PLEASE READ THIS COVID-19 VACCINE NOTICE CAREFULLY BEFORE PURCHASING ANY COVID-19 VACCINES (DEFINED BELOW). THE COVID-19 VACCINES HAVE BEEN AUTHORIZED BY THE FDA UNDER AN EMERGENCY USE AUTHORIZATION (THE "EUA"). THE EUA AND THIS NOTICE CONTAIN VERY IMPORTANT INFORMATION ABOUT CUSTOMER'S OBLIGATIONS, INCLUDING WITH RESPECT TO THE CLINICAL ADMINISTRATION OF THE COVID-19 VACCINES.

Information Relating to the COVID-19 Vaccines and Conditions of Use

a. The Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) (the "COVID-19 Vaccine") has not been approved or licensed by FDA, but has been authorized for emergency use by the FDA, under an Emergency Use Authorization ("EUA") to prevent Coronavirus Disease 2019 (COVID-19) for use in individuals aged 6 months through 11 years of age. The emergency use of this COVID-19 Vaccine is only authorized for the duration of the declaration that circumstances exist justifying the authorization of emergency use of the medical product under Section 564(b)(1) of the FD&C Act unless the declaration is terminated or authorization revoked sooner.

b. There are requirements in the EUA that apply to Vaccination Providers.[1] Please review the EUA carefully to ensure that you understand and comply with the requirements that apply to you. See EUA (Exhibit A).

c. Please also review and distribute as required: (1) the Fact Sheet for Healthcare Providers Administering Vaccine: Emergency Use Authorization of Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula), For 6 Months Through 11 Years of Age(Exhibit B), and (2) Fact Sheet for Recipients and Caregivers About Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) Which Has Emergency Use Authorization (EUA) to Prevent Coronavirus Disease 2019 (COVID-19) in Individuals 6 Months Through 11 Years of Age (Exhibit C).

d. Please note that the COVID-19 Vaccines are removed from the ultra-cold frozen state upon shipment and will ship to you refrigerated (2-8°C). Please only refer to the Use by Date that has been affixed to the Covid-19 Vaccine product carton label and disregard any other expiration date information on the COVID-19 Vaccine product packaging. Upon delivery to you, the expiration date of the COVID-19 Vaccines will be less than 10 weeks. The COVID-19 Vaccines must be stored refrigerated, 2-8°C. Do not refreeze.

e. Pfizer has entered or will enter into a Data User Agreement ("DUA") with the United States Department of Health and Human Services ("HHS"), whereby Pfizer will voluntarily disclose data to HHS, including but not limited to the following data received from Henry Schein, Inc., with respect to sales of COVID-19 Vaccine products within the United States: (a) delivery addresses of each COVID-19 Vaccine product (provider site level data) for all direct sales; (b) delivery addresses of each COVID-19 Vaccine product for all data acquired through Henry Schein, Inc.; and (c) any additional data regarding COVID-19 Vaccine product placement. You hereby acknowledge and agree that Pfizer may disclose the aforementioned data , as it pertains to you, to HHS pursuant to the DUA.

[1] "Vaccination Provider" refers to the facility, organization, or healthcare provider (e.g., non-physician healthcare professionals, such as nurses, pharmacists) licensed or otherwise authorized to administer or provide vaccination services pursuant to State law. If the vaccine is exported from the United States, a "vaccination provider" is a provider that is authorized to administer this vaccine in accordance with the laws of the country in which it is administered. For purposes of this letter, "vaccination provider" also includes a person authorized by the U.S. Department of Health and Human Services (e.g., under the PREP Act Declaration for Medical Countermeasures against COVID-19) to administer FDA-authorized COVID-19 vaccine (e.g., qualified pharmacy technicians and State-authorized pharmacy interns acting under the supervision of a qualified pharmacist). See, e.g., HHS, *Eleventh Amendment to the Declaration Under the Public Readiness and Emergency Preparedness Act for Medical Countermeasures Against COVID-19 and Republication of the Declaration*. (88 FR 30769, May 12, 2023). In addition, for purposes of this letter, the term "State" includes any State or Territory of the United States, the District of Columbia, and the Commonwealth of Puerto Rico. See Section 201(a)(1) of the Act.

EXHIBIT A

Emergency Use Authorization

(Starts on Following Page)

August 22, 2024

Pfizer, Inc.
Attention: Evgenia Statskaya
66 Hudson Boulevard East
New Yor, NY 10001

Dear Ms. Statskaya:

On February 4, 2020, as amended on March 15, 2023, pursuant to Section 564(b)(1)(C) of the Federal Food, Drug, and Cosmetic Act (the FD&C Act or the Act), the Secretary of the Department of Health and Human Services (HHS) determined that there is a public health emergency, or a significant potential for a public health emergency, that affects, or has a significant potential to affect national security or the health and security of United States citizens living abroad, and that involves the virus that causes Coronavirus Disease 2019 (COVID-19).[1] On the basis of such determination, the Secretary of HHS on March 27, 2020, declared that circumstances exist justifying the authorization of emergency use of drugs and biological products during the COVID-19 pandemic, pursuant to Section 564 of the Act (21 U.S.C. 360bbb-3), subject to the terms of any authorization issued under that section.[2]

On December 11, 2020, the Food and Drug Administration (FDA) issued an Emergency Use Authorization (EUA) for emergency use of Pfizer-BioNTech COVID-19 Vaccine (Original monovalent)[3] for the prevention of COVID-19 for individuals 16 years of age and older pursuant to Section 564 of the Act. FDA reissued the letter of authorization on: December 23, 2020,[4]

[1] U.S. Department of Health and Human Services, Determination of a Public Health Emergency and Declaration that Circumstances Exist Justifying Authorizations Pursuant to Section 564(b) of the FD&C Act, 21 U.S.C. § 360bbb-3, February 4, 2020. U.S. Department of Health and Human Services, *Amended Determination of a Public Health Emergency or Significant Potential for a Public Health Emergency Pursuant to Section 564(b) of the Federal Food, Drug, and Cosmetic Act, 21 U.S.C. § 360bbb-3(b)*. March 15, 2023. 88 FR 16644 (March 20, 2023) ("Amended Determination").

[2] U.S. Department of Health and Human Services, *Declaration that Circumstances Exist Justifying Authorizations Pursuant to Section 564(b) of the Federal Food, Drug, and Cosmetic Act, 21 U.S.C. § 360bbb-3*, 85 FR 18250 (April 1, 2020). See Amended Determination ("The declarations issued pursuant to section 564(b)(1) of the FD&C Act that circumstances exist justifying the authorization of emergency use of certain in vitro diagnostics, personal respiratory protective devices, other medical devices and drugs and biological products, as set forth in those declarations, and that are based on the February 4, 2020 determination, remain in effect until those declarations are terminated in accordance with section 564 of the FD&C Act.").

[3] For purposes of this letter, Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) refers to the vaccine that encodes the spike protein of only the Original SARS-CoV-2.

[4] In the December 23, 2020 revision, FDA removed reference to the number of doses per vial after dilution from the letter of authorization, clarified the instructions for vaccination providers reporting to VAERS, and made other technical corrections. FDA also revised the Fact Sheet for Healthcare Providers Administering Vaccine (Vaccination Providers) to clarify the number of doses of vaccine per vial after dilution and the instructions for reporting to VAERS. In addition, the Fact Sheet for Healthcare Providers Administering Vaccine (Vaccination Providers) and the Fact Sheet for Recipients and Caregivers were revised to include additional information on safety monitoring and to clarify information about the availability of other COVID-19 vaccines.

February 25, 2021,[5] May 10, 2021,[6] June 25, 2021,[7] and August 12, 2021.[8] On August 23, 2021, FDA approved COMIRNATY (COVID-19 Vaccine, mRNA)[9] and reissued the letter in its entirety for both Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) and certain uses of COMIRNATY (COVID-19 Vaccine, mRNA).[10]

[5] In the February 25, 2021 revision, FDA allowed flexibility on the date of submission of monthly periodic safety reports and revised the requirements for reporting of vaccine administration errors by Pfizer Inc. The Fact Sheet for Health Care Providers Administering Vaccine (Vaccination Providers) was revised to provide an update to the storage and transportation temperature for frozen vials, direct the provider to the correct CDC website for information on monitoring vaccine recipients for the occurrence of immediate adverse reactions, to include data from a developmental toxicity study, and add adverse reactions that have been identified during post authorization use. The Fact Sheet for Recipients and Caregivers was revised to add adverse reactions that have been identified during post authorization use.

[6] In the May 10, 2021 revision, FDA authorized Pfizer-BioNTech Vaccine (Original monovalent) for the prevention of COVID-19 in individuals 12 through 15 years of age, as well as for individuals 16 years of age and older. In addition, FDA revised the Fact Sheet for Healthcare Providers Administering Vaccine (Vaccination Providers) to include the following Warning: "Syncope (fainting) may occur in association with administration of injectable vaccines, in particular in adolescents. Procedures should be in place to avoid injury from fainting." In addition, the Fact Sheet for Recipients and Caregivers was revised to instruct vaccine recipients or their caregivers to tell the vaccination provider about fainting in association with a previous injection.

[7] In the June 25, 2021 revision, FDA clarified terms and conditions that relate to export of Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) from the United States. In addition, the Fact Sheet for Healthcare Providers Administering Vaccine (Vaccination Providers) was revised to include a Warning about myocarditis and pericarditis following administration of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent). The Fact Sheet for Recipients and Caregivers was updated to include information about myocarditis and pericarditis following administration of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent).

[8] In the August 12, 2021 revision, FDA authorized a third dose of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) administered at least 28 days following the two dose series of this vaccine in individuals 12 years of age or older who have undergone solid organ transplantation, or individuals 12 years of age or older who are diagnosed with conditions that are considered to have an equivalent level of immunocompromise.

