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COVID-19 Vaccines – FDA Advisors Discuss Vaccine Boosters at 2 Day Meeting

- On October 14 & 15, 2021, the Food and Drug Administration convened a Vaccine and Biologic Products Advisory Committee (VRBPAC) to discuss expanding the emergency use authorization (EUA) for Moderna's COVID-19 vaccine and Janssen's COVID-19 vaccine to include a booster dose. The Pfizer COVID-19 vaccine already has been granted EUA for a booster dose. The OptumRx Pipeline team attended the virtual VRBPAC meetings and below are some key take-aways from the events.

- **Moderna (October 14 Meeting)**

  - Moderna is seeking EUA of a 3rd dose of mRNA-1273 administered 6 months after the initial 2-dose series, in individuals ages 18 years and above.
  - To support the expanded indication, Moderna presented results of their booster trial for mRNA-1273, Study 201B, in which 171 individuals received two 100 mcg doses of mRNA-1273 followed by a 50 mcg booster dose 6 months after completing their primary vaccination series.
  - The study met one of the pre-specified endpoints of boosting antibody titers to levels similar to the primary series. The study did not meet a second pre-defined endpoint of seroresponse rates based on 4-fold rise in titers from pre-booster levels but did meet other endpoints.
  - The safety profile following the booster dose, was similar to the safety profile observed following the initial series.
  - After reviewing and discussing the data during the day-long meeting, the VRBPAC voted unanimously in favor of including boosters in the EUA for Moderna's COVID-19 vaccine, mRNA-1273. And the expanded indication matches the indication that was previously approved for Pfizer's COVID-19 vaccine.
  - **The final determination:** The available data support the safety and effectiveness of the Moderna COVID-19 vaccine for use under EUA as a booster dose (50 mcg mRNA-1273) at least 6 months after completion of a primary series in the following populations:
    - Individuals 65 years of age and older
    - Individuals 18 through 64 years of age at high risk of severe COVID-19, and
    - Individuals 18 through 64 years of age whose frequent institutional or occupational exposure to SARS-CoV-2 puts them at high risk of serious complications of COVID-19 including severe COVID-19.

- **Janssen (October 15 Meeting)**

  - Janssen is seeking EUA for a 2nd dose of Ad26.COV2.S for all individuals who received single-dose primary regimen. The 2nd dose may be given at least 2 months after primary regimen; data may suggest boosting at 6 months provides stronger immunologic response.
  - To support use of a 2nd dose, Janssen presented results of their booster trial, COV3009, in which about 4,000 participants received a 2nd dose 2 months after the first dose.
  - Vaccine effectiveness against moderate to severe COVID-19 was 75% (95% CI: 55, 87) 14 days after the 2nd dose.
  - In addition, spike binding antibody titers were presented from two studies, COV1001 and COV2001.
    - In 51 patients, there was a 4.6-fold increase in antibody titers after the boost dose given in 2 months vs. after the 1st dose.
    - In 17 patients, there was a 12-fold increase in antibody titers after the boost dose given at 6 months vs. after the 1st dose.
  - The safety profile following the booster dose, was similar to the safety profile observed following the initial series.

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- After reviewing and discussing the data during the meeting, the VRBPAC voted unanimously in favor of including boosters in the EUA for Janssen's COVID-19 vaccine, Ad26.COV2.S.
- **The final determination:** The available data support the safety and effectiveness of the Janssen's COVID-19 vaccine for use under EUA as a booster dose in individuals 18 years and older at least 2 months after a single dose primary vaccination.

- **Heterologous (Mix and Match) Booster Doses (October 15 Meeting)**

  - Results from the adaptive trial sponsored by the NIH, DMID 21-0012 - Heterologous Platform Boost Study were presented. Preliminary results have also been posted.
  - A total 458 individuals enrolled in the trial; all had received a primary series with one of the three available COVID-19 vaccines and then received one of the three vaccines as a booster dose. Although the data have not yet been peer-reviewed, the preliminary results indicate heterologous boosters increased antibody titers to immunogenic levels and were well tolerated.
  - The Committee discussed general observations regarding this data on heterologous boosters and what additional data would be needed to put an EUA in place. No vote was taken.
  - The FDA will take the comments from VRBPAC and determine how EUAs need expanded to allow for heterologous boosters.

- **What is next:**

  - Before booster doses of the COVID-19 vaccines can be implemented for the general population, the FDA must authorize the expanded use and the CDC's ACIP panel will review the evidence and issue recommendations as they have done throughout the COVID-19 pandemic.
  - The FDA has not yet revised the EUA but could issue an authorization in the next few days.
  - ACIP has announced meeting for October 21, 2021 to review COVID-19 vaccines. Although the agenda does not provide details, it is likely booster information will be reviewed, including a risk vs. benefit analysis.
  - The OptumRx Pipeline Team plans to attend this meeting and will provide an update after that meeting.