

New Hampshire Coronavirus Disease 2019 Weekly Partner Call

January 13, 2022

*Ben Chan
Elizabeth Talbot
Lindsay Pierce*

Thursday noon-time partner calls will focus on science, medical, and vaccine updates with time for Q&A

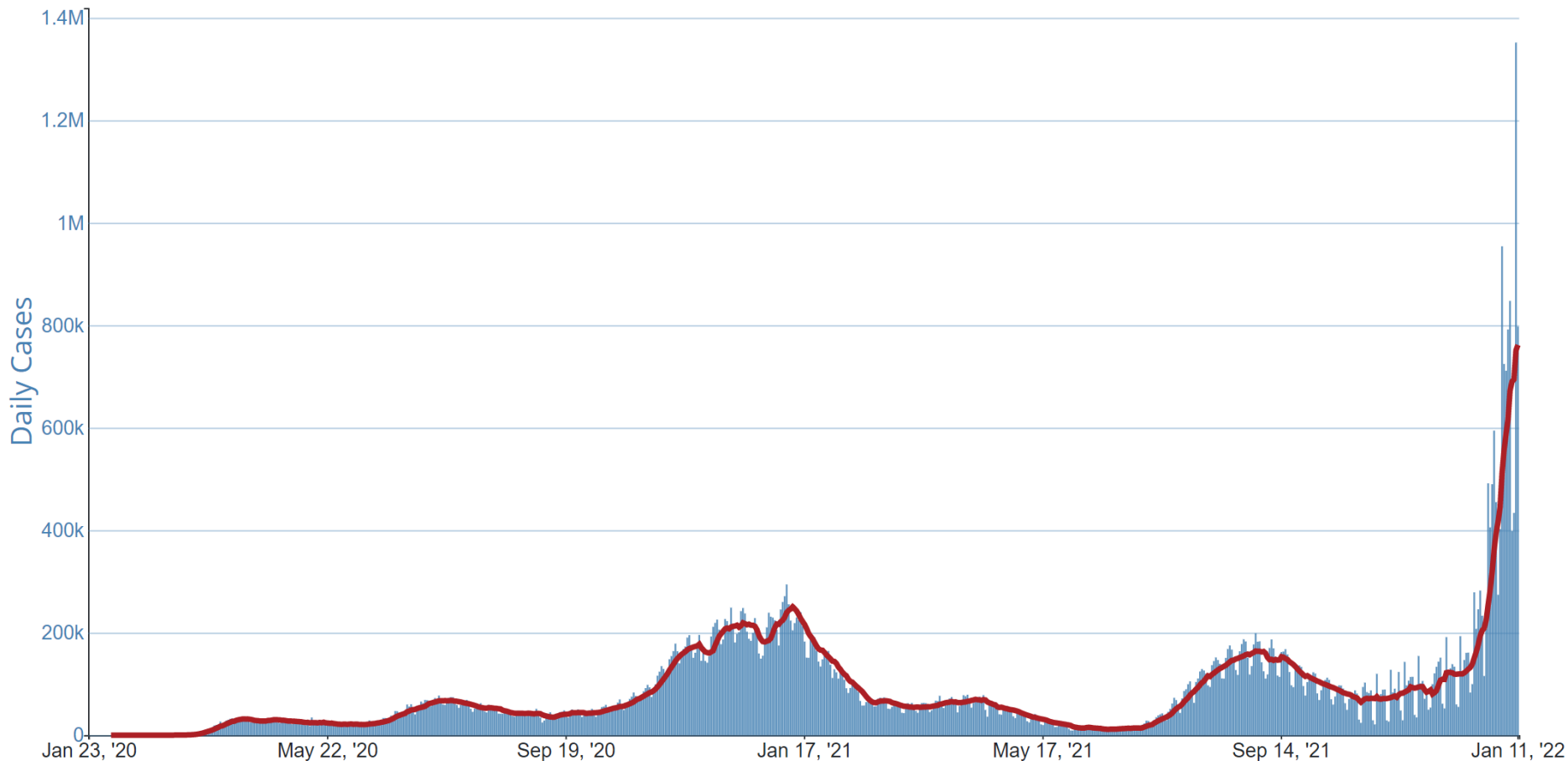
Agenda

- Epidemiology Update
- Antigen Testing Update
- Updated Isolation and Quarantine Guidance (with FAQs)
- Questions & Answers (Q&A)

Epidemiology Update

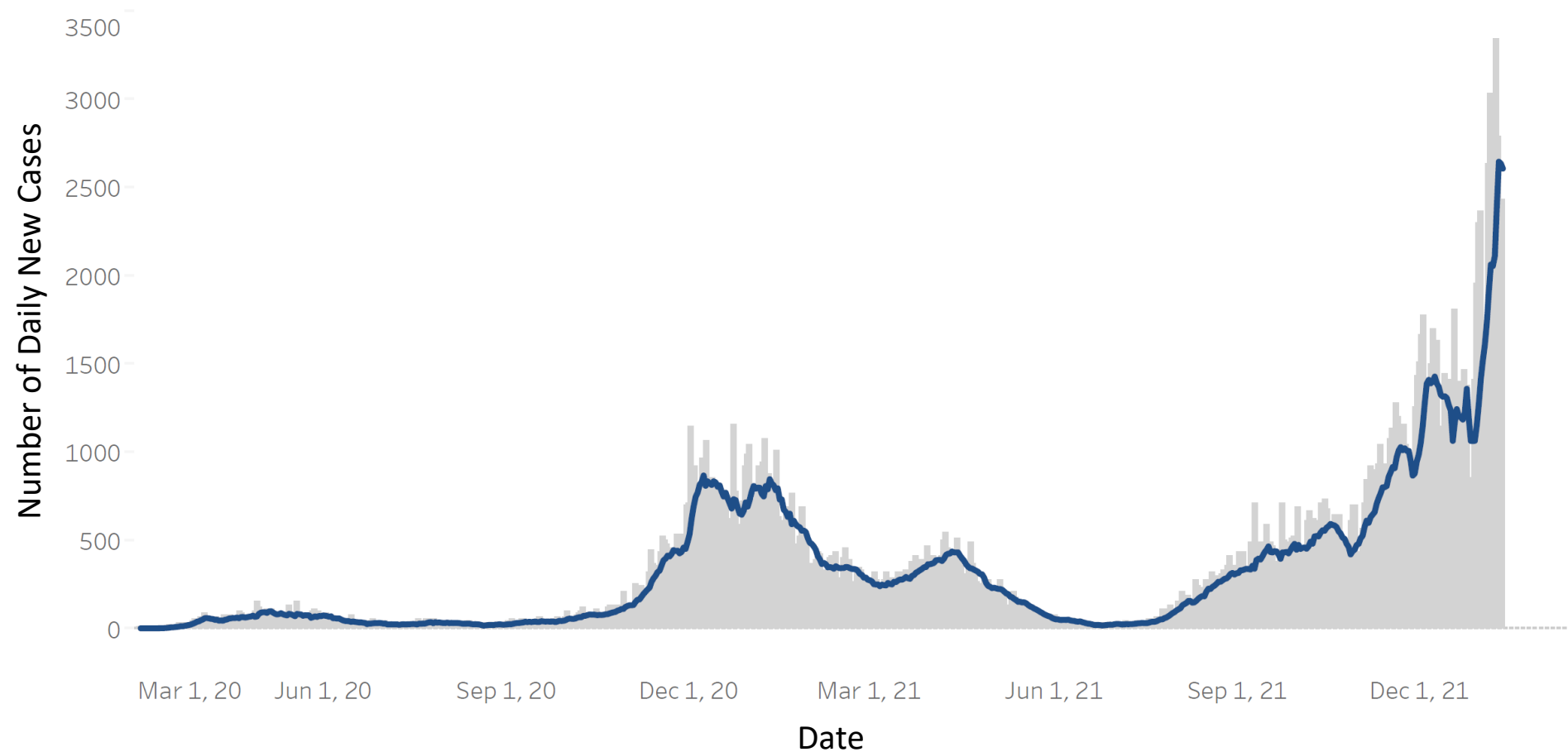
U.S. National Daily Incidence of COVID-19

