CDC/IDSA COVID-19 Clinician Call:

COVID-19 Vaccine Boosters and Q&A with CDC's Vaccine Task Force

September 25, 2021

Q&A

This is the Q&A transcript from the Zoom webinar, formatted and edited for spelling and grammar only. The views and opinions expressed here are those of the presenters and do not necessarily reflect the official policy or position of the CDC or IDSA. Involvement of CDC and IDSA should not be viewed as endorsement of any entity or individual involved.

1. **When will CDC data about safety of 3rd doses given in the US be released? We are relying on data from other countries but it will be helpful to get real time US data.**

   Some preliminary data was presented during this week's ACIP meeting. That presentation is available now on the ACIP website: https://www.cdc.gov/vaccines/acip/meetings/slides-2021-09-22-23.html

   We anticipate publication of that data soon - as early as next week. (Dr. Tromble)

2. **Will severely immunosuppressed patients need a booster 6 months after receiving their 3rd dose?**

   We do not know the answer to this question yet. (Dr. Chatterjee)

3. **Ethical question: How can we defend a booster dose for anyone not needing a true 3rd dose because of immunosuppression when the majority of the world has not even received a single dose?**

   This is obviously a challenging question. It may turn out that the appropriate primary series for these vaccines is three doses for mRNA vaccines at about 0, 1, and 6 months, much the same way as it is for a number of other adult vaccine. If that is the case, everyone across the globe will need this regimen if we are to truly bring the pandemic under control. Failing to adequately control the virus could also have adverse global consequences. (Dr. Marks)

4. **I have heard of those not taking the vaccine due to fetal cells used in production. How might I address this concern?**

   No fetal cell-based technologies are used to make the mRNA-based vaccines. (Dr. Chatterjee)

5. **Is there any role in measuring titers? If so, what titer level is clinically significant?**

   There is no defined titer that is clinically significant, and different antibody tests report quite different numbers and scales. (Dr. Crotty)

6. **For patients facing occupational risk that have received two doses of Moderna, with the last dose 8-9 months ago, should they get Pfizer booster ?**

   The current CDC recommendation is for people who received Pfizer primary series and is in regards to Pfizer booster. Data for people who have received Moderna primary series / Moderna booster we understand is under review and expect those recommendations will be forthcoming. (Dr. Goswami)

7. **Will the immunocompromised patients who received a 3 dose series need a booster dose 6 months later?**

   We do not know the answer to this question yet. (Dr. Chatterjee)

8. **How long patients who received booster were followed to assess safety?**

   For the approximately 329 people in the Pfizer study for the EUA they were followed for safety a median of 2 months. (Dr. Marks)

9. **This is being discussed in a fashion that SKIPS the work of ILC, NK cells and B-1 cells. This is not true of how and needs to be amended.**

   That is incorrect. The vaccines generate immune memory, and those are not cell types involved in vaccine memory (Dr. Crotty)

10. **Regarding the booster: Does it make a difference if you receive a Pfizer booster for a Moderna vaccine and vice versa? Reason being in some countries some people are receiving first shot Pfizer and second shot Moderna. What booster would they take now? One country is doing one thing and the other another out of necessity or need. What is safe?**

    Data on heterologous vaccine series are limited, and we're unable to make specific recommendations regarding this practice. (Dr. Tromble)

11. **Please comment on the specific, evidence-based tools to measure correlates of immunity.**

    Formally done here for Moderna, in a study only measuring antibodies: https://www.medrxiv.org/content/10.1101/2021.08.09.21261290v4 . (Dr. Crotty)

12. **Why has plasma been less useful in therapy?**

    The issue here has been getting both titer and timing right: one needs to give high titer plasma to people early in the disease course (generally less than 72 hours after presentation with no need for ventilatory support. If given at high titer and at the right time, it may be beneficial - and in those with hematological malignancies data suggest that it may be very helpful. (Dr. Marks)

13. **Why is there little discussion about not needing to give vaccines to those who had COVID?**

    Primary series vaccination decreases risk of future infections in people with prior SARS-CoV-2 infection, and it is recommended persons with prior COVID-19 receive a primary series vaccination. (Dr. Goswami)

14. **Why is there not yet an accepted widely available antibody assay to determine adequacy of neutralizing antibodies, similar to chickenpox or measles? This is needed by front line clinicians to bring some rationality to discussions with individual patients around immunity/vaccine boosters etc.**

    Because we do not have a "serologic correlate of protection" for COVID. The same situation exists for other infections such as whooping cough. (Dr. Chatterjee)

