VIRGINIA

COVID-19 Update September 24th, 2020

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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 work of the research team will be documented in a forthcoming RAND research report. 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.

Virginia's total case level has declined slightly

- Case counts remain higher in the southern counties

- Hospitalizations have declined slightly

- Testing has increased significantly in the last week

Additional triggers could lead to a rapid rise in the near term

- Seasonal changes
- Distancing fatigue
- In-person school
- Interstate travel
- Hurricane season

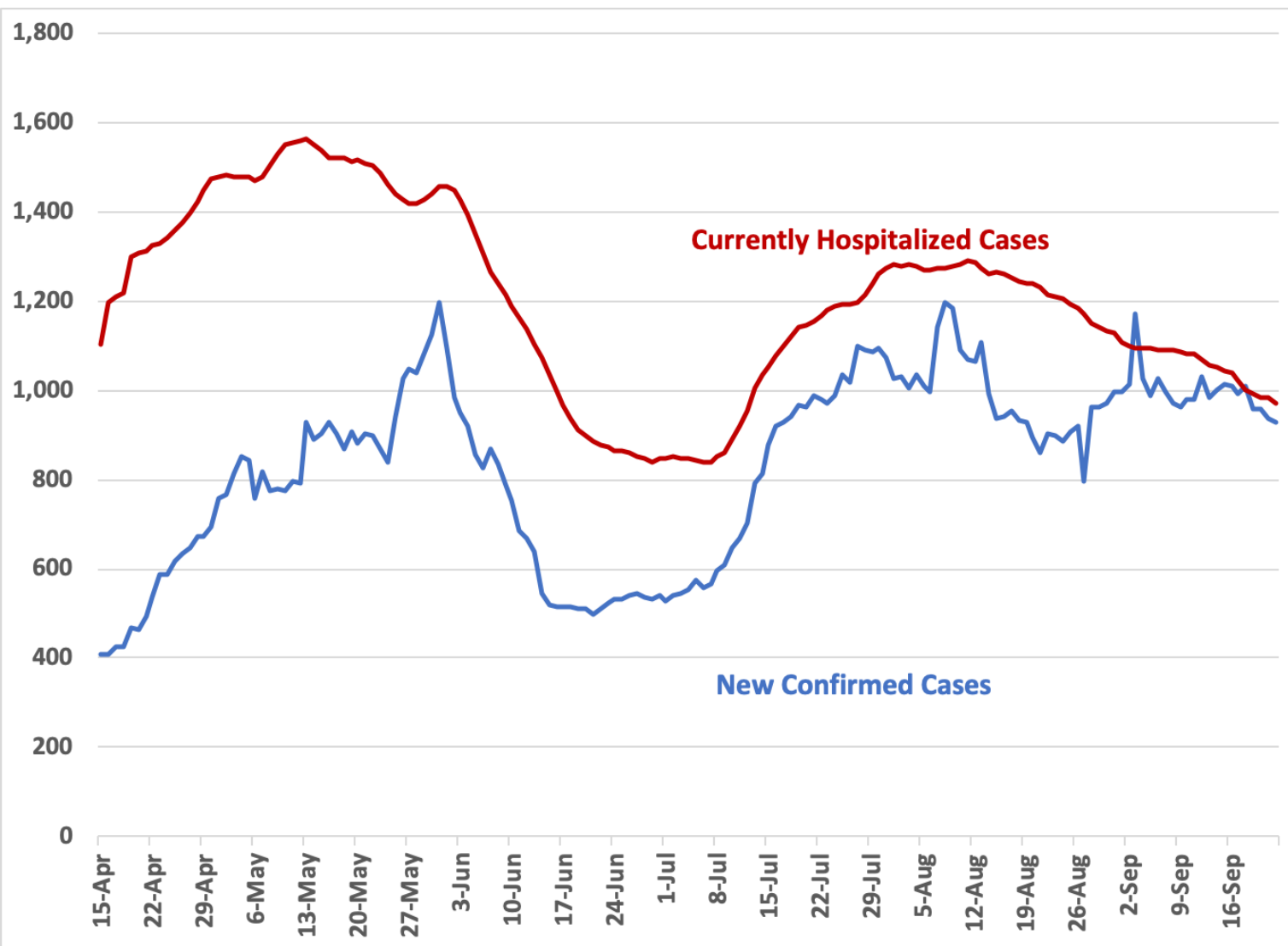**Cheaper, faster testing could reduce the spread if widely deployed**