Daily Trends in Number of COVID-19 Cases in The United States Reported to CDC



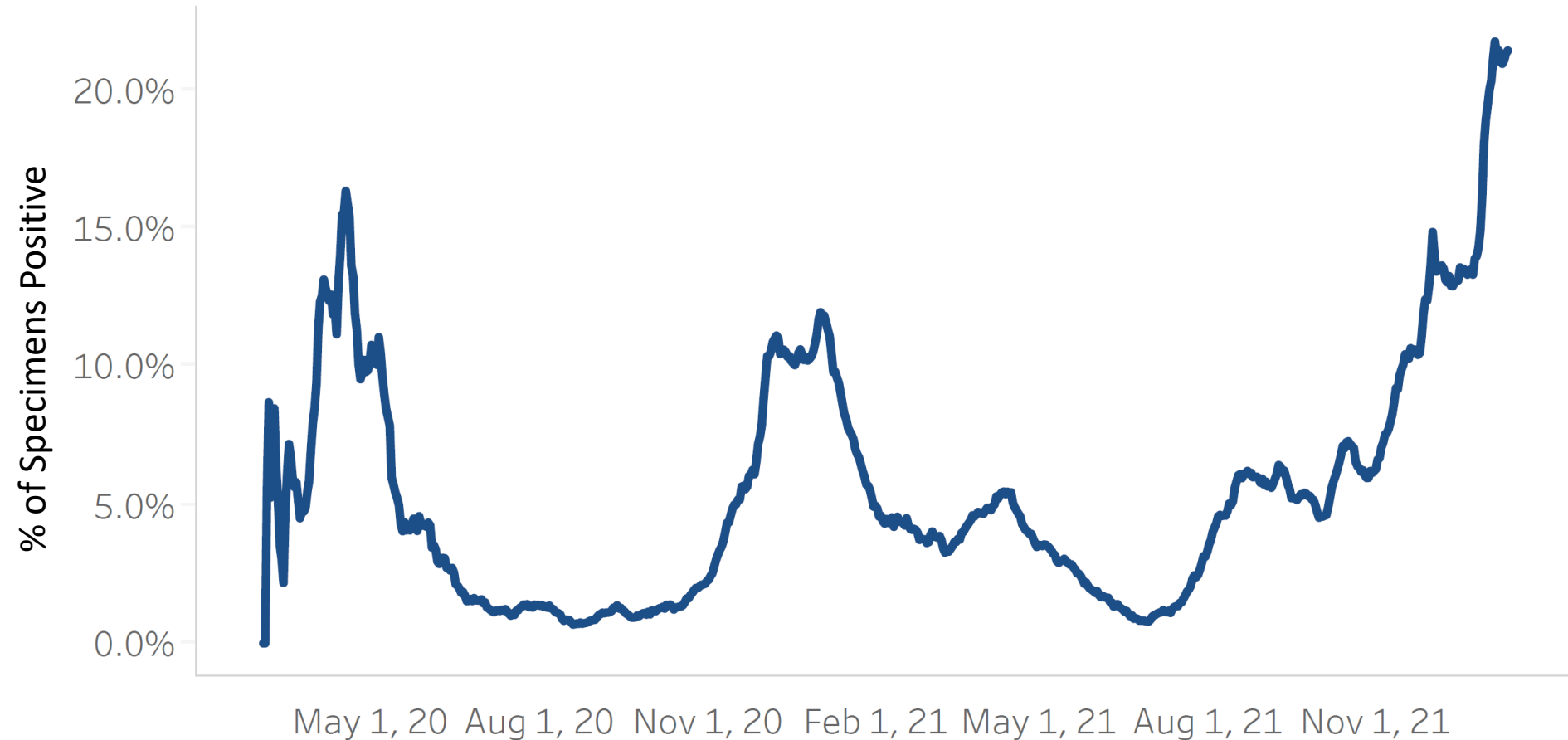
https://covid.cdc.gov/covid-data-tracker/#trends_dailytrendscases

Number of New COVID-19 Cases per Day in NH



<https://www.nh.gov/covid19/dashboard/overview.htm#dash>

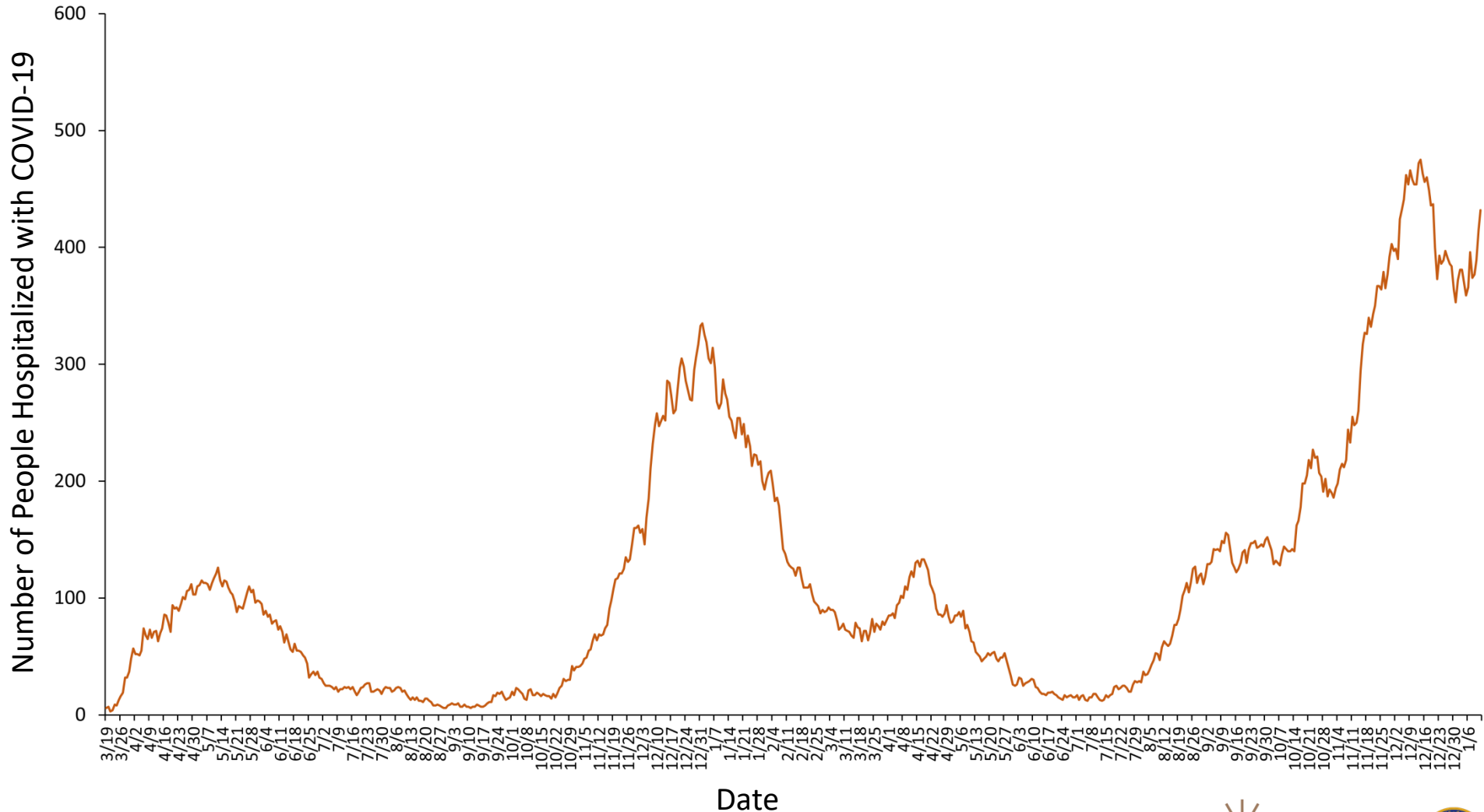
% of Tests (Antigen and PCR) Positive for COVID-19 (7-Day Average)