[9] COMIRNATY (COVID-19 Vaccine, mRNA) was approved for active immunization to prevent COVID-19 caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in individuals 16 years of age and older.

[10] In the August 23, 2021 revision, FDA clarified that, subsequent to the FDA approval of COMIRNATY (COVID-19 Vaccine, mRNA) for the prevention of COVID-19 for individuals 16 years of age and older, this EUA would remain in place for the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) for the previously-authorized indication and uses. It also authorized COMIRNATY (COVID-19 Vaccine, mRNA) under this EUA for certain uses that are not included in the approved biologics license application (BLA). In addition, the Fact Sheet for Healthcare Providers Administering Vaccine (Vaccination Providers) was revised to provide updates on expiration dating of the authorized Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) and updated language regarding warnings and precautions related to myocarditis and pericarditis. The Fact Sheet for Recipients and Caregivers was updated as the Vaccine Information Fact Sheet for Recipients and Caregivers, which comprises the Fact Sheet for the authorized Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) and information about the FDA-licensed vaccine, COMIRNATY (COVID-19 Vaccine, mRNA).

Subsequently, FDA reissued the letter of authorization on September 22, 2021,[11] October 20, 2021,[12] October 29, 2021,[13] November 19, 2021,[14] December 9, 2021,[15] December 16, 2021,[16]

[11] In the September 22, 2021 revision, FDA authorized the administration of a single booster dose of COMIRNATY (COVID-19 Vaccine, mRNA) or Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) at least 6 months after completing the primary series of this vaccine in individuals: 65 years of age and older; 18 through 64 years of age at high risk of severe COVID-19; and 18 through 64 years of age whose frequent institutional or occupational exposure to SARS-CoV-2 put them at high risk of serious complications of COVID-19 including severe COVID-19.

[12] In the October 20, 2021 revision, FDA clarified eligibility for the booster dose of COMIRNATY (COVID-19 Vaccine, mRNA) or Pfizer-BioNTech COVID-19 Vaccine and authorized the administration of a single booster dose of Pfizer-BioNTech COVID-19 Vaccine or COMIRNATY (COVID-19 Vaccine, mRNA) was a heterologous booster dose following completion of primary vaccination with another authorized COVID-19 vaccine. The eligible population(s) and dosing interval for the heterologous booster dose were the same as those authorized for a booster dose of the vaccine used for primary vaccination.

[13] In the October 29, 2021 revision, FDA authorized: 1) the use of Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) for children 5 through 11 years of age; and 2) a manufacturing change to include an additional formulation of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) that uses tromethamine (Tris) buffer instead of phosphate buffered saline (PBS) used in the originally authorized Pfizer-BioNTech COVID-19 Vaccine (Original monovalent). The formulation of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) that uses Tris buffer was authorized in two presentations: 1) multiple dose vials, with gray caps and labels with a gray border, formulated to provide, without need for dilution, doses (each 0.3 mL dose containing 30 microgram (mcg) nucleoside-modified messenger RNA (modRNA)) for individuals 12 years of age and older; and 2) multiple dose vials, with orange caps and labels with an orange border, formulated to provide, after dilution, doses (each 0.2 mL dose containing 10 mcg modRNA) for individuals 5 through 11 years of age. The formulation that uses Tris buffer is the only formulation that is authorized for use in individuals 5 through 11 years of age.

[14] In the November 19, 2021 revision, FDA authorized the use of COMIRNATY (COVID-19 Vaccine, mRNA) and the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) as a single booster dose in individuals 18 years of age or older at least 6 months after completing the primary series of this vaccine (i.e., as a homologous booster dose), and as a single booster dose following completion of primary vaccination with another authorized COVID-19 vaccine (i.e., as a heterologous booster dose) in individuals 18 years of age or older. The dosing interval for the heterologous booster dose was authorized to be the same as that authorized for a booster dose of the vaccine used for primary vaccination.

[15] In the December 9, 2021 revision, FDA authorized the use of the vaccine as a single booster dose in individuals 16 and 17 years of age, at least 6 months after completing the primary series of this vaccine (i.e., as a homologous booster dose).

[16] On December 16, 2021, FDA approved a supplement to the COMIRNATY (COVID-19 Vaccine, mRNA) BLA to include a new 30 mcg dose formulation of COMIRNATY (COVID-19 Vaccine, mRNA) that uses Tris buffer instead of the PBS buffer used in the originally approved vaccine. At that time the EUA was revised to clarify that the Pfizer-BioNTech COVID-19 Vaccine that uses Tris buffer and COMIRNATY (COVID-19 Vaccine, mRNA) that uses the Tris buffer have the same formulation and could be used interchangeably. In addition, FDA extended the expiration date of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) that uses the Tris buffer from 6 months to 9 months when held at -90 °C to -60 °C. FDA also updated the fact sheets to reflect these revisions.

January 3, 2022,[17] March 29, 2022,[18] May 17, 2022,[19] and on June 17, 2022.[20]

On July 8, 2022, FDA approved a supplement submitted by BioNTech Manufacturing GmbH to the biologics license application (BLA) for COMIRNATY (COVID-19 Vaccine, mRNA),[21] and reissued the letter of authorization in its entirety for both Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) and certain uses of COMIRNATY (COVID-19 Vaccine, mRNA).[22] Subsequently, FDA reissued the letter of authorization on August 31, 2022.[23] The August 31, 2022 reissuance provided for certain emergency uses of the Pfizer-BioNTech COVID-19

[17] In the January 3, 2022 revision, FDA: (i) authorized the use of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) as a single booster dose in individuals 12 through 15 years of age; (ii) lowered the authorized dosing interval of the homologous booster dose to at least five (5) months after completion of the primary series; and (iii) authorized a third primary series dose of the vaccine administered at least 28 days following the two dose series of this vaccine in individuals 5 through 11 years of age who have undergone solid organ transplantation, or 5 through 11 years of age who are diagnosed with conditions that are considered to have an equivalent level of immunocompromise. In addition, FDA revised the Fact Sheets for Healthcare Providers Administering Vaccine (Vaccination Providers) and the Fact Sheet for Recipients and Caregivers to reflect these revisions.

[18] In the March 29, 2022 revision, FDA authorized a second booster dose of COMIRNATY (COVID-19 Vaccine, mRNA) or the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) at least 4 months after receipt of a first booster dose of any FDA-authorized or approved COVID-19 vaccine to: 1) individuals 50 years of age and older; and 2) individuals 12 years of age or older who have undergone solid organ transplantation, or individuals 12 years of age or older who have been diagnosed with conditions that are considered to have an equivalent level of immunocompromise.

[19] In the May 17, 2022 revision, FDA authorized the administration of a single booster dose of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) in individuals 5 through 11 years of age, at least 5 months after completing a primary series with this vaccine.

[20] In the June 17, 2022 revision, FDA authorized the administration of Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) as a 3-dose primary series for the prevention of COVID-19 in individuals 6 months through 4 years of age; and an additional presentation of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) in multiple dose vials with maroon caps and labels with maroon borders (each 0.2 mL dose containing 3 mcg mRNA) for use in individuals 6 months through 4 years of age.

[21] FDA approved COMIRNATY (COVID-19 Vaccine, mRNA) for active immunization to prevent COVID-19 caused by SARS-CoV-2 in adolescents 12 through 15 years of age.

[22] In the July 8, 2022 authorization, FDA clarified that the EUA would remain in place for the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) for the previously authorized uses, and authorized use of COMIRNATY (COVID-19 Vaccine, mRNA) under this EUA for certain uses that are not included in the approved BLA. In addition, the Vaccine Information Fact Sheet for Recipients and Caregivers: For 12 Years of Age and Older and the Fact Sheets for Healthcare Providers Administering Vaccine (Vaccination Providers): For 12 Years of Age and Older were updated to reflect this.

[23] In the August 31, 2022 revision, FDA authorized the Pfizer-BioNTech Vaccine, Bivalent (Original and Omicron BA.4/BA.5) in single dose vials and multiple dose vials with gray caps and labels with gray borders (each 0.3 mL dose containing a total of 30 mcg modRNA) for the prevention of COVID-19 in individuals 12 years of age and older as a single booster dose administered at least 2 months after either: 1) completion of primary vaccination with any FDA authorized or approved monovalent COVID-19 vaccine, or 2) receipt of the most recent booster dose with any FDA authorized or approved monovalent COVID-19 vaccine. FDA also revised the scope of authorization for COMIRNATY (COVID-19 Vaccine, mRNA) and Pfizer BioNTech COVID-19 Vaccine (Original monovalent) to remove their use as a booster dose for individuals 12 years of age and older. Finally, FDA revised the Fact Sheets for Pfizer-BioNTech COVID-19 Vaccine (Original monovalent), as applicable, to reflect these changes and to reflect updates to the Conditions of Authorization regarding VAERS reporting.

Vaccine, Bivalent (Original and Omicron BA.4/BA.5)[24] after either completion of primary vaccination with any FDA approved or authorized monovalent COVID-19 vaccine[25] or receipt of the most recent booster dose with any FDA authorized or approved monovalent COVID-19 vaccine. Subsequently, FDA reissued the letter of authorization on October 12, 2022,[26] December 8, 2022,[27]

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[24] Hereinafter, this letter refers to this vaccine as the "Pfizer-BioNTech COVID-19 Vaccine, Bivalent."

[25] For purposes of this letter, monovalent COVID-19 vaccine refers to any COVID-19 vaccine that contains or encodes the spike protein of only the Original SARS-CoV-2. We note that the Pfizer-BioNTech COVID-19 Vaccine (2023-2024 Formula) is also monovalent, and encodes the spike protein of SARS-CoV-2 Omicron variant lineage XBB 1.5.

