PUBLIC HEALTH INSTITUTE OF WESTERN MASSACHUSETTS
PARTNERS FOR HEALTH EQUITY

# Questions and Answers from 8/31/21 Webinar, *Updates on COVID-19: What you Need to Know about the Delta Variant, Vaccinations, and Masking*

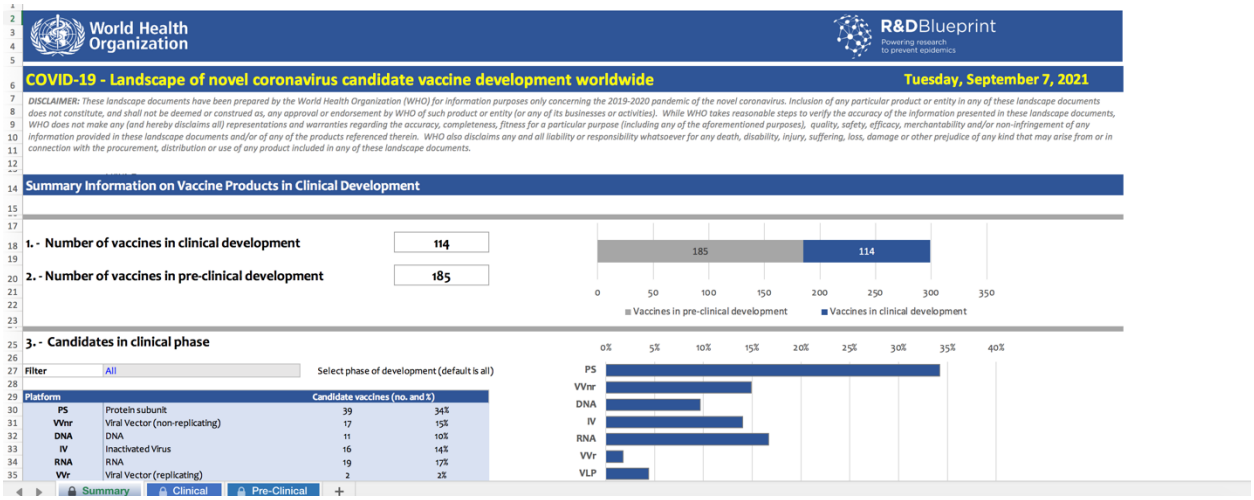
Answers provided by Dr. Armando Paez, M.D., FACP, FIDSA, Chief of Baystate Health Division of Infectious Disease, Updated 9/7/2021

1. **What is recommendations/advantage/disadvantage for rapid COVID testing?**
   "Rapid" test platforms can be antigen-based (less sensitive) and PCR-based (more sensitive). Depending on how the test result is being utilized, either can be useful. There are several studies that have been conducted for purposes of travel, in person schooling, athletic camps etc. Studies also have been conducted among with symptoms and no symptoms. So before using the test for a particular purpose, one can look at the studies conducted to help interpret results.

2. **Wondering if we know who is more likely to spread covid: an unvaccinated person who has had Covid OR a vaccinated person who hasn't had Covid?**
   Based on the CDC statement when they conducted the Provincetown outbreak where 74% of positives were vaccinated, the level of virus in the nasopharynx based on cycle threshold (Ct value) for both vaccinated and unvaccinated are about the same (I caution interpretation of this, however). Thus, the ability to transmit infection remains significant. Updated masking guidelines among vaccinated are partially based on this.

3. **What is the timing of normal multi-dose vaccines, and the potential expectation that COVID vaccines might be 2 or 3 doses moving forward with several months between each shot?**
   This will depend on the vaccine platform. Pfizer and Moderna are both mRNA vaccines studied clinically based on preclinical studies that dictated dosing schedule. Based on current information, the 2 dose mRNA vaccine schedule will be how they were studied ( 3 weeks – Pfizer, 4 weeks – Moderna) and the "booster" likely after 5-8 months based on Israel data (real world data). It is still unclear if and when subsequent vaccination will be needed. Again the circulating variants may dictate this (It's the virus and not the host, that is).

4. **Are you aware of any research on developing a vaccine that will work against the other possible variants?**
   Yes, there are many vaccines being developed. As of now there are >300 COVID vaccines being studied. I want to mention that the mRNA vaccine is special in a way that they can change the genetic code to adapt to the variant being addressed in a relatively straightforward way.