Date Laboratory Test Completed

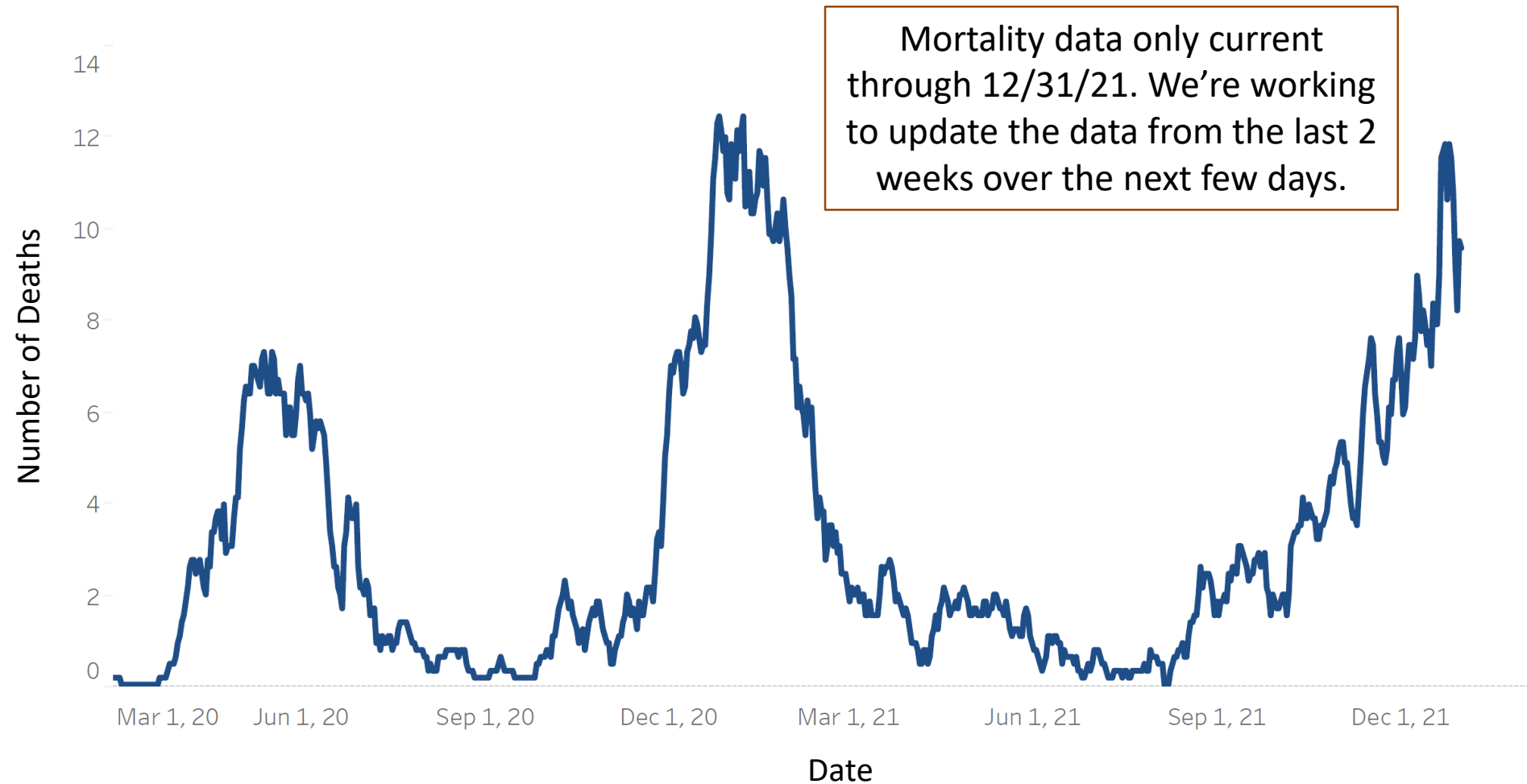
<https://www.nh.gov/covid19/dashboard/overview.htm#dash>

Number of People Hospitalized with COVID-19 Each Day in NH (Hospital Census)



<https://www.nh.gov/covid19/dashboard/overview.htm#dash>

Average Number of COVID-19 Deaths per Day in NH (Based on Date of Death)



THIS IS AN OFFICIAL NH DHHS HEALTH ALERT

Distributed by the NH Health Alert Network
DHHS.Health.Alert@dhhs.nh.gov
January 11, 2022 Time 1330 (1:30 PM EDT)
NH-HAN 20220111



COVID-19 Pandemic, Update # 54 ***Omicron Variant, Therapeutics, and COVID-19 Vaccine Updates***

Key Points and Recommendations:

- New Hampshire is experiencing a [rapid increase in COVID-19](#) and in the proportion of SARS-CoV-2 infections due to the Omicron variant. Based on Taqpath PCR testing performed at the NH Public Health Laboratories (PHL) last week, the estimated proportion of positive specimens showing S-Gene Target Failure (SGTF, indicative of the Omicron variant) increased from 30-40% to 75%. Yesterday, over 90% of positive specimens showed SGTF.
- Given the rapid increase in Omicron, the NH Division of Public Health Services (DPHS) recommends that providers transition to utilize Paxlovid (PO), sotrovimab (IV), remdesivir (IV), and molnupiravir (PO) for treatment of non-hospitalized patients with mild-moderate COVID-19 who are at high risk for progression to severe disease (medications listed in order of preference). Molnupiravir should only be used when other treatment options are not available (see NIH treatment guidelines). NH DPHS recommends against the use of the monoclonal antibody therapies bamlanivimab/etesevimab and casirivimab/imdevimab, both of which are not expected to be active against Omicron.