[26] In the October 12, 2022 revision, FDA authorized the Pfizer-BioNTech COVID-19 Vaccine, Bivalent in multiple dose vials with orange caps and labels with orange borders (each 0.2 mL dose containing a total of 10 mcg modRNA) for the prevention of COVID-19 in individuals 5 through 11 years of age as a single booster dose administered at least 2 months after either: 1) completion of primary vaccination with any FDA authorized or approved monovalent COVID-19 vaccine, or 2) receipt of the most recent booster dose with any FDA authorized or approved monovalent COVID-19 vaccine. FDA also revised the scope of authorization for Pfizer BioNTech COVID-19 Vaccine (Original monovalent) to remove its use as a booster dose for individuals 5 through 11 years of age. Finally, FDA revised the following Fact Sheets to reflect these changes: 1) Fact Sheet for Recipients and Caregivers About the Pfizer-BioNTech COVID-19 Vaccine and the Pfizer-BioNTech COVID-19 Vaccine Bivalent (Original and Omicron BA.4/BA.5) to Prevent Coronavirus Disease (COVID-19) for Use in Individuals 5 Through 11 Years of Age; 2) Fact Sheet for Healthcare Providers Administering Vaccine (Vaccination Providers): Emergency Use Authorization (EUA) of Pfizer-BioNTech COVID-19 Vaccine to Prevent Coronavirus Disease 2019 (COVID-19) Primary Series For 5 Through 11 Years of Age Dilute Before Use; and 3) Fact Sheet for Healthcare Providers Administering Vaccine (Vaccination Providers): Emergency Use Authorization (EUA) Pfizer-BioNTech COVID-19 Vaccine, Bivalent (Original and Omicron BA.4/BA.5) Booster Dose for 12 Years of Age and Older.

[27] On December 8, 2022, FDA revised the third dose in the 3-dose primary series authorized for individuals 6 months through 4 years of age. Specifically, the Pfizer-BioNTech COVID-19 Vaccine, Bivalent supplied in multiple dose vials with maroon caps and labels with maroon borders (each 0.2 mL dose containing a total of 3 mcg of modRNA) was authorized for the prevention of COVID-19 in individuals 6 months through 4 years of age as the third dose in the 3-dose primary series dose administered at least 8 weeks after a second primary series dose of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent). FDA also revised the scope of the authorization for Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) supplied in multiple dose vials with maroon caps and labels with maroon borders, to remove its use as the third primary series dose in the 3-dose primary series authorized for individuals 6 months through 4 years of age. Thus, Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) and Pfizer-BioNTech COVID-19 Vaccine, Bivalent (each in multiple dose vials with maroon caps and labels with maroon borders) were authorized for use in individuals 6 months through 4 years of age to provide a 3-dose primary series as follows: Dose 1: Pfizer-BioNTech COVID-19 Vaccine (Original monovalent); Dose 2: Pfizer-BioNTech COVID-19 Vaccine (Original monovalent); Dose 3: Pfizer-BioNTech COVID-19 Vaccine, Bivalent. In addition, because the authorized primary series for individuals 6 months through 4 years of age no longer consists of only Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) doses, FDA revised the scope of authorization for the Pfizer-BioNTech COVID-19 Vaccine, Bivalent for use in individuals 5 through 11 years of age and individuals 12 years of age and older so that the Pfizer-BioNTech COVID-19 Vaccine, Bivalent can be administered as a booster dose regardless of whether primary vaccination was completed with a monovalent COVID-19 vaccine. Specifically, FDA authorized the Pfizer-BioNTech COVID-19 Vaccine, Bivalent supplied in multiple dose vials with orange caps and labels with orange borders for use in individuals 5 through 11 years of age (each 0.2 mL dose containing 10 mcg modRNA) and the Pfizer-BioNTech COVID-19 Vaccine, Bivalent supplied in multiple dose and single dose vials with gray caps and labels with gray borders for use in individuals 12 years of age and older (each 0.3 mL dose containing 30 mcg modRNA) as a single booster dose administered at least 2 months after either: 1) completion of primary vaccination with any FDA authorized or approved COVID-19 vaccine, or 2) receipt of the most recent booster dose with any FDA authorized or approved monovalent COVID-19 vaccine. FDA also revised the applicable Fact Sheets to reflect these changes. FDA also authorized an extension of expiration dating for the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) formulated in Tris/Sucrose buffer that provide 30-, 10-, and 3-mcg mRNA per dose from 12 months to 18 months from the date of manufacture when stored at -90 to -60 °C. This extension is also applicable to the Pfizer-BioNTech COVID-19 Vaccine, Bivalent presentations that provide 30- and 10-mcg mRNA per dose. The Fact Sheets for Healthcare Providers Administering Vaccine (Vaccination Providers) were updated to reflect these changes.

March 14, 2023,[28] April 18, 2023,[29] and April 28, 2023.[30]

On September 11, 2023, FDA approved COMIRNATY (COVID-19 Vaccine, mRNA), (2023-2024 Formula)[31] for active immunization to prevent COVID-19 caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in individuals 12 years of age and older and also reissued this letter in its entirety.[32]

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[28] In the March 14, 2023 revision, FDA authorized Pfizer-BioNTech COVID-19 Vaccine, Bivalent supplied in multiple dose vials with maroon caps and labels with maroon borders (each 0.2 mL dose containing a total of 3 mcg of modRNA) for use in individuals 6 months through 4 years of age to provide a single booster dose at least 2 months after completion of primary vaccination with 3 doses of the Pfizer-BioNTech COVID-19 Vaccine. FDA also revised the applicable Fact Sheets for Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) and Pfizer-BioNTech COVID-19 Vaccine, Bivalent, to reflect these changes.

[29] In the April 18, 2023 revision, FDA: 1) revised the dosing regimen and schedule of the Pfizer-BioNTech COVID-19 Vaccine, Bivalent, as described in Section II of the April 18, 2023 reissuance of this letter; 2) no longer authorized the use of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) and certain uses of COMIRNATY (COVID-19 Vaccine; mRNA) in the United States; 3) clarified the terms and conditions that relate to export of Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) from the United States; and 4) revised Condition G to require the inclusion of distribution data for Pfizer-BioNTech COVID-19 Vaccine, Bivalent in the monthly periodic safety reports. FDA also revised the applicable Fact Sheets for Pfizer-BioNTech COVID-19 Vaccine, Bivalent, to reflect these changes. In addition, the Fact Sheets for Healthcare Providers Administering Vaccine (Vaccination Providers) were consolidated into a single Fact Sheet for Healthcare Providers Administering Vaccine for all authorized presentations of Pfizer-BioNTech COVID-19 Vaccine, Bivalent; and the Fact Sheets for Recipient and Caregivers were consolidated into a single Fact Sheet for Recipients and Caregivers for all authorized presentations of Pfizer-BioNTech COVID-19 Vaccine, Bivalent.

[30] In the April 28, 2023 revision, FDA authorized the following uses of the Pfizer-BioNTech COVID-19 Vaccine, Bivalent with maroon caps and labels with maroon borders (each 0.2 mL dose containing 3 mcg of modRNA) for individuals 6 months through 4 years of age with certain kinds of immunocompromise who previously received three 0.2 mL doses (Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) or Pfizer-BioNTech COVID-19 Vaccine, Bivalent): (1) a fourth dose administered at least 1 month following the most recent dose; and (2) additional doses that may be administered at the discretion of the healthcare provider, taking into consideration the individual's clinical circumstances. FDA also revised the Fact Sheets for Pfizer-BioNTech COVID-19 Vaccine, Bivalent, to reflect these changes.

[31] COMIRNATY (COVID-19 Vaccine, mRNA) (2023-2024 Formula) encodes the spike protein of SARS-CoV-2 Omicron variant lineage XBB.1.5 (Omicron XBB.1.5).

[32] In the September 11, 2023 revision, FDA: 1) authorized Pfizer-BioNTech COVID-19 Vaccine (2023-2024 Formula) in multiple dose vials with yellow caps and labels with yellow borders (each 0.3mL dose containing 3 mcg of modRNA) for use in individuals 6 months through 4 years of age as described in Section II of the September 11, 2023 reissuance of this letter; 2) authorized Pfizer-BioNTech COVID-19 Vaccine (2023-2024 Formula) in single dose vials with blue caps and labels with blue borders (each 0.3 mL dose containing 10 mcg of modRNA) for use in individuals 5 through 11 years as described in Section II of the September 11, 2023 reissuance of this letter; 3) revised the conditions related to printed matter, advertising, and promotion to add additional requirements; 4) removed the requirement that distribution of vaccines authorized under this EUA must be distributed to emergency response stakeholders as directed by the U.S. Government and made corresponding changes to the Conditions of Authorization; 5) removed the requirement that vaccines authorized under this EUA be administered only by vaccination providers enrolled in the CDC COVID-19 Vaccination Program and made corresponding changes to the Conditions of Authorization; 6) revised Condition G to provide flexibility to determine a different reporting interval for periodic safety reports, if appropriate; 7) removed authorization for the use of the Pfizer-BioNTech COVID-19 Vaccine, Bivalent in the United States; and 8) clarified the terms and conditions that relate to export of Pfizer-BioNTech COVID-19 Vaccine, Bivalent from the United States. FDA also authorized the applicable Fact Sheets for Pfizer-BioNTech COVID-19 Vaccine (2023-2024 Formula) that reflected the relevant changes.

On August 22, 2024, FDA approved COMIRNATY (COVID-19 Vaccine, mRNA) (2024-2025 Formula)[33] for active immunization to prevent COVID-19 caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in individuals 12 years of age and older.