Modeling is less useful for forecasting because behavioral responses are driving current trends

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

Changes in testing practices may change data quality in ways that make it difficult to produce consistent data series

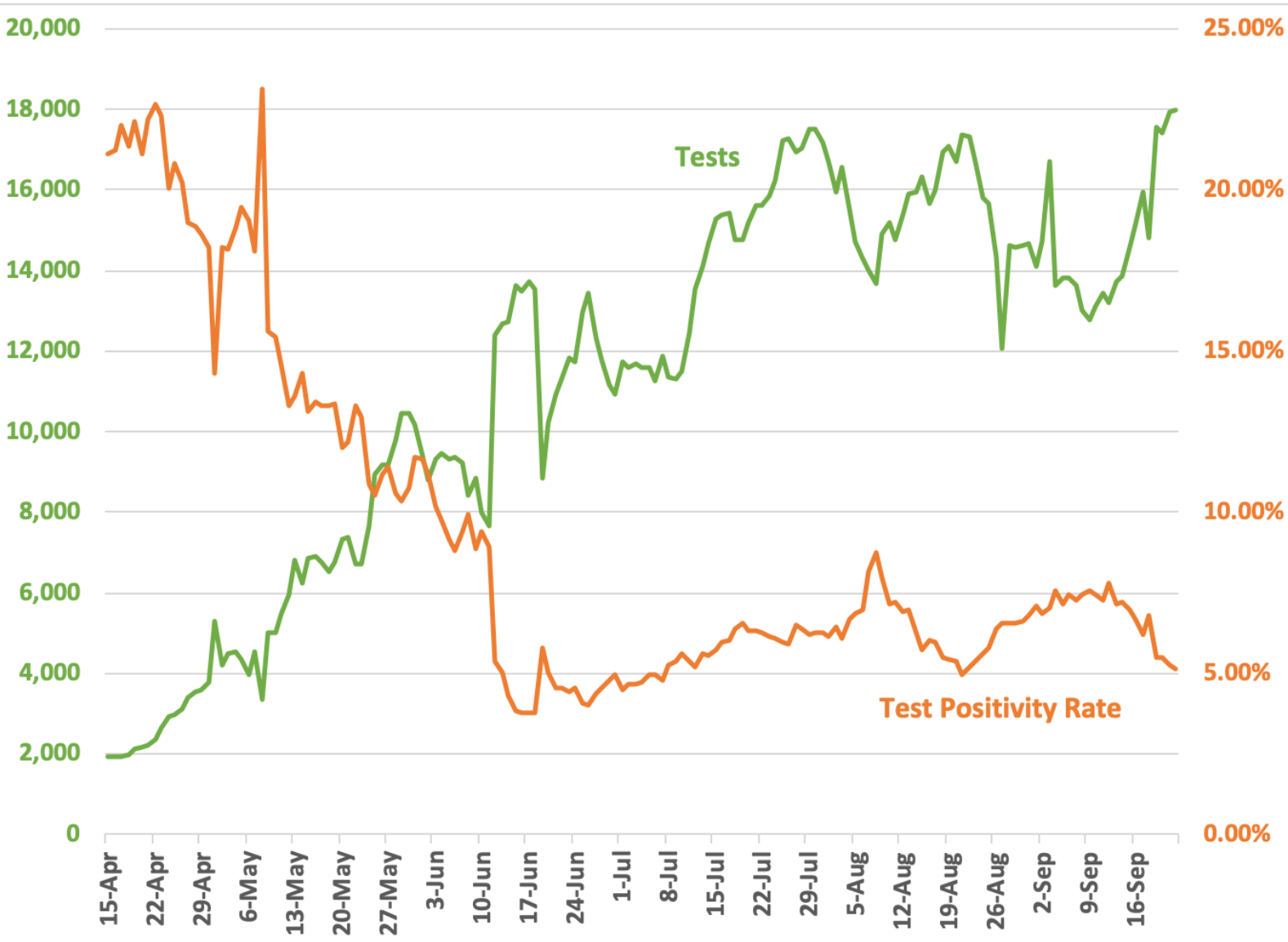# The current trends indicate the latest wave may be declining

New confirmed cases have declined slightly

- The level has remained in the same range (roughly 900 to 1,100 cases/day) since early July

Currently hospitalized cases have continued to slowly decline

- Given the stable case rate, this may indicate a change in the demographics of the infected population (e.g., younger)
- This is a lagging indicator and so will likely not move rapidly until a significant movement in the case trends