World Health Organization

R&DBlueprint
Powering research to prevent epidemics

**COVID-19 - Landscape of novel coronavirus candidate vaccine development worldwide** — Tuesday, September 7, 2021

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**Summary Information on Vaccine Products in Clinical Development**

| | |
|---|---|
| 1. - Number of vaccines in clinical development | 114 |
| 2. - Number of vaccines in pre-clinical development | 185 |



**3. - Candidates in clinical phase**

Filter: All — Select phase of development (default is all)

| Platform | | Candidate vaccines (no. and %) | |
|---|---|---|---|
| PS | Protein subunit | 39 | 34% |
| VVnr | Viral Vector (non-replicating) | 17 | 15% |
| DNA | DNA | 11 | 10% |
| IV | Inactivated Virus | 16 | 14% |
| RNA | RNA | 19 | 17% |
| VVr | Viral Vector (replicating) | 2 | 2% |

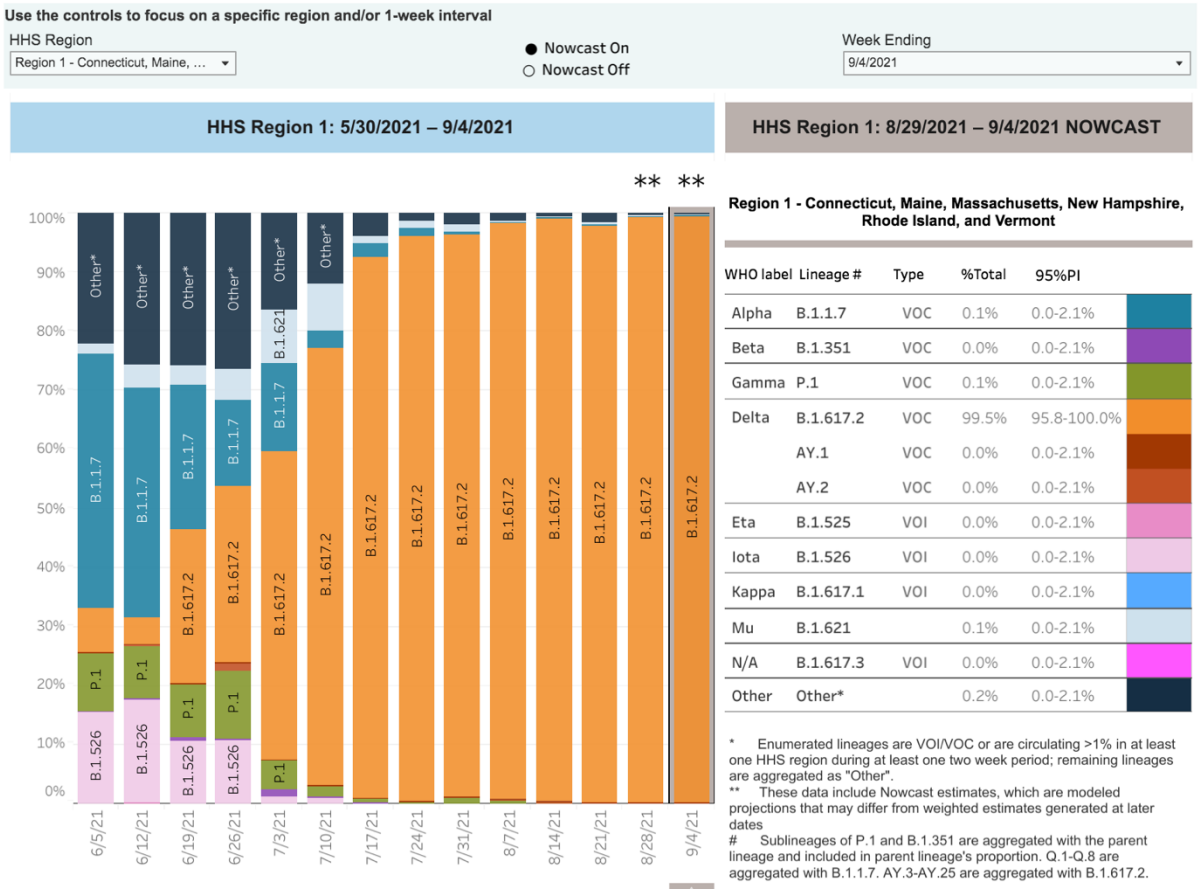


Summary | Clinical | Pre-Clinical

5. **What are the specific immune compromised conditions that will be needing boosters?**
   CDC primarily recommended the boosters for mod-severely immunocompromised e.g. transplant, cancer undergoing chemotherapy, advanced HIV. However, this is likely part of the immunocompromised "primary series" COVID vaccination (3 dose schedule rather than 2 dose for otherwise healthy individual). As noted before, there will be also a 3rd dose for the general population, as a booster in its true definition.

6. **What is the immunity that people who had Covid19 have? Is it greater than a vaccinated person has?**
   This is still being investigated. Studies are mixed to date. Recent data suggest that natural immunity may be greater than vaccine-induced immunity. Remember, being unvaccinated puts oneself at risk of complication of COVID-19 including long haul/Long COVID even after mild infection. There is also data to support that vaccinating after COVID gives extra protection vs. those without vaccination >2x more protection.

7. **What is the South African variant we've been seeing reports about; known as C.1.2? Reports are that vaccines aren't stopping it and that it's more infectious that other strains. Have we seen any cases in Western MA? What is the medical community talk about when it comes to this Covid-19 variant?**
   Yes, C.1.2 /mu variant unfortunately has mutations that allow escape immunity (natural or vaccine-generated). To date it is not widespread yet (<0.01%) based on the genomic surveillance tracker of CDC. Below is the proportion in Region I (northeast)




8. **Why is there not more emphasis on how people can build up their natural immune systems?**