On August 22, 2024, having concluded that revising this EUA is appropriate to protect the public health or safety under Section 564(g)(2) of the Act, FDA is reissuing the September 11, 2023 letter of authorization in its entirety with revisions to:

A. Authorize Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula)[34] in multiple dose vials with yellow caps and labels with yellow borders (each 0.3 mL dose containing 3 mcg of modRNA) for use in individuals 6 months through 4 years of age as described in Section II;
B. Authorize Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) in single dose vials with blue caps and labels with blue borders (each 0.3 mL dose containing 10 mcg of modRNA) for use in individuals 5 through 11 years as described in Section II;
C. Authorize COMIRNATY (COVID-19 Vaccine, mRNA) (2024-2025 Formula) for certain uses in certain immunocompromised individuals turning from 11 to 12 years of age during the vaccination series as described in Section II;
D. No longer authorize Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) for export from the United States;
E. No longer authorize Pfizer-BioNTech COVID-19 Vaccine, Bivalent for export from the United States;
F. No longer authorize the use of the Pfizer-BioNTech COVID-19 Vaccine (2023-2024 Formula) in the United States; and
G. Clarify the terms and conditions that relate to export of Pfizer-BioNTech COVID-19 Vaccine (2023-2024 Formula) from the United States.

Additionally, FDA is authorizing the Fact Sheets for Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) that reflect the relevant changes.

For the December 11, 2020 authorization for individuals 16 years of age and older, FDA reviewed safety and effectiveness data from an ongoing Phase 1/2/3 trial in approximately 44,000 participants randomized 1:1 to receive Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) or saline control. The trial enrolled participants 12 years of age and older. FDA's review at that time considered the safety and effectiveness data as they related to the request for emergency use authorization in individuals 16 years of age and older. FDA's review of the available safety data from 37,586 of the participants 16 years of age and older, who were followed for a median of two months after receiving the second dose, did not identify specific safety concerns that would preclude issuance of an EUA. FDA's analysis of the available efficacy data from 36,523 participants 12 years of age and older without evidence of SARS-CoV-2 infection prior to 7 days after dose 2 confirmed that the vaccine was 95% effective (95% credible interval 90.3, 97.6) in preventing COVID-19 occurring at least 7 days after the second dose (with 8 COVID-19 cases in the vaccine group compared to 162 COVID-19 cases in the

[33] COMIRNATY (COVID-19 Vaccine, mRNA) (2024-2025 Formula) encodes the spike protein of SARS-CoV-2 Omicron variant lineage KP.2.

[34] Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) encodes the spike protein of SARS-CoV-2 Omicron variant lineage KP.2.

placebo group). Based on these data, and review of manufacturing information regarding product quality and consistency, FDA concluded that it is reasonable to believe that Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) may be effective. Additionally, FDA determined it is reasonable to conclude, based on the totality of the scientific evidence available, that the known and potential benefits of Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) outweigh the known and potential risks of the vaccine, for the prevention of COVID-19 in individuals 16 years of age and older. Finally, on December 10, 2020, the Vaccines and Related Biological Products Advisory Committee voted in agreement with this conclusion.

For the May 10, 2021 authorization for individuals 12 through 15 years of age, FDA reviewed safety and effectiveness data from the above-referenced, ongoing Phase 1/2/3 trial that enrolled approximately 46,000 participants, including 2,260 participants 12 through 15 years of age. Trial participants were randomized 1:1 to receive Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) or saline control. FDA's review of the available safety data from 2,260 participants 12 through 15 years of age, who were followed for a median of 2 months after receiving the second dose, did not identify specific safety concerns that would preclude issuance of an EUA. FDA's analysis of SARS-CoV-2 50% neutralizing antibody titers 1 month after the second dose of Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) in a subset of participants who had no serological or virological evidence of past SARS-CoV-2 infection confirm that the geometric mean antibody titer in participants 12 through 15 years of age was non-inferior to the geometric mean antibody titer in participants 16 through 25 years of age. FDA's analysis of available descriptive efficacy data from 1,983 participants 12 through 15 years of age without evidence of SARS-CoV-2 infection prior to 7 days after dose 2 confirm that the vaccine was 100% effective (95% confidence interval 75.3, 100.0) in preventing COVID-19 occurring at least 7 days after the second dose (with no COVID-19 cases in the vaccine group compared to 16 COVID-19 cases in the placebo group). Based on these data, FDA concluded that it is reasonable to believe that Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) may be effective in individuals 12 through 15 years of age. Additionally, FDA determined it is reasonable to conclude, based on the totality of the scientific evidence available, that the known and potential benefits of Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) outweigh the known and potential risks of the vaccine, for the prevention of COVID-19 in individuals 12 through 15 years of age.

For the August 12, 2021 authorization of a third primary series dose in individuals 12 years of age or older who have undergone solid organ transplantation, or individuals 12 years of age or older who are diagnosed with conditions that are considered to have an equivalent level of immunocompromise, FDA reviewed safety and effectiveness data reported in two manuscripts on solid organ transplant recipients. The first study was a single arm study conducted in 101 individuals who had undergone various solid organ transplant procedures (heart, kidney, liver, lung, pancreas) a median of 97±8 months earlier. A third dose of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) was administered to 99 of these individuals approximately 2 months after they had received a second dose. Levels of total SARS-CoV-2 binding antibodies meeting the pre-specified criteria for success occurred four weeks after the third dose in 26/59 (44.0%) of those who were initially considered to be seronegative and received a third dose of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent); 67/99 (68%) of the entire

group receiving a third vaccination were subsequently considered to have levels of antibodies indicative of a significant response. In those who received a third vaccine dose, the adverse event profile was similar to that after the second dose and no grade 3 or grade 4 events were reported. A supportive secondary study was a double-blind, randomized-controlled study conducted in 120 individuals who had undergone various solid organ transplant procedures (heart, kidney, kidney-pancreas, liver, lung, pancreas) a median of 3.57 years earlier (range 1.99-6.75 years). A third dose of a similar messenger RNA vaccine (the Moderna COVID-19 vaccine) was administered to 60 individuals approximately 2 months after they had received a second dose (i.e., doses at 0, 1 and 3 months); saline placebo was given to 60 individuals for comparison. The primary outcome was anti-RBD antibody at 4 months greater than 100 U/mL. This titer was selected based on NHP challenge studies as well as a large clinical cohort study to indicate this antibody titer was protective. Secondary outcomes were based on a virus neutralization assay and polyfunctional T cell responses. Baseline characteristics were comparable between the two study arms as were pre-intervention anti-RBD titer and neutralizing antibodies. Levels of total SARS-CoV-2 binding antibodies indicative of a significant response occurred four weeks after the third dose in 33/60 (55.0%) of the Moderna COVID-19 vaccinated group and 10/57 (17.5%) of the placebo individuals. In the 60 individuals who received a third vaccine dose, the adverse event profile was similar to that after the second dose and no grade 3 or grade 4 adverse events were reported. Despite the moderate enhancement in antibody titers, the totality of data (i.e., supportive paper by Hall et al. demonstrated efficacy of the product in the elderly and persons with co-morbidities) supports the conclusion that a third dose of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) may be effective in this population, and that the known and potential benefits of a third dose of Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) outweigh the known and potential risks of the vaccine for immunocompromised individuals at least 12 years of age who have received two doses of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) and who have undergone solid organ transplantation, or who are diagnosed with conditions that are considered to have an equivalent level of immunocompromise.

For the September 22, 2021 authorization of a single booster dose administered at least 6 months after completing the primary series in individuals: 65 years of age and older; 18 through 64 years of age at high risk of severe COVID-19; and 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, FDA reviewed safety and effectiveness data from the above-referenced, ongoing Phase 1/2/3 trial in which 329 participants 18 through 75 years of age received a booster dose of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) approximately 6 months (range 4.8 to 8.8 months) after completion of the primary series. FDA's review of the available safety data from 329 participants 18 through 75 years of age, who had been followed for a median of 2.6 months after receiving the booster dose, did not identify specific safety concerns that would preclude issuance of an EUA. The effectiveness of the booster dose of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) is based on an assessment of 50% neutralizing antibody titers (NT50) against SARS-CoV-2 (USA_WA1/2020). FDA's analysis of SARS-CoV-2 NT50 one month after the booster dose compared to 1 month after the primary series in study participants 18 through 55 years of age who had no serological or virological evidence of past SARS-CoV-2 infection up to 1 month after the booster dose confirmed noninferiority for both geometric mean ratio and

difference in seroresponse rates. Based on the totality of the scientific evidence available, including data from the above-referenced clinical trial, FDA concluded that a booster dose of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) may be effective, and that the known and potential benefits of a single booster dose at least 6 months after completing the primary series outweigh the known and potential risks for 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.

For the October 20, 2021 authorization of a single booster dose as a heterologous booster dose following completion of primary vaccination with another authorized COVID-19 vaccine, FDA reviewed data from an ongoing Phase1/2 clinical trial in participants 19-85 years of age. In this trial, adults who had completed primary vaccination with a Moderna COVID-19 Vaccine 2-dose series (N=151), a Janssen COVID-19 Vaccine single dose (N=156), or a Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) 2-dose series (N=151) at least 12 weeks prior to enrollment and who reported no history of SARS-CoV-2 infection were randomized 1:1:1 to receive a booster dose of one of three vaccines: Moderna COVID-19 Vaccine (Original monovalent), Janssen COVID-19 Vaccine, or Pfizer-BioNTech COVID-19 Vaccine (Original monovalent). Adverse events were assessed through 28 days after the booster dose. An overall review of adverse reactions reported following the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) heterologous booster dose did not identify any new safety concerns, as compared with adverse reactions reported following Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) primary series doses or homologous booster dose. Neutralizing antibody titers, as measured by a pseudovirus neutralization assay using a lentivirus expressing the SARS-CoV-2 Spike protein with D614G mutation, were assessed on Day 1 prior to administration of the booster dose and on Day 15 after the booster dose. A booster response to the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) was demonstrated regardless of primary vaccination. Based on the on the totality of the scientific evidence available, including data from the above-referenced clinical trial, FDA concluded that a heterologous booster dose of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) may be effective, and that the known and potential benefits of a heterologous booster dose of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) following completion of primary vaccination with another authorized COVID-19 vaccine outweigh the known and potential risks.