Testing levels are near the target range for a test-and-trace strategy

Tests per day have increased significantly

- Testing levels are appropriate for a test-and-trace strategy
- Further reopening is estimated to require five times more testing along with lower case rates (See Rockefeller Foundation)

The test positivity rate has sharply declined and is now at just over five percent
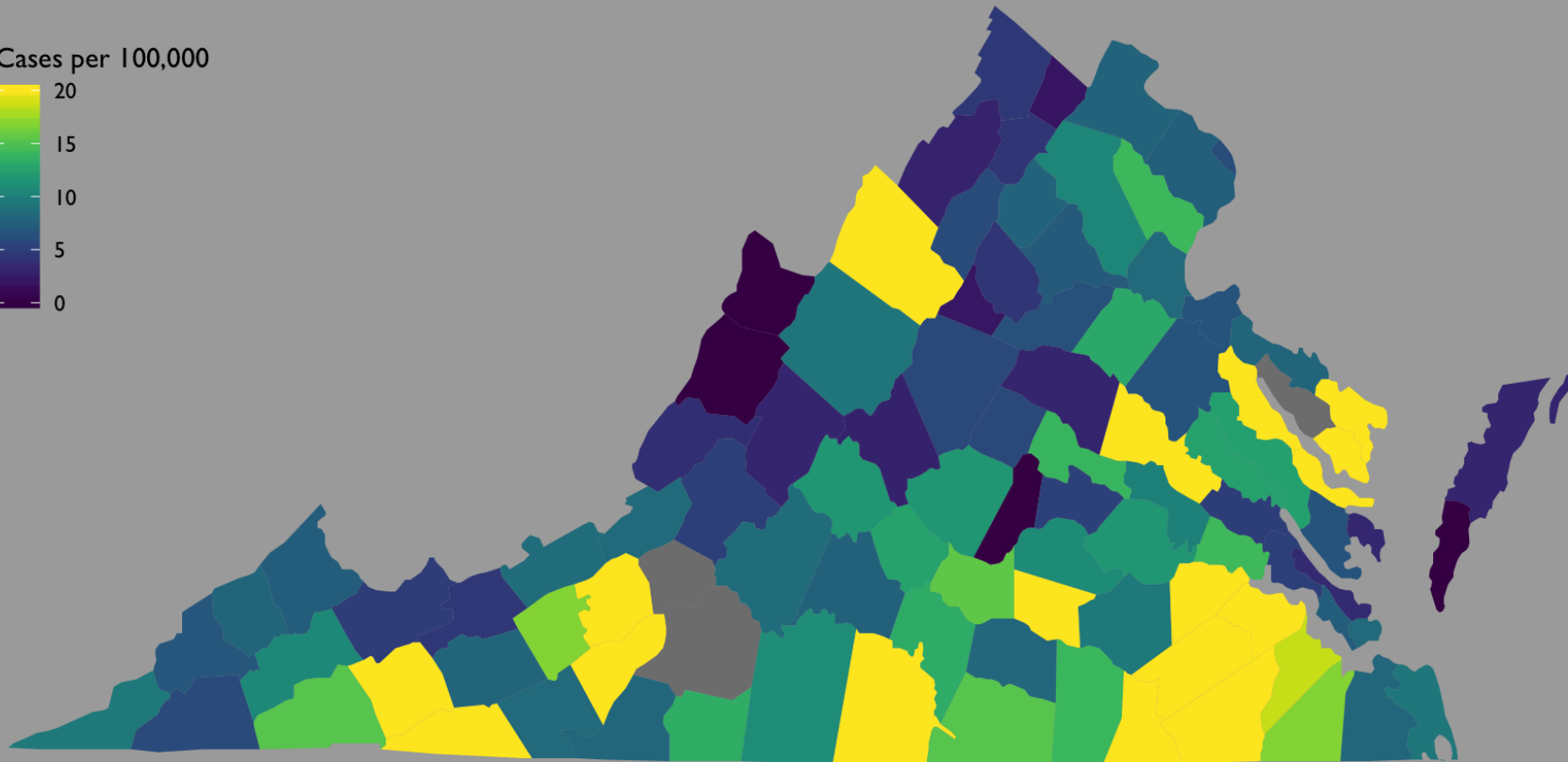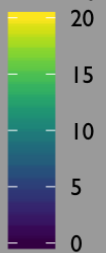
- Five percent is a suggested target