Antigen Testing Update



Focus on Antigen Testing

Background

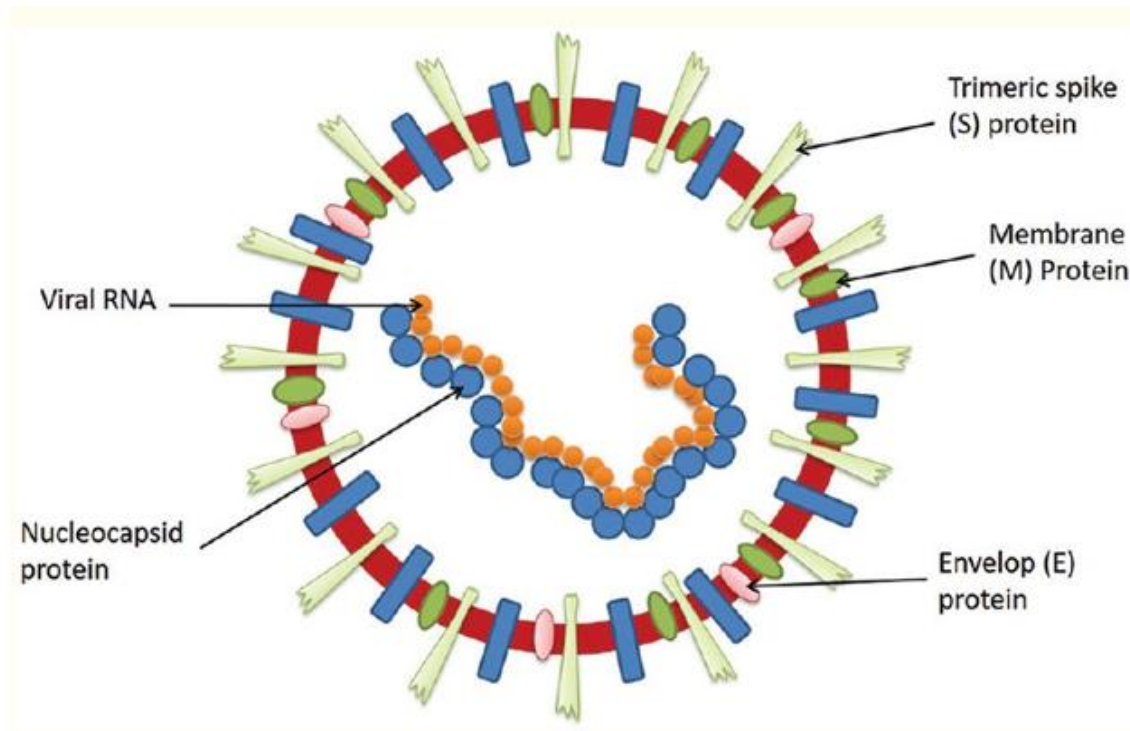
Impact of Omicron

Suggested algorithms



Four Ways to Detect Infection

1. RNA: virus' genetic material
2. Antigen: virus' proteins
3. Viral culture: viable (infectious?) virus
4. Antibody: patient response to virus



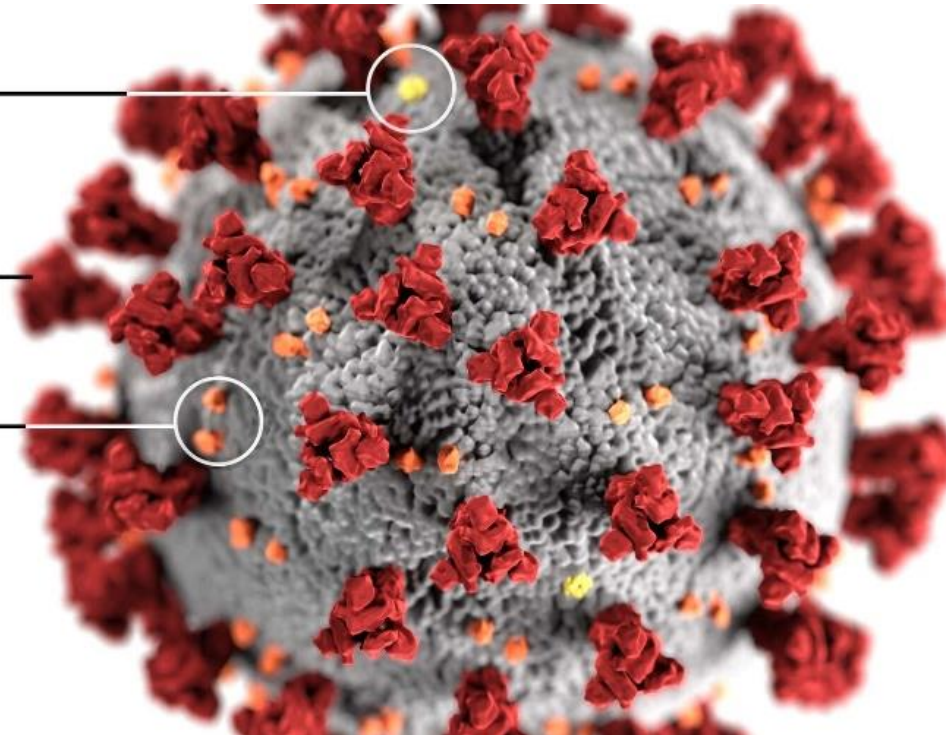
Focus on Antigen Tests

- Disadvantage: less sensitive than PCR, difficult QA, incomplete reporting
- Advantages: cost less, fast TAT, POC or home, accurate+
- Tool to screen/protect HR individuals; increase safety in travel, school and social activities; enable economic recovery