15. **Does the vaccine or natural infection induce mucosal IgA antibodies?**

    SARS2 infection causes mucosal IgA (Jennifer Gommerman and colleagues, among others). We and other measured IgA in blood as a surrogate (Dan et al. Science, as one example). The RNA vaccines do not elicit a substantial IgA response. But IgG gets transferred into mucosal sites. This is the basis of the outstanding success of the HPV vaccine (papillomavirus). It is a vaccine that only elicits IgG and is > 99% effective at preventing mucosal infection. (Dr. Crotty)

16. **This information seems to suggest that the primary series could be robustly protective (without booster shots) - please comment**

    Current data suggests the currently approved or authorized COVID-19 vaccines are highly effective against hospitalization and death for the Delta variant within the first 6 months from immunization https://www.cdc.gov/coronavirus/2019-ncov/science/science-briefs/fully-vaccinated-people.html (Dr. Goswami)

17. **Current commercial antibody tests measure which type of antibody?**

    Depends on the test. Many measure RBD (a fragment of Spike), but some measure nucleocapsid (N, or NC). Nucleocapsid antibodies are irrelevant for protection. (Dr. Crotty)

18. **Do you have any paediatric data on T cell responses?**

    It is an important topic, but it is hard to get sufficient blood samples donated to make those measurement. I don't recall any published data on this. (Dr. Crotty)

19. **After infection, there is some data suggesting higher levels of antibody against spike in vaccinated but higher levels in RBD domain in unvaccinated. Does vaccine change the character of immune response?**

    Both the Pfizer and Moderna vaccines elicit higher RBD and Spike titers than is elicited in most infected persons. (Dr. Crotty)

20. **How does the immunological get affected by delta variant?**

    The immune memory generated by the Pfizer and Moderna vaccines recognizes Delta variant very well. (Dr. Crotty)

21. **Is the IgA deficient individual more susceptible to SARS-CoV-2 infection?**

    I am not aware of data on this. The RNA vaccines do not elicit a substantial IgA response. But IgG gets transferred into mucosal sites and can be protective. This is the basis of the outstanding success of the HPV vaccine (papillomavirus). It is a vaccine that only elicits IgG and is > 99% effective at preventing mucosal infection. (Dr. Crotty)

22. **If patient has covid-19, do they need booster dose?**

    While primary series vaccination decreases risk of future infections in people with prior SARS-CoV-2 infection, efficacy of a booster dose for fully vaccinated people with known prior SARS-CoV-2 infection is not yet known. (Dr. Goswami)

23. **If we are treating hospitalized and severely ill patients with immune suppressing meds (dex, to i, bari) during the proposex "inflammatory phase" what does this say about whether evidence of cell mediated immunity is reassuring?**

    Timing matters. It is a complex topic. Discussed at some length here:

    https://linkinghub.elsevier.com/retrieve/pii/S0092867421000076 (Dr. Crotty)

24. **For CDC: By when do you anticipate the Pfizer vaccine standing order template being updated with booster recommendations and posted?**

    We are aiming for within the next 7-10 days. (Dr. Goswami)

25. **Several hcw's have had 'breakthrough' infection prior to booster- can we assume that these people have some additional protection with antibodies from their breakthrough infection? (likely a Delta due to geographic location)**

    Previously infected persons who get vaccinated (at least one dose) have fantastic immunity, higher than that of normal vaccinated individuals. I summary this "hybrid immunity" in a short article in Science: https://www.science.org/lookup/doi/10.1126/science.abj2258. And there is now epidemiological data also. (Dr. Crotty)

26. **Are there any special considerations or concerns about a healthcare worker receiving a Pfizer booster in the third trimester?**

    There appear to be no safety concerns or special considerations for a Pfizer booster for pregnant women in the third trimester. (Dr. Chatterjee)

27. **Will those in the approved age groups no longer be considered fully vaccinated if they do not get the 3rd dose?**

    Administration of an additional dose to people with moderate to severe immune compromise or a booster dose is not required to be considered fully vaccinated for public health purposes. (Dr. Goswami)

28. **Are there ACOG and ACIP recommendations for 3rd doses pregnant women who have received Pfizer?**

    These will be included in updated CDC recommendations, to be posted hopefully this week https://www.cdc.gov/vaccines/covid-19/clinical-considerations/covid-19-vaccines-us.html (Dr. Goswami)