For the October 29, 2021 authorization for the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) that uses Tris buffer for individuals 5 through 11 years of age, FDA reviewed safety and effectiveness data from an ongoing Phase 1/2/3 trial that has enrolled 4,695 participants 5 through 11 years of age, of whom 3,109 participants received Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) (containing 10 mcg modRNA) formulated using PBS buffer and approximately 1,538 participants received saline control in Phase 2/3. FDA's review of the available safety data from 3,109 participants 5 through 11 years of age who received Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) (containing 10 mcg modRNA), including 1,444 who were followed for at least 2 months after receiving the second dose, did not identify specific safety concerns that would preclude issuance of an EUA. SARS-CoV-2 50% neutralizing antibody titers 1 month after the second dose were compared between a subset of participants 5 through 11 years of age who received Pfizer-BioNTech COVID-19 Vaccine

(Original monovalent) (containing 10 mcg modRNA) and a subset of participants 16 through 25 years of age who received Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) (containing 30 mcg modRNA) in the above-referenced ongoing Phase 1/2/3 trial that enrolled approximately 46,000 participants. Immunobridging analyses included a subset of participants from each study who had no serological or virological evidence of past SARS-CoV-2 infection. FDA's analyses confirm that immunobridging criteria were met for both geometric mean antibody titers and seroresponse rates. FDA's analysis of available descriptive efficacy data from 1,968 participants 5 through 11 years of age without evidence of SARS-CoV-2 infection prior to 7 days after dose 2 confirm that the vaccine was 90.7% effective (95% confidence interval 67.7, 98.3) in preventing COVID-19 occurring at least 7 days after the second dose (with 3 COVID-19 cases in the vaccine group compared to 16 COVID-19 cases in the placebo group). Based on these data, FDA concluded that it is reasonable to believe that Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) may be effective in individuals 5 through 11 years of age. Additionally, FDA determined it is reasonable to conclude, based on the totality of the scientific evidence available, that the known and potential benefits of Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) outweigh the known and potential risks of the vaccine, for the prevention of COVID-19 in individuals 5 through 11 years of age. Finally, on October 26, 2021, the Vaccines and Related Biological Products Advisory Committee voted in agreement with this conclusion.

For the October 29, 2021 authorization of the manufacturing change to include an additional formulation of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) that uses Tris buffer instead of PBS buffer used in the originally authorized Pfizer-BioNTech COVID-19 Vaccine (Original monovalent), FDA reviewed data on analytical comparability, which uses laboratory testing to demonstrate that a change in product formulation is not expected to impact safety or effectiveness.[35] In the case of Pfizer-BioNTech COVID-19 Vaccine (Original monovalent), multiple different release parameters were evaluated, ranging from product appearance to size of the lipid-nanoparticle to the integrity of the modRNA in the product. Release and characterization tests include tests for purity, composition, and critical attributes of mRNA associated with the activity of the vaccine. In this case, analytical comparability to the current PBS formulation of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) was demonstrated for the Tris formulation of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) through a combination of release and characterization testing.

For the November 19, 2021 authorization expanding the eligible population for the homologous and heterologous booster doses to individuals 18 years of age and older, FDA reviewed data provided by the sponsor and other data available to FDA, including real world evidence. Data previously reviewed to support the September 22, 2021 authorization of a homologous booster

[35] Analytical comparability assessments use laboratory testing to demonstrate that a change in product formulation does not impact a product's safety or effectiveness. For the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent), multiple different release parameters were evaluated to assess the comparability of the modified formulation (the formulation with the Tris buffer) to the originally-authorized formulation (the formulation with the PBS buffer). These release parameters ranged from product appearance to size of the lipid-nanoparticle to the integrity of the modRNA in the product. Release and characterization tests include tests for purity, composition, and critical attributes of mRNA associated with the activity of the vaccine. The combination of release testing and characterization testing demonstrated that the modified formulation was analytically comparable to the original formulation.

dose, together with new real-world data indicating increasing COVID-19 cases in the United States, including among vaccinated individuals, and suggesting a decreased risk of myocarditis following mRNA COVID-19 vaccine booster doses compared with second primary series doses, support expansion of the population eligible for a Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) homologous booster dose to include all individuals 18 years of age and older who completed the primary series at least 6 months previously. Data previously reviewed to support the October 20, 2021 authorization of a heterologous booster dose, together with data and information to support authorization of the EUA amendment to expand the eligible population for a homologous booster dose of the Moderna COVID-19 Vaccine, support a revision to the Pfizer-BioNTech COVID-19 Vaccine EUA such that the eligible population for a heterologous booster dose of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) is all adults 18 years of age and older who completed primary vaccination with another authorized COVID-19 vaccine. Based on the totality of the scientific evidence available, FDA concluded that a homologous or heterologous booster dose of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) may be effective, and that the known and potential benefits of the booster dose of the Pfizer-BioNTech Vaccine (Original monovalent) following completion of primary vaccination with Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) or another authorized COVID-19 vaccine, outweigh the known and potential risks in individuals 18 years of age and older.

For the December 9, 2021 authorization expanding the eligible population for the homologous booster doses to individuals 16 years of age and older, FDA reviewed: data submitted previously by the sponsor to support the September 22, 2021 and November 19, 2021 authorization of a homologous booster dose under EUA; real-world data, which includes data that indicates increasing COVID-19 cases in the United States amongst vaccinated and unvaccinated individuals, and data suggesting a decreased risk of myocarditis following administration of Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) booster doses compared with second primary series doses among vaccinated individuals; and a benefit-risk assessment from the sponsor, to support the expansion of the population eligible for a Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) homologous booster dose to include all individuals 16 years of age and older who completed the primary series at least 6 months previously. Based on the totality of the scientific evidence available, FDA concluded that a homologous booster dose of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) may be effective, and that the known and potential benefits of the booster dose of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) following completion of primary vaccination with Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) outweigh the known and potential risks in individuals 16 years of age and older.

For the December 16, 2021 authorization, the FDA reviewed manufacturing information indicating that the expiration date of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) that uses the Tris buffer could be extended from 6 months to 9 months when held at -90 °C to -60 °C.

For the January 3, 2022 authorization expanding the use of the vaccine as a single booster dose in individuals 12 through 15 years of age and lowering the authorized dosing interval of the homologous booster dose to at least 5 months after completion of the primary series, the FDA

reviewed: prepublications; accepted publications; published publications; real world evidence on the safety of booster doses provided by the Israeli Ministry of Health, which includes data from over 6,300 individuals 12 to 15 years of age who received a Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) booster dose at least 5 months following completion of the primary series, noting no cases of myocarditis or pericarditis reported to date; and real world evidence data from approximately 4.7 million third (booster) doses of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) given to individuals 16 years of age and older at least 5 months after the primary series. Based on the totality of the scientific evidence available, FDA concluded that a homologous booster dose of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) may be effective and that the known and potential benefits of the booster dose of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) following completion of primary vaccination with the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) outweigh the known and potential risks in individuals 12 years of age and older when given at least 5 months following the primary series.

For the January 3, 2022 authorization of a third primary series dose in individuals 5 through 11 years of age who have undergone solid organ transplantation, or individuals 5 through 11 years of age who are diagnosed with conditions that are considered to have an equivalent level of immunocompromise, data on safety in this population is inferred from the experience in healthy children 5 through 11 years of age who were vaccinated with the primary series, and data from vaccine efficacy in individuals 12 years of age and older is extrapolated to determine efficacy. Based on the totality of the scientific evidence available, FDA concluded that a third dose of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) may be effective and that the known and potential benefits of a third dose of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) outweigh the known and potential risks of the vaccine for immunocompromised individuals 5 through 11 years of age who have received two doses of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) and who have undergone solid organ transplantation, or who are diagnosed with conditions that are considered to have an equivalent level of immunocompromise.

For the March 29, 2022 authorization of a second booster dose of the Pfizer-BioNTechCOVID-19 Vaccine (Original monovalent) for administration to individuals 50 years of age and older and to individuals 12 years of age or older with certain kinds of immunocompromise at least 4 months after receipt of a first booster dose of any of the FDA authorized or approved COVID-19 vaccines, the sponsor submitted a publication which included immunogenicity data from an ongoing study in Israel. (*Gili Regev-Yochay, Tal Gonen, Mayan Gilboa, et al. 2022 DOI: 10.1056/NEJMc2202542*)). In this open-label, non-randomized clinical study in healthcare workers at a single center in Israel, 154 individuals 18 years of age and older who had received primary vaccination and a first booster dose with Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) were administered a second booster dose of Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) at least four months after the first booster dose. Among these individuals, approximately 11-fold increases in geometric mean neutralizing antibody titers against wild-type virus and Delta and Omicron variants, respectively, were reported at two weeks after the second booster dose as compared to 5 months after the first booster dose. Safety surveillance data from the Ministry of Health of Israel on the administration of approximately 700,000 fourth doses of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) given at least 4 months after the

third dose in adults 18 years of age and older (approximately 600,000 of whom were 60 years of age and older) revealed no new safety concerns. Based on the totality of the scientific evidence available, FDA concluded that a second booster dose of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) may be effective and that the known and potential benefits of a second booster dose of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) following receipt of a first booster dose of any FDA authorized or approved COVID-19 vaccine outweigh the known and potential risks in the authorized populations when given at least 4 months following the first booster dose.