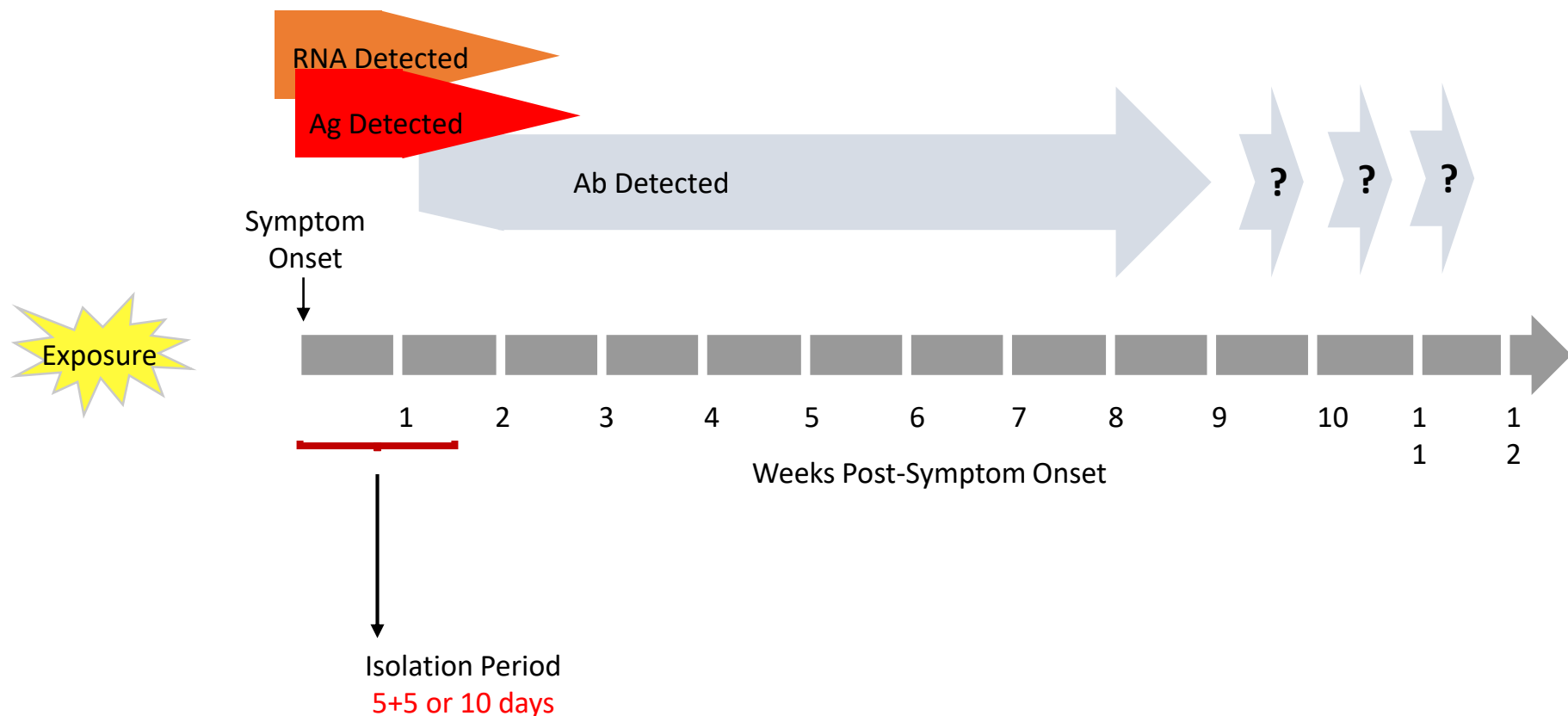
E protein

S protein

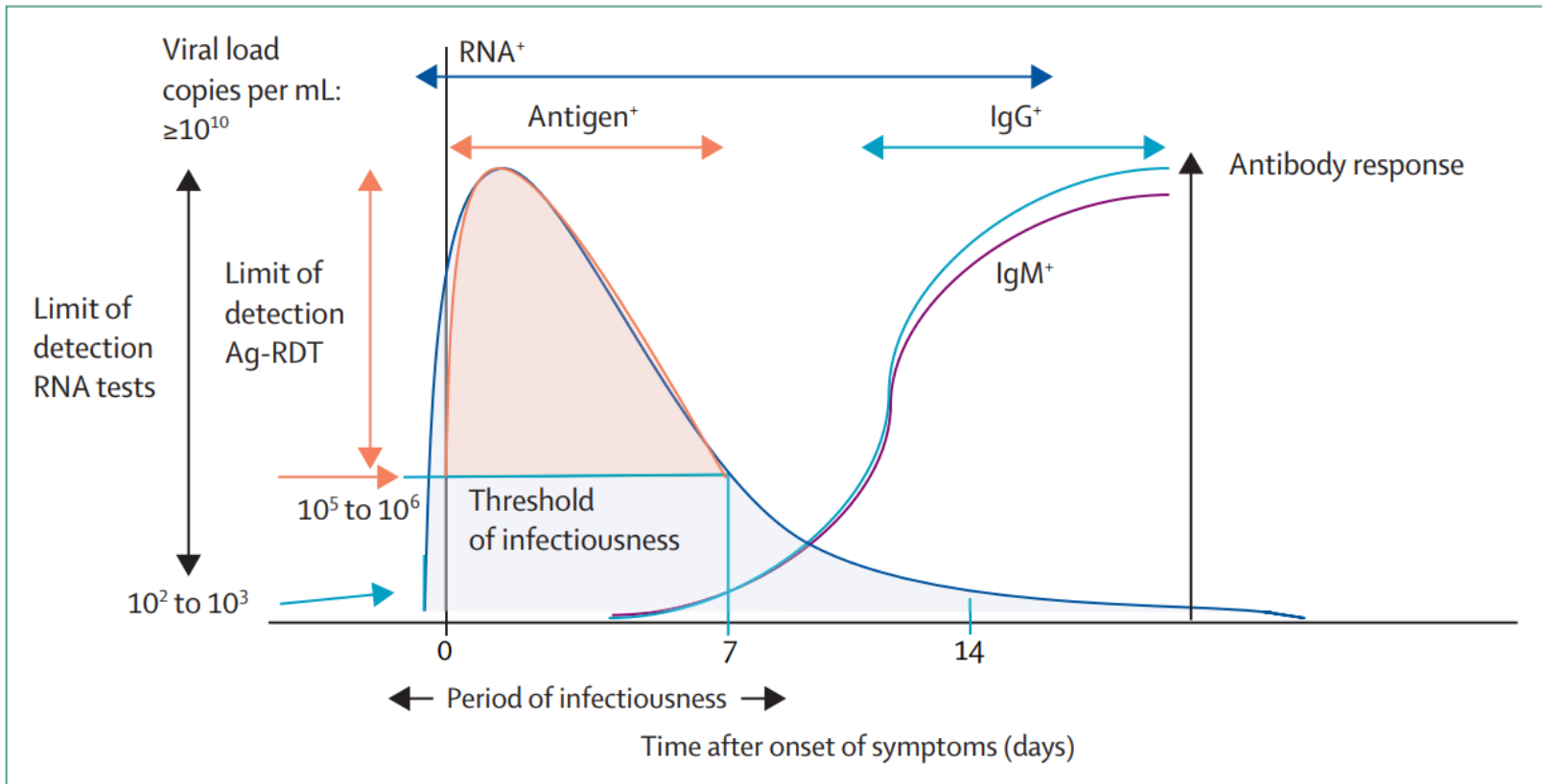
M protein



COVID-19 Testing Timeline



Lancet Systematic Review



Studies of positive viral cultures suggest that mean period of infectiousness and risk of transmission is restricted to 2-3 days before and 8 days after symptom onset

Recent Studies of Correlation to Infectivity (1)

CID 2021:73 (1 Nov)

- 251 persons tested with BD Ag lateral flow, PCR, and culture through 7d symptom onset
- Ag showed better positive predictive value (90%) than PCR (70%) when compared against culture

Clinical Infectious Diseases

MAJOR ARTICLE



Antigen-Based Testing but Not Real-Time Polymerase Chain Reaction Correlates With Severe Acute Respiratory Syndrome Coronavirus 2 Viral Culture

Andrew Pekosz,^{1,2,a} Valentin Parvu,³ Maggie Li,¹ Jeffrey C. Andrews,³ Yukari C. Manabe,^{1,4} Salma Kodsi,³ Devin S. Gary,³ Celine Roger-Dalbert,³ Jeffrey Leitch,³ and Charles K. Cooper^{3,a}

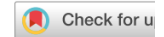
¹W. Harry Feinstone Department of Molecular Microbiology and Immunology, Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland, USA, ²Department of Emergency Medicine, Johns Hopkins University, Baltimore, Maryland, USA, ³Becton, Dickinson and Company, BD Life Sciences—Integrated Diagnostic Solutions, Sparks, Maryland, USA, and ⁴Department of Medicine, Johns Hopkins University School of Medicine, Baltimore, Maryland, USA

Recent Studies of Correlation to Infectivity (2)

Nature SR 2021:11;22863

- 400 PCR+ samples tested with 14 Ag tests and correlated to PCR cT
- Most Ag tests showed sensitivity 99.1% for samples with cT ≤ 30
 - cT ≤ 30 correlates with culture positive (infectiousness)
- Sensitivity fell to 90.9% for cT ≤ 33

scientific reports



OPEN **Diagnostic performance of rapid antigen tests (RATs) for SARS-CoV-2 and their efficacy in monitoring the infectiousness of COVID-19 patients**

John G. Routsias¹, Maria Mavrouli¹, Panagiota Tsoplou², Kyriaki Dioikitopoulou² & Athanasios Tsakris¹

Recent Studies of Correlation to Infectivity (3)

medRxiv 1 Nov

- 181 +NP swabs tested with 3 lateral flow Ag tests, (LumiraDx microfluidic assay,) viral culture
- Ag tests highly correlated to viral culture load, with ROC curve 0.94-0.97
- Ag positivity predicted infectious level of virus




medRxiv

THE PREPRINT SERVER FOR HEALTH SCIENCES



BMJ Yale

SARS-CoV-2 Antigen Tests Predict Infectivity Based on Viral Culture: Comparison of Antigen, PCR Viral Load, and Viral Culture Testing on a Large Sample Cohort

 James E. Kirby,  Stefan Riedel, Sanjucta Dutta,  Ramy Arnaout, Annie Cheng, Sarah Ditelberg, Donald J. Hamel, Charlotte A. Chang, Phyllis J. Kanki

doi: <https://doi.org/10.1101/2021.12.22.21268274>

Impact of Omicron?