29. **Such a small sample size to test a booster (11 and 12 ppl).**

    The Pfizer safety dataset on boosters involved 329 people and there was immunogenicity data on about 200 of these individuals. This was completely consistent with the guidance provided by FDA for the evaluation of boosters in this setting. (Dr. Marks)

30. **Can the panel comment on the fact that the mRNA vaccines might well be a 3 dose regimen? Also, the recent data from JNJ suggests it is a two dose and not a one dose vaccine. How are those decisions made?**

    The initial dosing schedule was decided by the sponsors based on animal studies. Dosing regimens for vaccines are sometimes revised based on emerging data after they become widely used, e.g. Trumenba, HPV. (Dr. Chatterjee)

31. **To the presenters: please comment on how you feel that we as a community of clinicians and scientists can trust the impartiality and science-based actions of the advisory committees and entities establish to ensure the safety and science-based implementation of vaccines if these past few days seem to be driven by political interactions.**

    If you watch the VRBPAC meeting, it will become clear that the committee members debated vigorously and each individual came to their own conclusions regarding the data presented. (Dr. Chatterjee)

32. **With the current knowledge can be projected how often we are going to need booster after third dose?**

    We do not know this yet. (Dr. Chatterjee)

33. **For the newly submitted Pfizer data on children ages 5-11, are there meetings for VEBPAC scheduled, and if so, when?**

    A VRBPAC meeting for this population is not yet scheduled, but please stay tuned. (Dr. Marks)

34. **I do not understand the word "waning immunity" if the pathogen changed from 6/8 months ago- delta is different, and we may have seen same levels of protection last fall rather than what was seen against the less transmissible and less severe D614G... no?**

    Two large studies in the UK were able to compare immunity to Alpha and Delta in the same time window, and found that, for example, the Pfizer vaccine was still very effective against Delta compared to Alpha. (Dr. Crotty)

    https://www.medrxiv.org/content/10.1101/2021.08.18.21262237v1

    https://www.nejm.org/doi/10.1056/NEJMoa2108891

    Effectiveness of Covid-19 Vaccines against the B.1.617.2 (Delta) Variant

35. **How does the composition of the booster dose differ from that of the first two doses/initial vaccine?**

    It is the same. (Dr. Chatterjee)

36. **Should booster doses for HCWs become optional versus obligatory?**

    The current CDC recommendation for healthy HCW less than 65 is that they MAY receive booster, not that they SHOULD or are required to receive. (Dr. Goswami)

37. **For CDC: When do you anticipate the updated booster recommendations being published in the MMWR?**

    The MMWR will be taking a few weeks to come out. In the interim we are aiming to update CDC Clinical Considerations within ~72 hours https://www.cdc.gov/vaccines/covid-19/clinical-considerations/covid-19-vaccines-us.html (Dr. Goswami)

38. **People who had MIS-C after COVID-19 infection or vaccine, is a contraindication to receive the first/second dose vaccine or the booster vaccine?**

    No, although caution should be exercised - please see more specific guidance on MIS-C and COVID-19 https://www.cdc.gov/vaccines/covid-19/clinical-considerations/covid-19-vaccines-us.html (Dr. Goswami)

39. **Is there evidence that booster vaccines have reduced risk of asymptomatic spread by people that have been given the 3rd dose. This would give additional reason for booster doses in healthcare workers and congregate settings.... etc.**

    Good question - no data yet. (Dr. Chatterjee)

40. **So if patient is on criteria for booster but got infected with the virus. Is booster still necessary?**

    While primary series vaccination decreases risk of future infections in people with prior SARS-CoV-2 infection, efficacy of a booster dose for fully vaccinated people with known prior SARS-CoV-2 infection is not yet known. (Dr. Goswami)

41. **What do you recommend for hospital administrators- should they MANDATE the booster dose for healthcare workers (physicians, nurses, etc.)? What data should they share with their staff, other than the weaning immunity?**

    No. (Dr. Goswami)

42. **What about if you are vaccinated then get infected**

    While primary series vaccination decreases risk of future infections in people with prior SARS-CoV-2 infection, efficacy of a booster dose for fully vaccinated people with known prior SARS-CoV-2 infection is not yet known. (Dr. Goswami)

43. **What is holding the science of measuring protective immunity back? Accuracy? Reliability?**

    It is hard in many ways. One practical aspect is that measuring T cells is much more resource and time intensive than antibodies. At least 10x. So no COVID-19 correlates of protection study ongoing has been measuring T cells, only antibodies. (Dr. Crotty)