For the May 17, 2022 authorization of a single booster dose administered at least 5 months after completing a primary series of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) in individuals 5 through 11 years of age, FDA reviewed safety and effectiveness data from a subset of participants 5 through 11 years of age enrolled in an ongoing study described above (see October 29, 2021 authorization). A total of 401 participants 5 through 11 years of age received a booster dose of Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) (10 mcg modRNA) at least 5 months after completing the primary series (range 5 to 9 months, 86.8% of participants received the booster dose at least 8 months after Dose 2). FDA's review of the available safety data collected up to the cutoff date of March 22, 2022 (median follow-up time of 1.3 months), did not identify specific safety concerns that would preclude issuance of an EUA. The geometric mean SARS-CoV-2 50% neutralizing antibody titer (NT50) 1 month after the booster dose was compared to the pre- booster dose geometric mean titers (GMT) in 67 participants 5 through 11 years of age who had no serological or virological evidence of SARS-CoV-2 infection up to one month after the booster dose. The NT50 GMT at 1 month after the booster dose was increased compared to before the booster dose. Based on the totality of the scientific evidence available, FDA concluded that a booster dose of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) following completion of primary vaccination with the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) may be effective and that the known and potential benefits of a booster dose of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) following completion of primary vaccination with the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) outweigh the known and potential risks in individuals 5 through 11 years of age when given at least 5 months following the primary series.

For the June 17, 2022 authorization for the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) that uses Tris buffer for individuals 6 months through 4 years of age, FDA reviewed safety and effectiveness data from an ongoing Phase 1/2/3 trial. This study enrolled 1,776 participants 6 through 23 months of age, of whom 1,178 participants received at least one dose of Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) (containing 3 mcg modRNA) and 598 participants received at least one dose of saline placebo; and also enrolled 2,750 participants 2 through 4 years of age, of whom 1,835 participants received at least one dose of Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) (containing 3 mcg modRNA) and 915 participants received at least one dose of saline placebo in Phase 2/3. In an analysis of Study 3 (Phase 2/3), based on data in the blinded placebo-controlled follow-up period up to the cutoff date of April 29, 2022, 570 participants 6 through 23 months of age who received a 3-dose primary series [386 Pfizer BioNTech COVID 19 Vaccine (Original monovalent); 184 placebo] have been followed for a median of 1.3 months after the third dose. In an analysis of Study 3 (Phase 2/3), based on data in the blinded placebo-controlled follow-up period up to the cutoff

date of April 29, 2022, 886 participants 2 through 4 years of age who received a 3 dose primary series [606 Pfizer BioNTech COVID 19 Vaccine (Original monovalent); 280 placebo] have been followed a median of 1.4 months after the third dose. The median duration of combined blinded and unblinded follow-up after the third dose was 2.1 months for each age group. FDA's review of the available safety data from participants 6 through 23 months of age and participants 2 through 4 years of age did not identify specific safety concerns that would preclude issuance of an EUA. SARS-CoV-2 50% neutralizing antibody titers were compared between a subset of participants 6 through 23 months of age, or a subset of participants 2 through 4 years of age, at 1 month after the three-dose primary series of Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) (containing 3 mcg modRNA per dose) and a subset of participants 16 through 25 years of age at 1 month after the two-dose primary series of Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) (containing 30 mcg modRNA per dose) in the above-referenced ongoing Phase 1/2/3 trial that enrolled approximately 46,000 participants. Immunobridging analyses included a subset of participants from each study who had no evidence of prior SARS-CoV-2 infection up to 1 month after completion of the primary series. FDA's analyses confirm that for both age groups, 6 through 23 months of age and 2 through 4 years of age, immunobridging criteria were met for both geometric mean antibody titers and seroresponse rates. Based on these data, FDA concluded that it is reasonable to believe that Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) may be effective in individuals 6 months through 4 years of age. Additionally, FDA determined it is reasonable to conclude, based on the totality of the scientific evidence available, that the known and potential benefits of Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) outweigh the known and potential risks of the vaccine for the prevention of COVID-19 in individuals 6 months through 4 years of age. Finally, on June 15, 2022, the Vaccines and Related Biological Products Advisory Committee voted in agreement with this conclusion.

The August 31, 2022 authorization of a booster dose of Pfizer-BioNTech COVID-19 Vaccine, Bivalent in individuals 12 years and older is based on: 1) safety and effectiveness data from clinical trials which evaluated primary and booster vaccination with Pfizer-BioNTech COVID-19 Vaccine (Original monovalent); 2) postmarketing safety data with Pfizer-BioNTech COVID-19 Vaccine (Original monovalent); and 3) safety and immunogenicity data from a clinical trial (Study 4) which evaluated a booster dose of Pfizer's and BioNTech's bivalent COVID-19 vaccine (Original and Omicron BA.1), not authorized or approved in the U.S., hereafter referred to as bivalent vaccine (Original and Omicron BA.1). FDA considered safety and effectiveness data previously reviewed by FDA in support of the December 11, 2020, May 10, 2021, and October 29, 2021 authorizations of primary vaccinations and the September 22, 2021, October 20, 2021, November 19, 2021, December 9, 2021, January 3, 2022, and March 29, 2022 authorizations of booster vaccinations in individuals 12 years and older with Pfizer-BioNTech COVID-19 Vaccine (Original monovalent), as well as postmarketing safety data. In Study 4, a total of 610 participants greater than 55 years of age previously vaccinated with a 2-dose primary series and 1 booster dose of Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) received a second booster dose with either Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) (305 participants) or the bivalent vaccine (Original and Omicron BA.1) (305 participants). The bivalent vaccine (Original and Omicron BA.1) booster dose was administered 4.7 to 11.5 months (median 6.3 months) after the first booster dose. The Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) booster dose was administered 5.3 to 13.1 months

(median 6.3 months) after the first booster dose. The median duration of follow-up was 1.7 months for those that received the bivalent vaccine (Original and Omicron BA.1) and 1.8 months for those that received Pfizer-BioNTech COVID-19 Vaccine (Original monovalent). FDA's review of the safety data accrued with the bivalent vaccine (Original and Omicron BA.1) together with the previously submitted safety data and post-marketing data with Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) did not identify specific safety concerns that would preclude issuance of an EUA. In study 4, primary immunogenicity analyses assessed superiority with respect to level of 50% neutralizing titer (NT50) and noninferiority with respect to seroresponse rate of the anti-Omicron BA.1 immune response induced by a second booster dose with the bivalent vaccine (Original and Omicron BA.1) relative to the response elicited by a second booster dose with Pfizer BioNTech COVID-19 Vaccine (Original monovalent) 1 month after vaccination. Superiority of the anti-Omicron BA.1 NT50 and non-inferiority of the seroresponse rate to the Omicron BA.1 variant for the bivalent vaccine (Original and Omicron BA.1) relative to Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) were met. In a secondary analysis of NT50 to the Original SARS-CoV-2 strain, a second booster dose with the bivalent vaccine (Original and Omicron BA.1) was non-inferior to a second booster dose with Pfizer-BioNTech COVID-19 Vaccine (Original monovalent). In a descriptive analysis, 50.0% (95% CI 42.6, 57.4) of participants who received a second booster dose with the bivalent vaccine (Original and Omicron BA.1) and 49.2% (95% CI 41.6, 56.7) of participants who received a second booster dose with the Pfizer-BioNTech COVID-19 Vaccine achieved seroresponse (≥ 4-fold rise from baseline before the second booster dose) to the Original strain. Based on the totality of the scientific evidence available, including these data and previously submitted data on the effectiveness of primary and booster vaccination with Pfizer-BioNTech COVID-19 Vaccine (Original monovalent), FDA concluded that it is reasonable to believe that Pfizer-BioNTech COVID-19 Vaccine, Bivalent may be effective as a booster dose in individuals 12 years of age and older when administered at least 2 months after completion of primary vaccination or receipt of the most recent booster dose with any FDA authorized or approved monovalent COVID-19 vaccine. Additionally, FDA determined it is reasonable to conclude, based on the totality of the scientific evidence available, that the known and potential benefits of Pfizer-BioNTech COVID-19 Vaccine, Bivalent outweigh the known and potential risks of the vaccine for the prevention of COVID-19 in individuals 12 years of age and older when administered at least 2 months after completion of primary vaccination or receipt of the most recent booster dose with any FDA authorized or approved monovalent COVID-19 vaccine. In addition, authorization of Pfizer-BioNTech COVID-19 Vaccine, Bivalent was considered for the express purpose of improving protection conferred by COVID-19 vaccine booster doses against the currently circulating Omicron variant of SARS-CoV-2, resulting in a more favorable anticipated benefit/risk balance compared to Pfizer-BioNTech COVID-19 Vaccine (Original monovalent). Consequently, revising the EUA to no longer provide for the use of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) as a booster dose for individuals 12 years of age and older was appropriate for the protection of the public health.