medRxiv 2021:73 (1 Nov)

- Serial dilutions of 2 each Delta and Omicron PCR+ samples stored in viral transport media were tested with BinaxNow
- Sensitivity retained for both variants at 100k copies/swab (threshold of infectivity) but 'real life studies needed'

medRxiv

THE PREPRINT SERVER FOR HEALTH SCIENCES



BMJ Yale

Detection of the omicron variant virus with the Abbott BinaxNow SARS-CoV-2 Rapid Antigen Assay

James Regan, James P. Flynn, Manish C. Choudhary, Rockib Uddin, Jacob Lemieux, Julie Boucau, Roby P. Bhattacharyya, Amy K. Barczak, Jonathan Z. Li, Mark J. Siedner

doi: <https://doi.org/10.1101/2021.12.22.21268219>

Impact of Omicron?

medRxiv 2022

- 30 HCP daily Abbott BinaxNOW, Quidel QuickVue and PCR during Omicron outbreak
- D0-1 following +PCR test, both Ag tests FN despite cT suggestive of transmissible virus
 - Mean 3 days to test Ag+ after +PCR
 - 4 cases transmitted with FN Ag results

medRxiv

THE PREPRINT SERVER FOR HEALTH SCIENCES



BMJ Yale

Discordant SARS-CoV-2 PCR and Rapid Antigen Test Results When Infectious: A December 2021 Occupational Case Series

 Blythe Adamson, Robby Sikka,  Anne L. Wyllie, Prem Premririt

doi: <https://doi.org/10.1101/2022.01.04.22268770>

Rapid Test Rollout

- WH will distribute 5M free, rapid tests to schools each month to help K-12 schools stay open to implement and testing
- CDC .
- Work with states who can submit requests to receive additional tests for high-need school districts that can put these tests immediately to use
- After states submit initial requests, the first shipments will be delivered later this month

Is a PCR or antigen test recommended after quarantine (assuming if asx)?

When would a negative antigen test need a confirmatory PCR?

Should individuals get a PCR test to confirm a positive antigen test?

Some home test kits instructions say to conduct two tests to confirm negative. Is this required for both asymptomatic and symptomatic?

What test is recommended for someone who is newly symptomatic but has had COVID-19 in the last 90 days?

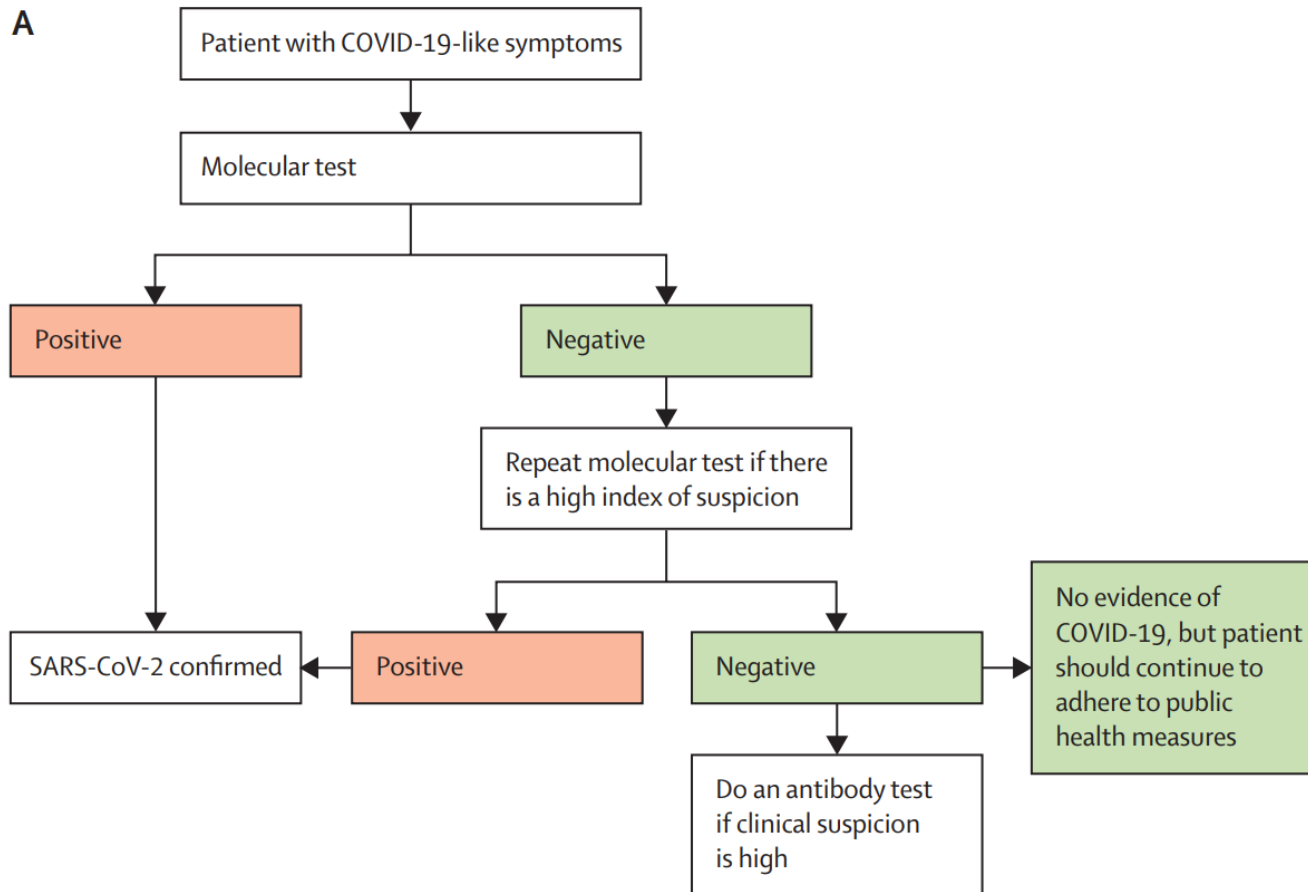
What home tests should we accept?

What is "test to stay" and what is its applicability to NH schools?

If a positive person tests negative 2-3 days after their positive test can they end their isolation?

