49 years of age were the only age group with a reproduction number above one
- They estimate that 65 percent of COVID-19 infections originate among individuals aged 20-49



Rogawski et al. used serological samples taken between June 1st and August 14th from 4,675 Virginians to estimate the share of the population with some degree of acquired immunity to COVID

- They estimate that 2.4 percent of Virginians had been infected in the Commonwealth's initial wave
- There was substantial variation with a prevalence of 10.6 percent among Hispanic adults
- The Northern region had a prevalence of 4.4 percent compared to 0.9 percent in the Southwest
- The prevalence among the uninsured was estimated to be 5.9 percent

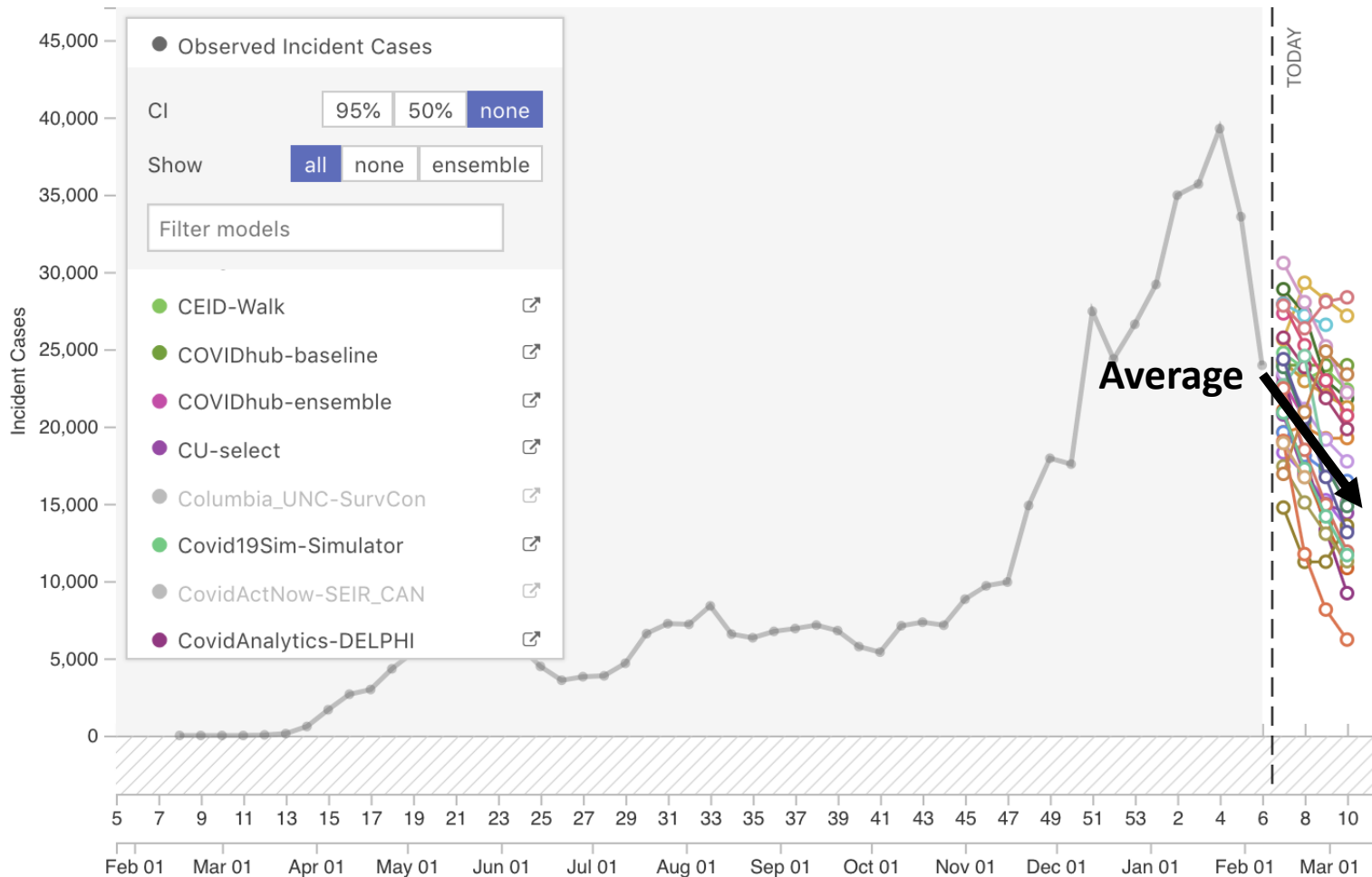


Corlette et al. studied the the effects of COVID-19 on primary care practices by interviewing doctors