Per capita new cases are highest in the southern counties

CASE COUNT
Source: VDH

Cases per 100,000
20
15
10
5
0

Yellow indicates at least 20 cases per 100,000

Virginia's southern counties have continued to see high case levels

Elsewhere case counts were mixed with some increases and some decreases compared to last week

These data were updated September 23rd and represent a seven-day average of the previous week

Case rates in neighboring states have been stable or slightly higher

Over the last 7 days, Virginia had 11.0 (-7% from last week) new confirmed cases per day per 100,000

Very high case loads:
Tennessee (21.4 new cases per 100k, -2% from last week)

High case loads:
- Kentucky (14.9, +10%)
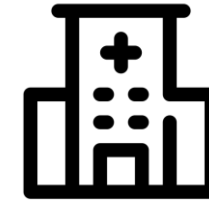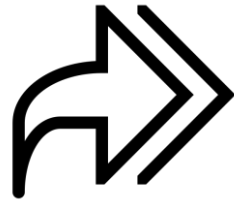- North Carolina (11.7, +9%)
- West Virginia (10.8, +9%)

Lower case loads:
- District of Columbia (7.1, +1%)
- Maryland (9.8, +10%)

These data were updated September 23rd and represent a seven-day average of the previous week

Forecasts based on current policy estimate higher case level

	Near-term Forecasts	Outcomes
Values:	**Near-term:** Cases estimated to be flat next week and remain near that level until the first week of October **Longer-term:** Cases are expected to begin rising again in early October	**Deaths:** About 700 COVID additional deaths by November 1st **Hospitalizations:** At current levels, there are 60 to 90 new hospitalized COVID cases per day, but this could grow 80 percent higher by November 1st
Notes:	Second peak is estimated to have occurred in the past A third peak is expected to occur sometime after November 1st	The exact case fatality rate varies, but, as a rule of thumb, each additional case per 100,000 results in one to three additional deaths statewide Severe cases have been shown to have longer term negative health consequences
Source:	Youyang Gu http://covid19-projections.com/us-va Accessed 9/23/2020	Youyang Gu http://covid19-projections.com/us-va John's Hopkins University https://coronavirus.jhu.edu/us-map COVID Tracking Project https://covidtracking.com/data/state/virginia Accessed 9/23/2020

There are several triggers that could lead to increased spread

Trigger	Likely effect	Timeframe
Seasonal changes	Increased transmission as people spend more time indoors and virus persists longer in cooler/less sunny settings	Increasing as the weather gets cooler
Distancing fatigue	Increased transmission as people are less rigorous about distancing	Gradual and continuous
In-person school	School reopenings become super-spreader events or students return with COVID from out-of-state	Now
Hurricane season	Evacuees catch or spread COVID	Now to November
Increased interstate travel	People from out-of-state spread COVID	Gradual and continuous
Expanded testing	Paired with self-isolation could dramatically reduce the spread	A few months

These triggers are likely to lead to increased spread
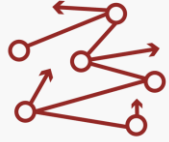- Some of the triggers could have an impact now and others will build up over time

Expanded testing is the primary trigger to decrease the spread
- Preparation is needed to quickly and effectively deploy enhanced capacity
- Modelling alternative testing strategies could help

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We've been monitoring recent, relevant literature

Almagro et al., used GPS data to study the spread of COVID in New York by housing type and demographics
- They found that crowded housing, rather than population density, likely played a major role in the spread among the Black and Latino populations, essential workers, and those with low-incomes
- Focusing interventions on apartment complexes with families could more efficiently reduce the spread

Gidengil et al., developed a framework for assessing workplace screening approaches and looked for evidence in the literature about their relative effectiveness
- A verbal symptom screen is easily implemented and appears to have some efficacy in reducing spread
- Temperature checks likely only have a limited improvement to marginal efficacy, but may provide some reassurance because it is a visible intervention
- The best approach for each workplace will vary but verbal screens are broadly advisable

Selden et al., studied the risk of severe COVID outcomes among the households of K-12 school employees and students
- Nationwide, between 42 and 51 percent of school employees meet the CDC's definition of increased risk for severe COVID
- Nationally, between 34 and 44 million people are in households with connections to schools (i.e., there is a student or employee in the household)
- Thus, schools pose both an extensive and intensive risk for COVID

Discussion and Questions