The October 12, 2022 authorization of a booster dose of Pfizer-BioNTech COVID-19 Vaccine, Bivalent in individuals 5 through 11 years of age is based on the data that FDA relied on for the August 31, 2022 authorization of the Pfizer-BioNTech COVID-19 Vaccine, Bivalent in individuals 12 years of age and older, including data previously reviewed by FDA for the October 29, 2021 authorization for the Pfizer-BioNTech COVID-19 Vaccine (Original

monovalent) as a primary series for individuals 5 through 11 years of age and for the May 17, 2022 authorization of a single booster dose of Pfizer-BioNTech COVID-19 Vaccine in individuals 5 through 11 years of age, administered at least 5 months after completing a primary series with this vaccine. FDA also considered additional data reviewed for the May 17, 2022 authorization of a single booster dose of Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) in this age group. Based on the totality of the scientific evidence available, FDA concluded that it is reasonable to believe that Pfizer-BioNTech COVID-19 Vaccine, Bivalent may be effective as a booster dose in individuals 5 through 11 years of age when administered at least 2 months after completion of primary vaccination or receipt of the most recent booster dose with any FDA authorized or approved monovalent COVID-19 vaccine. Additionally, FDA determined it is reasonable to conclude, based on the totality of the scientific evidence available, that the known and potential benefits of Pfizer-BioNTech COVID-19 Vaccine, Bivalent outweigh the known and potential risks of the vaccine for the prevention of COVID-19 in individuals 5 through 11 years of age when administered at least 2 months after completion of primary vaccination or receipt of the most recent booster dose with any FDA authorized or approved monovalent COVID-19 vaccine. In addition, authorization of Pfizer-BioNTech COVID-19 Vaccine, Bivalent was considered for the express purpose of improving protection conferred by COVID-19 vaccine booster doses against the currently circulating Omicron variant of SARS-CoV-2, resulting in a more favorable anticipated benefit/risk balance compared to Pfizer-BioNTech COVID-19 Vaccine (Original monovalent). Consequently, it was appropriate for the protection of the public health to revise this EUA to no longer provide for the use of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent). as a booster dose for individuals 5 through 11 years of age.

The December 8, 2022 authorization of the Pfizer-BioNTech COVID-19 Vaccine, Bivalent, as the third dose in the 3-dose primary series administered at least 8 weeks after the second primary series dose of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) in individuals 6 months through 4 years of age is based on safety and effectiveness data previously reviewed. Specifically, the safety of the Pfizer-BioNTech COVID-19 Vaccine, Bivalent for the third dose of the primary series in individuals 6 months through 4 years of age is based on: 1) safety data from a clinical study which evaluated a booster dose with bivalent vaccine (Original and Omicron BA.1), in individuals greater than 55 years of age;[36] 2) safety data from clinical studies which evaluated primary vaccination with Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) in individuals 6 months of age and older; 3) safety data from clinical studies which evaluated booster vaccination with Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) (previously, but no longer, authorized) in individuals 5 years of age and older; and 4) postmarketing safety data with the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) and the Pfizer-BioNTech COVID-19 Vaccine, Bivalent. Effectiveness is based on: 1) efficacy of primary vaccination with Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) in individuals 16 years of age and older; 2) effectiveness of primary vaccination with Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) in individuals 6 months through 4 years of age; and 3) immunogenicity of a second booster dose with bivalent vaccine (Original and Omicron BA.1) in individuals greater than 55 years of age in Study 4. Based on the totality of

[36] The safety data accrued with the bivalent vaccine (Original and Omicron BA.1) and with the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) are relevant to the Pfizer-BioNTech COVID-19 Vaccine, Bivalent because these vaccines are manufactured using the same process.

scientific evidence available, FDA concluded that it is reasonable to believe that Pfizer-BioNTech COVID-19 Vaccine, Bivalent may be effective in individuals 6 months through 4 years of age when given as the third dose in the 3-dose primary series administered at least 8 weeks after a second primary series dose of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent). Additionally, FDA determined it is reasonable to conclude, based on the totality of the scientific evidence available, that the known and potential benefits of Pfizer-BioNTech COVID-19 Vaccine, Bivalent outweigh the known and potential risks of the vaccine for the prevention of COVID-19 in individuals 6 months through 4 years of age when given as the third dose in the 3-dose primary series administered at least 8 weeks after a second primary series dose of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent). In addition, authorization of the Pfizer-BioNTech COVID-19 Vaccine, Bivalent has been considered for the express purpose of improving protection conferred by the third dose of the primary series in individuals 6 months through 4 years of age against the currently circulating Omicron variant of SARS-CoV-2, resulting in a more favorable anticipated benefit/risk balance compared to Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) for the third dose. Consequently, at this time, revising this EUA to no longer provide for the use of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) as a third dose in the primary series in this age group is appropriate for the protection of the public health.

The March 14, 2023 authorization of Pfizer-BioNTech COVID-19 Vaccine, Bivalent as a single booster dose in individuals 6 months through 4 years at least 2 months after completion of primary vaccination with 3 doses of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) is based on data previously reviewed to support the December 8, 2022 authorization of the Pfizer-BioNTech COVID-19 Vaccine, Bivalent as the third dose in the 3-dose primary series administered at least 8 weeks after the second primary series dose of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) in individuals 6 months through 4 years of age, as well as safety and immunogenicity of a booster dose with Pfizer-BioNTech COVID-19 Vaccine, Bivalent in individuals 6 months through 4 years of age and safety of a booster dose with Pfizer-BioNTech COVID-19 Vaccine, Bivalent in individuals ≥5 years of age. FDA's review of the available safety data in individuals 6 months through 4 years of age and individuals ≥5 years of age did not identify specific safety concerns that would preclude issuance of an EUA. Study 6 enrolled participants 6 months through 11 years of age to receive a booster (fourth dose) of Pfizer-BioNTech COVID-19 Vaccine, Bivalent. In this study, 113 participants 5 through 11 years of age previously vaccinated with a 2-dose primary series and 1 booster dose of Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) (10 mcg modRNA) received a booster (fourth dose) with Pfizer-BioNTech COVID-19 Vaccine, Bivalent (Original and Omicron BA.4/BA.5) (10 mcg modRNA). Participants received a booster (fourth dose) with Pfizer-BioNTech COVID-19, Bivalent 2.6 to 8.5 months after receiving their third dose with Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) and had a median follow-up time of 1.6 months (range 1.1 to 2.3 months) up to a data cutoff date of November 25, 2022. In Study 6, a subset of 60 participants 6 months through 4 years of age received a booster dose (fourth dose) of Pfizer-BioNTech COVID-19 Vaccine, Bivalent (3 mcg modRNA) after receiving 3 prior doses of Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) (3 mcg modRNA). Neutralizing antibody levels following the fourth dose were summarized. Data from a subset of participants 6 months through 4 years of age in Study 3 who received 3 doses of Pfizer BioNTech COVID-19 Vaccine (Original monovalent) (3 mcg modRNA) were reviewed as a

reference. There were no formal statistical comparisons of the immune response between subsets from the two studies. Based on the totality of scientific evidence available, FDA concluded that it is reasonable to believe that Pfizer-BioNTech COVID-19 Vaccine, Bivalent may be effective in individuals 6 months through 4 years of age when given as a booster dose at least 2 months after completion of primary vaccination with 3 doses of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent). Additionally, FDA determined it is reasonable to conclude, based on the totality of the scientific evidence available, that the known and potential benefits of the Pfizer-BioNTech COVID-19 Vaccine, Bivalent outweigh the known and potential risks of the vaccine for the prevention of COVID-19 in individuals 6 months through 4 years of age when given as a single booster dose at least 2 months after completion of primary vaccination with 3 doses of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent).

For the April 18, 2023 authorization, the effectiveness of Pfizer-BioNTech COVID-19 Vaccine, Bivalent for individuals 6 months of age and older is based on previously reviewed data on 1) effectiveness of Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) in individuals 6 months of age and older, 2) immunogenicity of the bivalent vaccine (Original and Omicron BA.1) in individuals greater than 55 years of age, and 3) immunogenicity of Pfizer-BioNTech COVID-19 Vaccine, Bivalent in individuals 6 months through 4 years of age. Effectiveness of a single dose of Pfizer-BioNTech COVID-19 Vaccine, Bivalent for most individuals 5 years of age and older is based on seroprevalence surveys that estimate that almost all of the U.S. population 5 years of age and older now have antibodies (from vaccination and/or infection) against SARS-CoV-2 (*Centers for Disease Control and Prevention. COVID Data Tracker. Atlanta, GA: US Department of Health and Human Services, CDC; 2023, March 31.* https://covid.cdc.gov/covid-data-tracker) and an observational, test-negative, case-control study (*Powell AA, et al. Lancet Infect Dis. 2023. PMID: 36436536).* This study included symptomatic individuals aged 12 to 17 years of age with SARS-CoV-2 polymerase-chain-reaction (PCR) testing results in England from August 9, 2021 to March 31, 2022. Among 1,161,704 SARS-CoV-2 PCR tests linked to COVID-19 vaccination status, there were 390,467 SARS-CoV-2 PCR confirmed positive tests during Delta variant predominance and 212,433 SARS-CoV-2 positive tests during Omicron variants BA.1 and BA.2 predominance. Among adolescents who had received only one dose of Pfizer-BioNTech COVID-19 Vaccine (Original monovalent), those who had evidence of previous infection with Alpha, Delta, or Omicron variants had increased protection against symptomatic Omicron infection compared with those with no evidence of previous infection. At 2 to 14 weeks following one dose of Pfizer-BioNTech COVID-19 Vaccine (Original monovalent), the estimated vaccine effectiveness was 18.8% (95% CI: 17.2%, 20.3%), 81.5% (95% CI: 80.0%, 82.9%), 78.8% (95% CI: 77.9, 79.5%), and 79.6% (95% CI: 44.9%, 92.4%) for individuals with no evidence of prior infection, and evidence of prior Alpha, Delta, and Omicron infection, respectively. The safety of Pfizer-BioNTech COVID-19 Vaccine, Bivalent in individuals 6 months of age and older is based on previously reviewed safety data from clinical studies which evaluated primary and booster vaccination with Pfizer BioNTech COVID-19 Vaccine (Original monovalent), booster vaccination with Pfizer-BioNTech COVID-19 Vaccine, Bivalent, and a booster dose of bivalent vaccine (Original and Omicron BA.1); and postmarketing safety data with Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) and Pfizer-BioNTech COVID-19 Vaccine, Bivalent. FDA's review of the available safety data in individuals 6 months of age and older did not identify specific safety concerns that would preclude issuance of an EUA. Based on the totality of the scientific evidence available, FDA

concluded that it is reasonable to believe that Pfizer-BioNTech COVID-19 Vaccine, Bivalent may be effective in individuals 6 months of age and older for the prevention of COVID-19 when administered in accordance with the revised dosing regimen and schedule. Additionally, FDA determined it is reasonable to conclude, based on the totality of the scientific evidence available, that the known and potential benefits of the Pfizer-BioNTech COVID-19 Vaccine, Bivalent outweigh the known and potential risks of the vaccine for the prevention of COVID-19 in individuals 6 months of age and older when administered according to the revised dosing regimen and schedule. The revised dosing regimen and schedule are set forth in the Scope of Authorization (Section II). In addition, simplification of the vaccine composition (i.e., single vaccine composition for all doses) and schedule was considered for the express purpose of reducing complexity, decreasing vaccine administration errors due to the complexity of the number of different vial presentations, and potentially increasing vaccine uptake. Revising the EUA to provide for a simplified vaccine composition and schedule in the United States, by no longer providing for the use of Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) in the United States, is appropriate for the protection of the public health.