- Higher costs and lower volumes have caused financial strain on PCPs
- PCPs have increased the use of telehealth
- PCPs report high rates of burnout among both doctors and other staff



The models are generally forecasting a steep decline in cases



There is broad agreement among the forecasts that there will be a steep decline in cases over the next few weeks

- The models differ on specific levels more than change
- The variation between models typically arises from different definitions (e.g., cases versus infections)

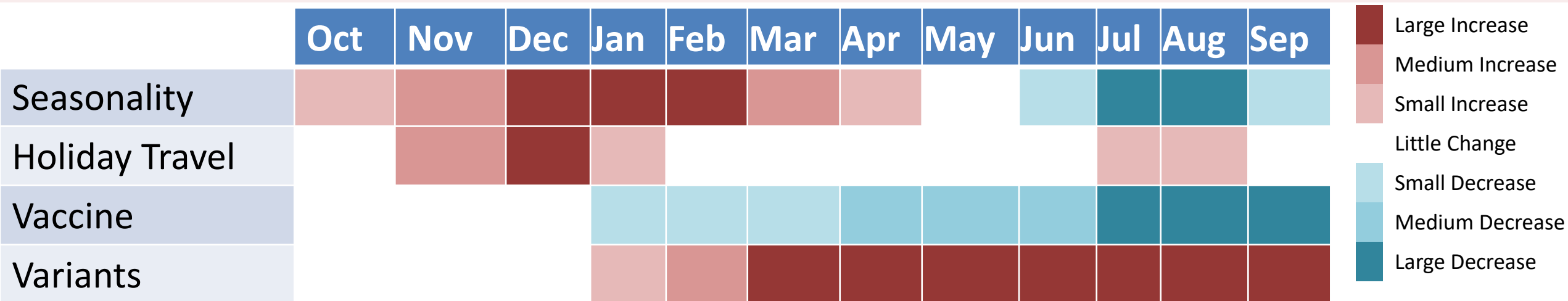
Many of the model predictions lag the data

- This means that they match the trends in retrospect but not as forecasts

Source: COVID-19 Forecast Hub, <https://viz.covid19forecasthub.org/>
Accessed February 10th



There are several factors driving the spread

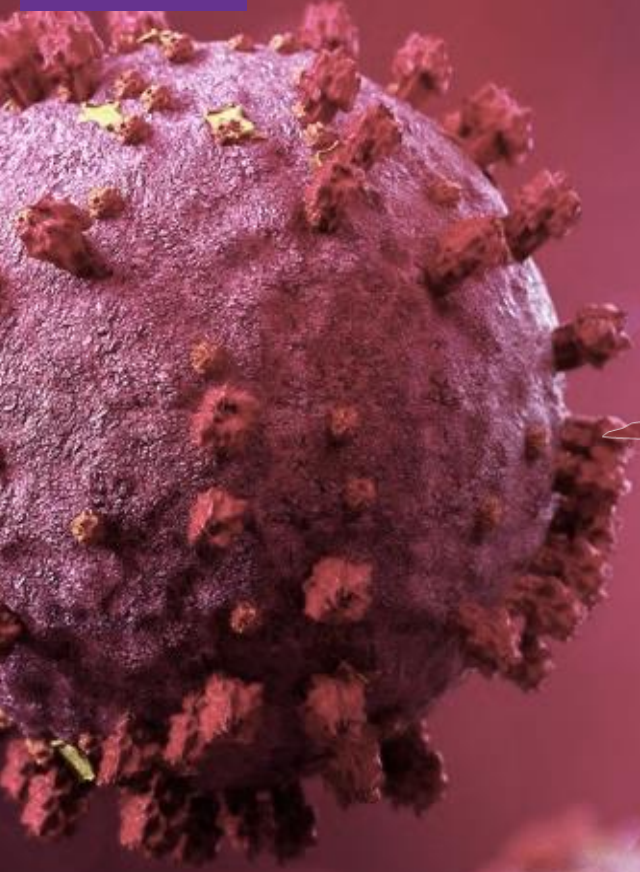


There are several factors that will continue to drive the spread for the next few months

- Seasonal effects for COVID-19 appear to have increased spread during colder weather
- Holiday activities appear to have increased spread but are largely over for now
- The vaccines may begin to meaningfully slow the spread in the next month or two, but maintaining the rate of vaccine administration will require outreach to skeptical subpopulations
- The B.1.1.7, B.1.351, P.1, and P.2 Variants of Concern may increase the rate of spread as they enter Virginia and future variants could also change the severity or the efficacy of vaccines

There are some key unknowns about the current spread

- How many people have been infected with COVID-19 and have lingering protection?
- To what degree are people complying with best practices for prevention?



Discussion and Questions