Emergency Use Instructions for Healthcare Providers:
Additional Doses of Updated COVID-19 Vaccine (2023-2024 Formula) by Pfizer-BioNTech

The Centers for Disease Control and Prevention (CDC) is issuing Emergency Use Instructions (EUI) to provide information about the use of the updated COVID-19 vaccine (2023-2024 Formula[1]), by Pfizer-BioNTech (Comirnaty[2]), which is approved (licensed) by the Food and Drug Administration (FDA) for the prevention of COVID-19 in individuals ages 12 years and older. The CDC-issued EUI provide information for the use of this vaccine that are beyond the FDA-approved labeling. The CDC-issued EUI provide information on the following uses of the updated COVID-19 vaccine by Pfizer-BioNTech for:

- Additional doses for people ages 12 years and older who are moderately or severely immunocompromised, which include the following:
    - A 3-dose initial series for people ages 12 years and older who are moderately or severely immunocompromised and previously unvaccinated or who need revaccination. People who need revaccination are those who are moderately or severely immunocompromised who received COVID-19 vaccine dose(s) during treatment with B-cell-depleting therapies over a limited period or who received COVID-19 vaccine dose(s) prior to or during treatment involving hematopoietic cell transplant or chimeric antigen receptor (CAR)-T-cell therapy.
    - People ages 12 years and older who are moderately or severely immunocompromised and have previously received 1 original monovalent or bivalent mRNA COVID-19 vaccine doses are recommended to receive 2 homologous (i.e., from the same manufacturer) updated mRNA vaccine doses to complete the 3-dose initial series.
    - People ages 12 years and older who are moderately or severely immunocompromised and have previously received original monovalent or bivalent mRNA COVID-19 vaccine doses are recommended to receive 1 homologous updated mRNA vaccine dose, at least 4 weeks after their last COVID-19 vaccine dose.
    - For persons initiating or completing the 3-dose initial series with the Pfizer-BioNTech COVID-19 vaccine, Dose 1 and Dose 2 are recommended with a 3-week interval; Dose 2 and Dose 3 are recommended with at least a 4-week interval.
    - People ages 12 years and older who are moderately or severely immunocompromised and are previously vaccinated may receive more than 1 dose of the updated COVID-19 vaccine by Moderna, Pfizer-BioNTech, or Novavax, informed by the clinical judgement of a healthcare provider and personal preference and circumstances.
- People ages 65 years and older should receive 1 additional dose of the updated COVID-19 vaccine by Moderna, Pfizer-BioNTech, or Novavax.

The EUI updated COVID-19 vaccine by Moderna also allow the same uses as an alternative updated mRNA COVID-19 vaccine to Pfizer-BioNTech, (see the Moderna EUI Fact Sheet for Healthcare Providers). The updated COVID-19 vaccine by Novavax, which is authorized under Emergency Use Authorization (EUA; see the Novavax EUA Fact Sheet) is also available. The same recommendations to the updated Pfizer-BioNTech COVID-19 vaccine are available for Novavax in the Interim Clinical Considerations.

Refer to CDC's Interim Clinical Considerations for specific recommendations on use of the updated COVID-19 vaccine by Pfizer-BioNTech allowed under the EUI. For additional information about the COVID-19 vaccine by Pfizer-BioNTech COVID-19, refer to the Comirnaty package insert.

[1] The updated COVID-19 vaccine (2023-2024 Formula) by Pfizer-BioNTech encodes the spike protein of SARS-CoV-2 Omicron variant lineage XBB.1.5 (Omicron XBB.1.5).

[2] Comirnaty is the proprietary name for the product licensed under the Biologics License Application (BLA). Because Comirnaty is commonly referred to as the "Pfizer COVID-19 vaccine" or the "Pfizer-BioNTech COVID-19 Vaccine," these EUI refer to this vaccine as the COVID-19 vaccine by Pfizer-BioNTech.

What are EUI and why is CDC issuing EUI for the updated COVID-19 vaccine by Pfizer-BioNTech?
In 2013, the Pandemic and All-Hazards Preparedness Reauthorization Act included a new provision that allowed for the issuance of EUI to permit CDC to inform healthcare providers and recipients about certain uses of FDA-approved or cleared medical products. Specifically, EUI inform healthcare providers and recipients about such products' approved, licensed, or cleared conditions of use by noting additional uses under the EUI. The CDC Director has statutory (legal) authority to create, issue, and disseminate EUI before or during an emergency.