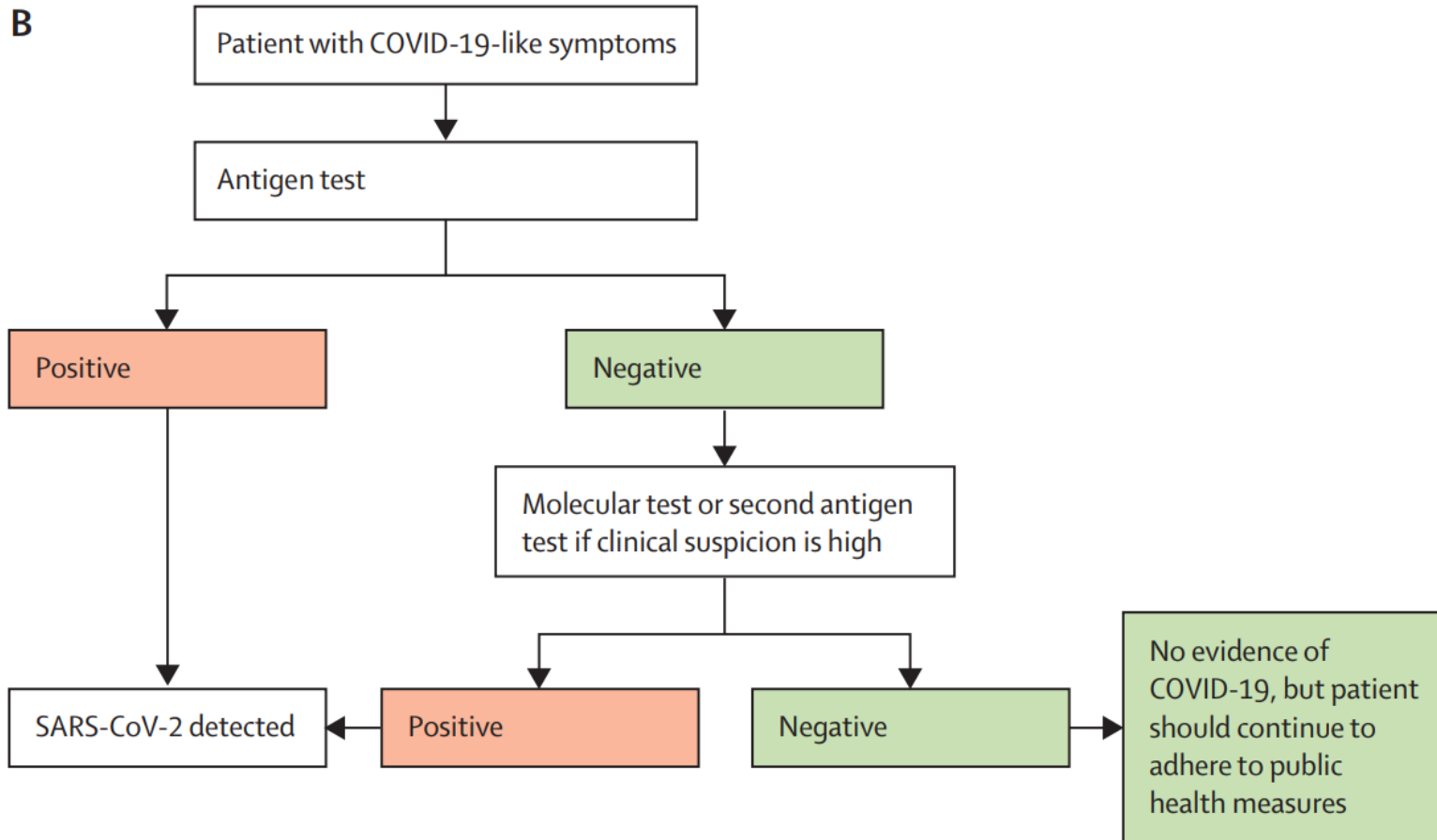
Lancet Systematic Review

Testing Symptomatic Using Molecular Test



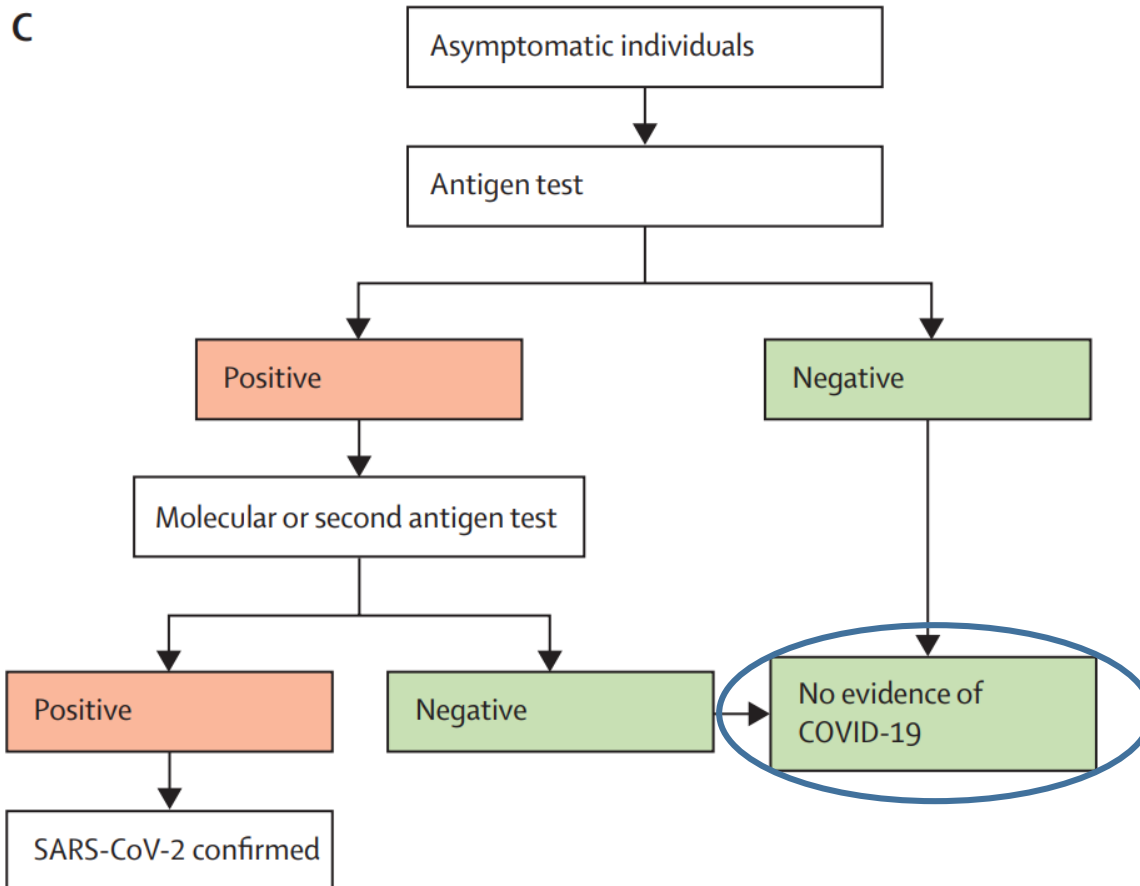
Lancet Systematic Review

Testing Symptomatic Using Antigen Test



Lancet Systematic Review

Testing Asymptomatic Using Antigen Test



Clinical Judgement Needed

Antigen rapid diagnostic test result is positive

True-positive test result

Manage patient and initiate contact tracing and isolation of patient

False-positive result, caused by test result being read incorrectly or low pretest probability (disease prevalence)

If infection is considered to be unlikely, confirm test results with a molecular test or a repeat antigen rapid diagnostic test

Antigen rapid diagnostic test result is negative

True-negative test result

No action needed

False-negative test result, caused by low sensitivity, specimen not being collected properly, or test not being done correctly

Check for quality of specimen collection and rectify; check the ~~sensitivity, or quality, or both~~ of the test; if there is a high suspicion of infection, retest using another antigenic rapid diagnostic test of higher specificity or a molecular test

Isolation and Quarantine Guidance (with FAQs)

Background and Definitions

- Decreasing Isolation and Quarantine to 5 days requires a “package” of interventions be implemented
- Up-To-Date (UTD) on COVID-19 vaccination: A person is “up to date” on COVID-19 vaccination when they have completed a primary COVID-19 vaccine series AND any booster shots which they are eligible for and recommended to receive.
 - CDC has information about [staying up to date on COVID-19 vaccination](#) and who should get a booster shot.
- Under NH guidance, only Household Contacts (HHCs) who are unvaccinated or NOT Up-To-Date on all recommended vaccines need to quarantine
- Healthcare workers have separate guidance:
<https://www.cdc.gov/coronavirus/2019-ncov/hcp/guidance-risk-assesment-hcp.html>