   In my opinion, we are still trying to understand our immune system as how it interacts with SARSCoV2. Each immune system is designed based on genetic endowment and it adapts to the environment. A genetic component is likely related to why some people who are otherwise healthy end up very sick in the ICU. Some markers are being studied including blood type, etc.

9. **What level of Vitamin D should be a concern as it relates to Covid? Is the range of 30-60 ng/ml Vit D good enough?**
   Based on one study, 30 appears to be the party line with lower level associated with more severe disease.

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# Vitamin D deficiency is associated with COVID-19 positivity and severity of the disease

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Free PMC article

## Abstract

The present study examined the relationship between polymerase chain reaction (PCR) test positivity and clinical outcomes of vitamin D levels measured within the 6 months before the PCR test in coronavirus disease 2019 (COVID-19)-positive patients. In this retrospective cohort study, COVID-19 (227) and non-COVID-19 patients (260) were divided into four groups according to their vitamin D levels: Group I (0-10 ng/ml), Group II (10-20 ng/ml), Group III (20-30 ng/ml), and Group IV (vitamin D > 30 ng/ml). Laboratory test results and the radiological findings were evaluated. In addition, for comparative purposes, medical records of 1200 patients who had a hospital visit in the November 1, 2019-November 1, 2020 period for complaints due to reasons not related to COVID-19 were investigated for the availability of vitamin D measurements. This search yielded 260 patients with tested vitamin D levels. Vitamin D levels were below 30 ng/ml in 94.27% of 227 COVID-19-positive patients (average age, 46.32 ± 1.24 years [range, 20-80 years] and 56.54% women) while 93.07% of 260 non-COVID-19 patients (average age, 44.63 ± 1.30 years [range, 18-75 years] and 59.50% women) had vitamin D levels below 30 ng/ml. Nevertheless, very severe vitamin D

10. **Can you please speak/follow up via email about relative risk of Delta vs. original strain on kids/teens who are unvaccinated?**
    At this time, we don't know if Delta can cause more severe disease in children compared to other strains. Thought leaders on this believe based on current information that children can transmit the virus as effectively as the adults. At least by inference, it will likely be the same level of transmissibility of Delta (higher vs. other strains) among children and adolescent. So far in Baystate Health, despite Delta circulating we haven't had any spike of seriously ill children in the hospital (and that is a good sign). However, school just started.