The updated COVID-19 vaccine by Pfizer-BioNTech is approved by the FDA as a single dose for active immunization to prevent COVID-19 in persons ages 12 years and older to be administered at least 2 months after the last dose of COVID-19 vaccine. CDC is issuing these EUI to provide information about use of the updated COVID-19 vaccine by Pfizer-BioNTech for additional doses for people ages 12 years and older who are moderately or severely immunocompromised and for 1 additional dose for people ages 65 years and older, that extend beyond its FDA-approved labeling as described further under "Who can receive additional doses of the updated COVID-19 vaccine by Pfizer-BioNTech?", "What are the doses and intervals of the updated COVID-19 vaccine by Pfizer-BioNTech for people ages 12 years and older who are moderately or severely immunocompromised?", and "What are the doses and intervals of the updated COVID-19 vaccine by Pfizer-BioNTech for people ages 65 years and older?".

What is COVID-19?
Coronavirus disease 2019 (COVID-19) is an infectious disease caused by the novel coronavirus, SARS-CoV-2, that emerged in late 2019. It is predominantly a respiratory illness that can also affect other organs. People with SARS-CoV-2 infection have reported a wide range of symptoms, ranging from no symptoms to severe illness. Symptoms may appear 2 to 14 days after exposure to the virus. Symptoms may include fever or chills, cough, shortness of breath, fatigue, muscle or body aches, headache, new loss of taste or smell, sore throat, congestion or runny nose, nausea or vomiting, and diarrhea.

Who can receive additional doses of the updated COVID-19 vaccine by Pfizer-BioNTech?
The below describes who can receive the updated COVID-19 vaccine by Pfizer-BioNTech under these EUI. The COVID-19 vaccine by Moderna can also be used under EUI for the same uses as an alternative updated mRNA COVID-19 vaccine (see the Moderna EUI Fact Sheet for Healthcare Providers). In addition, the updated COVID-19 vaccine by Novavax is available for persons ages 12 years and older (see the Interim Clinical Considerations or Novavax EUA Fact Sheet).

- People ages 12 years and older who are moderately or severely immunocompromised
- Adults ages 65 and older who are ≥4 months from their last dose of updated COVID-19 vaccine should receive 1 additional dose

What are the doses and intervals of the updated COVID-19 vaccine by Pfizer-BioNTech for people ages 12 years and older who are moderately or severely immunocompromised?
- Additional doses for people ages 12 years and older who are moderately or severely immunocompromised, which include the following:
    - A 3-dose initial series for people ages 12 years and older who are moderately or severely immunocompromised and previously unvaccinated or who need revaccination. People who need revaccination are those who are moderately or severely immunocompromised who received COVID-19 vaccine dose(s) during treatment with B-cell-depleting therapies over a limited period or who received COVID-19 vaccine dose(s) prior to or during treatment involving hematopoietic cell transplant or chimeric antigen receptor (CAR)-T-cell therapy.
    - People ages 12 years and older who are moderately or severely immunocompromised and have previously received 1 original monovalent or bivalent mRNA COVID-19 vaccine doses are recommended to receive 2 homologous (i.e., from the same manufacturer) updated mRNA vaccine doses to complete the 3-dose initial series.

- People ages 12 years and older who are moderately or severely immunocompromised and have previously received original monovalent or bivalent mRNA COVID-19 vaccine doses are recommended to receive 1 homologous updated mRNA vaccine dose, at least 4 weeks after their last COVID-19 vaccine dose.
- For persons initiating or completing the 3-dose initial series with the Pfizer-BioNTech COVID-19 vaccine, Dose 1 and Dose 2 are recommended with a 3-week interval; Dose 2 and Dose 3 are recommended with at least a 4-week interval.
- People ages 12 years and older who are moderately or severely immunocompromised and are previously vaccinated may receive more than 1 dose of the updated COVID-19 vaccine by Moderna, Pfizer-BioNTech, or Novavax, informed by the clinical judgement of a healthcare provider and personal preference and circumstances.

What are the doses and intervals of the updated COVID-19 vaccine by Pfizer-BioNTech for people ages 65 years and older?

- People ages 65 years and older should receive 1 additional dose of the updated COVID-19 vaccine by Moderna, Pfizer-BioNTech, or Novavax, at least ≥ 4 months after the previous dose of updated COVID-19 vaccine.

Additional Information

Refer to CDC's Interim Clinical Considerations for specific information and the latest dosing recommendations (e.g., number of doses, dosing intervals, revaccination) that may vary for individuals with certain medical conditions and/or in certain circumstances, which differ from or extend beyond the FDA-authorized and/or FDA-approved labeling.

See Table 2 COVID-19 vaccination schedule for people ages 12 years and older who are moderately or severely immunocompromised and Table 1 COVID-19 vaccination schedule for people ages 65 years and older who are not moderately or severely immunocompromised in CDC's Interim Clinical Considerations for the latest dosing recommendations.

What are the formulations of the COVID-19 vaccine by Pfizer-BioNTech that these EUI apply to?

The EUI apply to the FDA-approved Updated COVID-19 vaccine (2023-2024 Formula) by Pfizer-BioNTech.

What are the common side effects with the COVID-19 vaccine by Pfizer-BioNTech?