Isolation Guidance

Persons who should isolate	Recommended Action
<p>Any person who tests positive for COVID-19 or who has symptoms of COVID-19 while awaiting testing – regardless of vaccination status, previous infection, or lack of symptoms.</p> <p>(Note: CDC recommends longer periods of isolation for people who are severely ill with COVID-19 and require hospitalization or intensive care unit support, or for people with severely compromised immune systems.)</p>	<ul style="list-style-type: none"> • Stay home and away from others (including people in your household) for at least 5 days. • Isolation can end after day 5 if you are fever-free (off fever-reducing medications) for at least 24 hours and other symptoms are improving. • If fever has been present in the prior 24 hours, or if other symptoms are not improving, then you should continue to isolate until fever free and symptoms are improving for at least 24 hours, or until after 10 days of isolation. • For 10 days: <ul style="list-style-type: none"> ○ Wear a well-fitting medical face mask when around other people. ○ Avoid people who are immunocompromised or at high-risk for severe disease. ○ Avoid travel, if possible. <p>Note: per CDC guidance, you can take an antigen test on day 5 before ending isolation and, if positive, you should continue to isolate for a total of 10 days. Individuals and businesses/organizations can consider but do not have to adopt this testing strategy.</p>

Quarantine Guidance

Persons who should quarantine after being exposed to someone with COVID-19	Recommended Action
<p>Household contacts who are either:</p> <ul style="list-style-type: none">• Unvaccinated; OR• Not “up to date” on receiving all recommended COVID-19 vaccine doses	<ul style="list-style-type: none">• Stay home and away from others for 5 days after the last exposure.• Watch for symptoms for COVID-19 for 10 days after the last exposure, and get tested if symptoms develop.• Get tested at least 5 days after the exposure, even if no symptoms develop. If positive, move to isolation.• For 10 days:<ul style="list-style-type: none">○ Wear a well-fitting medical face mask when around other people.○ Avoid people who are immunocompromised or at high-risk for severe disease.○ Avoid travel, if possible.

Guidance for People Exposed but NOT Required to Quarantine

Persons who do NOT need to quarantine after being exposed to someone with COVID-19	Recommended Action
<ul style="list-style-type: none">• Lower risk exposures in the community setting (e.g., non-household contacts)• Household contacts who are “up to date” on receiving all recommended COVID-19 vaccine doses• Unvaccinated household contacts who are within 90 days of testing positive for COVID-19 by antigen or PCR-based testing	<ul style="list-style-type: none">• Wear a well-fitting face mask around other people for 10 days, especially in indoor settings.• If symptoms develop, stay home and get tested for COVID-19.• Get tested for COVID-19 on day 5, even if you don’t have symptoms.• If testing is positive, follow isolation recommendations above.

Flowchart for Deciding Quarantine

Is the person with COVID-19 in the household able to follow all recommendations for isolation (i.e., isolation from other household members for 5 days followed by wearing a well-fitting face mask* at home for 5 days)?

Yes

No

Is the HHC able to wear a well-fitting face mask when around other people?

Is the HHC able to wear a well-fitting face mask when around other people?

Yes

No

Yes

No

The HHC should quarantine for 5 days after last exposure to the person with COVID-19 followed by 5 days of wearing a well-fitting mask when around others

The HHC should quarantine for 10 days after last exposure to the person with COVID-19 and wear a well-fitting mask at home, if possible

The HHC should quarantine for 5 days after last exposure to the person with COVID-19 during their isolation period followed by 5 days of wearing a well-fitting mask when around others

The HHC should quarantine for 10 days after last exposure to the person with COVID-19 during their isolation period and wear a well-fitting mask at home, if possible

Rapid Fire FAQs

- **Do children at school or childcare need to isolate/quarantine for 10 days just because masks are taken off during lunch? Or is a separate lunch room needed for people coming off shortened isolation/quarantine?**
 - No (to both questions) – students should wear masks when not eating, minimize time with masks off, and schools should continue to maximize physical distancing in the lunch room to the extent possible.
- **If a person can't/won't consistently wear a face mask, should they isolate/quarantine for 5 or 10 days?**
 - 10 days
- **Can the responsibility for enforcing mask use on day 6-10 be left up to the person coming off isolation/quarantine if an organization has a general “optional” mask policy?**
 - We continue to recommend face masks for everybody in indoor public locations. Alternately, we recommend you can keep track of and require individuals to wear a face mask – CDC estimates ~30% of people with COVID-19 will continue to be infectious after day 5.
- **Can a school stick to the 10-day isolation/quarantine period?**
 - No, unless the person does not/cannot comply with the 5-day post-isolation/quarantine mask requirement.
- **Should face masks be required outdoors for people ending isolation/quarantine early?**
 - No. Everybody needs face mask breaks, and outdoors is the appropriate place for a face mask break. We also don't want individuals singled out or stigmatized.
- **Can a school or organization require testing for a person to come back to work, school, or childcare?**
 - Yes.

Rapid Fire FAQs

- **Which test should we use?**
 - Coming off isolation after infection: antigen testing (because of the possibility of prolonged PCR positivity).
Coming off quarantine after an exposure: Either antigen or PCR, but PCR remains more accurate/sensitive at picking up infection early (i.e., PCR is still the better test for asymptomatic testing)
- **Should a person coming off isolation/quarantine early still be excluded from some extracurricular activities for a full 10 days?**
 - It should be considered for certain high-risk activities, especially if mask use is difficult (e.g. some sports), or there will be exertion and close contact (e.g. wrestling). Alternatively we would recommend a negative test before being allowed back to high-risk activities after 5 days of isolation/quarantine.
- **If a person tests negative after 2-3 days can they end their isolation/quarantine before day 5?**
 - No. Any testing performed should be at ~ day 5 (as close as possible to the time a person is coming off isolation/quarantine); if a person tests negative earlier, they still need to complete a full 5 days of isolation/quarantine
- **If a person is NOT up to date (UTD) on all recommended vaccines and then gets exposed in the home, can that person get a booster to come off quarantine?**
 - No. Once a person is exposed they need to quarantine if not UTD on vaccinations. However, a booster takes effect immediately, so if a person is boosted and then exposed to someone the following day who is considered infectious (a person who has COVID-19 is still considered infectious starting 2 days before symptom onset), that person does NOT need to quarantine.
- **If a person is exposed in the home, but the individual with COVID-19 is NOT able to fully separate themselves and/or won't wear a mask, how long do the household contacts who are unvaccinated or not UTD on vaccination need to stay home?**
 - Household contacts need to stay home while exposure is occurring, and then during quarantine which starts the day AFTER the last day of exposure. This can take various scenarios...

Rapid Fire FAQs

Quarantine Scenarios for Exposure in the Home:

Person with COVID-19	Quarantine Timeframe for Household Contacts (HHCs)
Able to separate from others in the home AND wears a face mask for 10 days in the home	5 day quarantine starts the day after the person with COVID-19 goes into isolation (i.e., the last day of exposure)
Does NOT separate from others in the home, but DOES wear a face mask for 10 days in the home	HHCs stays home for the 5 days the person with COVID-19 is required to isolate (while exposure is occurring in the home), then a HHC's 5 day quarantine starts the day the person with COVID-19 comes off isolation
Does NOT separate from others in the home and does NOT wear a face mask in the home	HHCs stay home for the 10 days the person with COVID-19 is required to isolate (while exposure is occurring in the home), then a HHC's 5 day quarantine starts the day the person with COVID-19 comes off isolation

Q&A

Healthcare Provider & Public Health Partner Calls

- **2nd and 4th Thursday** of each month from 12:00-1:00 pm
(Next call will be January 27, 2022)
- Webinar/call information (stays the same):
 - Zoom link: <https://nh-dhhs.zoom.us/j/94059287404>
 - Webinar ID: 940 5928 7404
 - Passcode: 353809
 - Telephone: 646-558-8656