11. **What is the risk of getting infected (including mild case) if vaccinated vs. unvaccinated?**
    Unvaccinated has higher risk of getting infected compared to vaccinated. Just compare the communities with higher rates of vaccination (northeast states vs. southern states) where cases are much higher in those states where the population is largely unvaccinated. The variant can change the level of protection as shown now by the Delta. And this has important implication in future waves. Risk of hospitalization and deaths due to COVID-19 also is higher in the unvaccinated.

12. **Can you explain the difference between an N95 and a KN95? How often do you need to change them if they do not get dirty?** As I mentioned briefly during the talk, the distinction between N95 vs. KN95 is the agency that certifies the mask. N95 (US – NIOSH-- National Institute for Occupational Safety and Health) and KN95. Supposedly a __95 mask is supposed to filter out at least 95% of airborne particles. There are further classification of 95 masks (**N**ot resistant to oil, hence N95), R95 (**R**esistant to oil) and P95 (oil **P**roof). Current MA-DPH guidance recommend one time use. Reuse was previously allowed in the past surges due to supply issues.

13. **Do you anticipate a booster for folks over 60?**
    Yes, this was announced by authorities. Details of roll out for "booster" among the general population including >60 still need to be released. Likely elderly, nursing home residents and healthcare workers will be prioritized. Based on what I have been hearing the Pfizer was ahead in submitting data and so there will be initial guidance among the Pfizer recipients related to booster shot. Moderna should follow shortly along with J&J vaccine.

14. **How long after exposure should people get tested? Should people get tested multiple times before returning to school/work?**
    CDC has guidance on this. Typically after 3-5 days after exposure (https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/testing.html) Screening testing could be effective in preventing transmission for select workplace settings. CDC has guidance on this: https://www.cdc.gov/coronavirus/2019-ncov/community/organizations/testing-non-healthcare-workplaces.html

15. **What are the best airpurifing protocols we should have in place?**
    I am not an expert on ventilation and particle physics, but HEPA filters are no less than 99.97% efficient at capturing human-generated viral particles associated with SARS-CoV-2.CDC has a section on ventilation as it relates to COVID-19.
    https://www.cdc.gov/coronavirus/2019-ncov/community/ventilation.html

16. **Which healthcare organizations are mandating staff vaccinations?**
    From what I know, Trinity Health, Baystate Health and Cooley Dickinson Hospital. Most MA hospitals will be mandating COVID-19 vaccination.

17. **How safe is it for kids to be going back to school in person?**
    With masking in indoor activities and crowded outdoor activities, I think it is reasonably safe to go back in person. Enforcing it is key to successful prevention.

18. **How should people age 60-69 evaluate how safe it is to work customer-facing jobs with the Delta variant, waning vaccine efficacy, and the unvaxed?**
    Customer facing jobs has intrinsic risk of being exposed to somebody that is unvaccinated. Proper masking and with booster shot, I think it is reasonably safe.

19. **I have mild asthma and sleep apnea. Should I try and get my booster shot 6 months after my 2nd Pfizer vaccine, or should I get a booster earlier?**
    There is data to suggest that the longer duration between shot can trigger immune response from the vaccine. However, this poses a risk of where the level of protection goes down that breakthrough infection can occur. Optimal timing in light of the Delta variant is a matter that is being investigated, but somewhere between 5-8 months from 2nd shot of mRNA vaccine.

20. **Is masking when the vast majority of a population (more than 90%) discouraged, even in large group settings (more than 30 people in a room)?**
    I am not sure if I understand this question correctly. If the question is about masking in large group setting 30 people where 90% is vaccinated. The possibility of transmitting SARSCoV2 is still there. Risk can go up or down depending on how many among the 30 are shedding the virus/silently infected, if booster shots have been given, if Delta is the circulating variant, etc. In the Provincetown outbreak, 74% of infected have been vaccinated.

21. **Should we be more concerned about our level of protection as we get closer to 8 months from first vaccine-is our protection waning?**
    It appears that vaccine immunity is waning based on Israel data and from the CDC states. To be concerned depends on the community risks. Booster shot is soon to be recommended among the general population and this should offer a peace of mind at least with the delta variant. For future variants, that remains to be seen.

22. **What are best practices for safely convening indoors?**
    "If you do not feel well, do not attend" policy; being vaccinated, avoid shouting, singing or activities that can aerosolize respiratory droplets. masking and improving ventilation (open windows) and air filtration (egHEPA filtration)