Adverse reactions that have been reported following administration of Pfizer-BioNTech COVID-19 vaccines include pain at the injection site, fatigue, headache, chills, muscle pain, joint pain, fever, injection site swelling, and injection site redness.

What are possible serious side effects with the COVID-19 vaccine by Pfizer-BioNTech?

Severe allergic reactions, including anaphylaxis, and other hypersensitivity reactions (e.g., rash, pruritus, urticaria, angioedema), syncope, myocarditis and pericarditis have been reported following administration of Pfizer-BioNTech COVID-19 vaccines. There is a rare risk of myocarditis and pericarditis following receipt of mRNA COVID-19 vaccine, particularly for males ages 12-39 years. Anaphylaxis has been rarely observed following COVID-19 vaccines. Allergic reactions can rarely occur with any kind of vaccine or medical product.

Who should not receive the updated COVID-19 vaccine by Pfizer-BioNTech?

Do not administer the COVID-19 vaccine by Pfizer-BioNTech to persons with known history of a severe allergic reaction (e.g., anaphylaxis) to a previous dose or any component of the vaccine (see *Contraindications, and Warnings and Precautions* sections in the Comirnaty package insert as well as CDC's Interim Clinical Consideration for additional considerations).

What information should be provided to persons receiving additional doses of the updated COVID-19 vaccine by Pfizer-BioNTech as described in the EUI?

- Provide the EUI Fact Sheet for Recipients and Caregivers.

Risk-Benefit of the COVID-19 vaccine by Pfizer-BioNTech as Additional Vaccine Doses for Individuals Described in the EUI

People who are moderately or severely immunocompromised and previously unvaccinated or in need of revaccination would be less likely to have protection from infection-induced immunity and thus the data supporting a single dose for those with evidence of pre-existing infection-induced immunity would be less applicable to this population. Therefore, the following evidence supports continuing a 3-dose initial series to ensure the optimal immune response to protect this population at high risk of severe outcomes with COVID-19 and the need for additional updated COVID-19 vaccine doses in people who are moderately to severely immunocompromised and previously vaccinated. The original Pfizer-BioNTech and Moderna COVID-19 vaccine randomized controlled trials from 2020 measured efficacy of a 2-dose initial series (previously called the primary series) among people without evidence of prior SARS-CoV-2 infection. Effectiveness of an additional primary series dose of the COVID-19 vaccine is inferred from immunogenicity data in immunocompromised adults who received a single additional primary series dose. These data were used to support EUA amendments on August 12, 2021, for the Pfizer-BioNTech original monovalent vaccine and support the CDC recommendations to expand the primary series for persons who are moderately or severely immunocompromised to 3 doses for mRNA vaccines in August 2021. Persons who are moderately or severely immunocompromised may have reduced protection after COVID-19 vaccination, compared with persons without immunocompromise. Historically, COVID-19 vaccine effectiveness has been lower and waned more quickly for adults with immunocompromise compared to adults without immunocompromise.

Adults ages 65 years and older are at increased risk of severe illness due to COVID-19, with the highest rates of COVID-19-associated hospitalization, intensive care, mechanical ventilation, and death among all age groups. While COVID-19-associated hospitalization rates peak during the respiratory virus season, COVID-19 hospitalizations and deaths continue throughout the year due to ongoing SARS-CoV-2 transmission. For older adults who are at highest risk of severe COVID-19, an additional dose of 2023-2024 COVID-19 vaccine may provide additional protection against severe COVID-19.

For data regarding safety, please see sections in the Comirnaty package insert. Based on available information, it appears reasonable to anticipate that known and potential risks of additional doses of the COVID-19 vaccine by Pfizer-BioNTech may be outweighed by its likely benefit to enhance or restore protection, which might have waned over time, especially in people who are moderately or severely immunocompromised and those ages 65 years and older.

Refer to the CDC's Interim Clinical Considerations for additional information.

Available Alternatives

Currently, the Moderna COVID-19 vaccine and Pfizer-BioNTech COVID-19 vaccine are the only FDA-approved vaccines for which EUI provide for dose administration to people who are moderately or severely immunocompromised and to persons ages 65 years and older. The updated Novavax COVID-19 vaccine is available under EUA for individuals 12 years of age and older. (Novavax EUA Fact Sheet). See the Interim Clinical Considerations for recommendations regarding the use of Novavax COVID-19 vaccine for persons who are moderately or severely immunocompromised and for adults aged 65 years and older.

Reporting Adverse Event or Medication Errors

Healthcare providers are strongly encouraged to report of the following to the Vaccine Adverse Event Reporting System (VAERS):

- Any adverse event that occurs after the administration of a vaccine licensed in the United States, whether or not it is clear that a vaccine caused the adverse event
- Vaccine administration errors, whether or not associated with an adverse event

Complete and submit reports to VAERS online at https://vaers.hhs.gov/reportevent.html.
For further assistance with reporting to VAERS call 1-800-822-7967.

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