The April 28, 2023 authorization of additional doses of the Pfizer-BioNTech COVID-19 Vaccine, Bivalent in individuals 6 months through 4 years of age with certain kinds of immunocompromise is based on previously reviewed data. Specifically, the safety and effectiveness are based on 1) the safety and effectiveness of a fourth dose of Pfizer-BioNTech COVID-19 Vaccine, Bivalent in individuals 6 months through 4 years of age after three previous doses, and 2) immunogenicity of a third primary series dose of Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) in individuals with compromised immunity. FDA also reviewed literature on immunogenicity of a fourth dose of Pfizer-BioNTech COVID-19 Vaccine, Bivalent in adults. Based on the totality of scientific evidence available, FDA concluded that it is reasonable to believe that Pfizer-BioNTech COVID-19 Vaccine, Bivalent may be effective in individuals 6 months through 4 years of age with certain kinds of immunocompromise who have received three 0.2 mL doses (Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) or Pfizer-BioNTech COVID-19 Vaccine, Bivalent), as 1) a fourth dose administered at least 1 month following the most recent dose; and 2) additional doses that may be administered at the discretion of the healthcare provider, taking into consideration the individual's clinical circumstances. Additionally, FDA determined that it is reasonable to conclude, based on the totality of the scientific evidence available, that the known and potential benefits of the Pfizer-BioNTech COVID-19 Vaccine, Bivalent outweigh the known and potential risks of the vaccine for the prevention of COVID-19 in individuals 6 months through 4 years of age with certain kinds of immunocompromise who have received three 0.2 mL doses (Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) or Pfizer-BioNTech COVID-19 Vaccine, Bivalent), when given as 1) a fourth dose administered at least 1 month following the most recent dose; and 2) additional doses that may be administered at the discretion of the healthcare provider, taking into consideration the individual's clinical circumstances

The September 11, 2023 authorization of Pfizer-BioNTech COVID-19 Vaccine (2023-2024 Formula) for individuals 6 months through 11 years of age is based on: 1) effectiveness of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) in individuals 6 months of age and older, 2) immunogenicity of Pfizer-BioNTech COVID-19 Vaccine, Bivalent in individuals 6 months through 4 years of age, and 3) safety data previously reviewed. FDA's review of

previously submitted safety data with Pfizer-BioNTech COVID-19 Vaccine (Original monovalent), Pfizer and BioNTech's bivalent vaccine (Original and Omicron BA.1) and Pfizer-BioNTech COVID-19 Vaccine, Bivalent, and postmarketing safety data from Pfizer-BioNTech COVID-19 Vaccine (Original monovalent), and Pfizer-BioNTech COVID-19 Vaccine, Bivalent did not identify specific safety concerns that would preclude issuance of an EUA. The safety data accrued with the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent), bivalent vaccine (Original and Omicron BA.1), and Pfizer-BioNTech COVID-19 Vaccine, Bivalent are relevant to Pfizer-BioNTech COVID-19 Vaccine (2023-2024 Formula) because these vaccines are manufactured using the same process. Based on the totality of the scientific evidence available, FDA concluded that it is reasonable to believe that Pfizer-BioNTech COVID-19 Vaccine (2023-2024 Formula) may be effective in individuals 6 months through 11 years of age for the prevention of COVID-19 when administered in accordance with the dosing regimen and schedule as outlined in Section II. Additionally, FDA determined it is reasonable to conclude, based on the totality of the scientific evidence available, that the known and potential benefits of the Pfizer-BioNTech COVID-19 Vaccine (2023-2024 Formula) outweigh the known and potential risks of the vaccine for the prevention of COVID-19 in individuals 6 months through 11 years of age when administered according to the authorized dosing regimen and schedule.

The August 22, 2024 authorization of Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) for individuals 6 months through 11 years of age is based on: 1) Clinical safety, immunogenicity, and efficacy data from studies which evaluated primary and booster vaccination with the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent), Pfizer-BioNTech COVID-19 Bivalent Vaccine (Original and Omicron BA.4/BA.5), and Bivalent Vaccine (Original and Omicron BA.1), 2) Postmarketing safety surveillance data of Pfizer-BioNTech COVID-19 Vaccine (Original monovalent), Pfizer-BioNTech COVID-19 Vaccine, Bivalent (Original and Omicron BA.4/BA.5), and Pfizer-BioNTech COVID-19 Vaccine (2023-2024 Formula), 3) Nonclinical data demonstrating that Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) when administered to vaccine-naive and vaccine-experienced laboratory animals, elicited higher neutralizing antibodies compared with the Pfizer-BioNTech COVID-19 Vaccine (2023-2024 Formula) against JN.1-lineage descendant variants, 4) Chemistry, Manufacturing and Control information related to the single and multiple dose vial presentations of Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) including but not limited to the manufacturing facilities. Based on the totality of the scientific evidence available, FDA concluded that it is reasonable to believe that Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) may be effective in individuals 6 months through 11 years of age for the prevention of COVID-19 when administered in accordance with the dosing regimen and schedule outlined in Section II. Additionally, FDA determined it is reasonable to conclude, based on the totality of the scientific evidence available, that the known and potential benefits of the Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) outweigh the known and potential risks of the vaccine for the prevention of COVID-19 in individuals 6 months through 11 years of age when administered according to the authorized dosing regimen and schedule.

The August 22, 2024 authorization of COMIRNATY (COVID-19 Vaccine, mRNA) (2024-2025 Formula) for use to complete the three-dose series on or after the date the individual with certain kinds of immunocompromise turns 12 years of age, is based on data previously reviewed to support: 1) the August 12, 2021 authorization of Pfizer-BioNTech COVID-19 Vaccine (Original

monovalent) as a third primary series dose in individuals 12 years of age and older with certain kinds of immunocompromise; and 2) the October 29, 2021 authorization of Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) as a two-dose primary series in individuals 5 through 11 years of age. Based on the totality of the scientific evidence available, FDA concluded that it is reasonable to believe that COMIRNATY (COVID-19 Vaccine, mRNA) (2024-2025 Formula) may be effective in individuals with certain kinds of immunocompromise turning from 11 to 12 years of age during the vaccination series for the prevention of COVID-19 when administered in accordance with the dosing regimen and schedule outlined in Section II. Additionally, FDA determined it is reasonable to conclude, based on the totality of the scientific evidence available, that the known and potential benefits of COMIRNATY (COVID-19 Vaccine, mRNA) (2024-2025 Formula) outweigh the known and potential risks of the vaccine for the prevention of COVID-19 in individuals with certain kinds of immunocompromise turning from 11 to 12 years of age during the vaccination series when administered according to the authorized dosing regimen and schedule.

Having concluded that the criteria for issuance of this authorization under Section 564(c) of the Act are met, I am authorizing the emergency use of Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula), Pfizer-BioNTech COVID-19 Vaccine (2023-2024 Formula), and COMIRNATY (COVID-19 Vaccine, mRNA) (2024-2025 Formula) for the prevention of COVID-19, as described in the Scope of Authorization section of this letter (Section II) and subject to the terms of this authorization.

I. Criteria for Issuance of Authorization

I have concluded that the emergency use of Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula)[37] for the prevention of COVID-19 when administered as described in the Scope of Authorization (Section II) meets the criteria for issuance of an authorization under Section 564(c) of the Act, because:

A. SARS-CoV-2 can cause a serious or life-threatening disease or condition, including severe respiratory illness, to humans infected by this virus;

B. Based on the totality of scientific evidence available to FDA, it is reasonable to believe that Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) may be effective in preventing COVID-19, and that, when used under the conditions described in this authorization, the known and potential benefits of Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) when used to prevent COVID-19 outweigh its known and potential risks; and

[37] In this section (Section I), references to Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) also apply to Pfizer-BioNTech COVID-19 Vaccine (2023-2024 Formula), and COMIRNATY (COVID-19 Vaccine, mRNA) (2024-2025 Formula).

C. There is no adequate, approved, and available alternative[38] to the emergency use of Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) to prevent COVID-19.[39]

II. Scope of Authorization

I have concluded, pursuant to Section 564(d)(1) of the Act, that the scope of this authorization is limited as follows:

- Pfizer Inc. will supply Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) and Pfizer-BioNTech COVID-19 Vaccine (2023-2024 Formula), either directly or through authorized distributor(s)[40], for use consistent with the terms and conditions of this EUA;
- Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) and Pfizer-BioNTech COVID-19 Vaccine (2023-2024 Formula) may be administered by a vaccination provider[41] without an individual prescription for each vaccine recipient;[42] and
- The Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) and Pfizer-BioNTech COVID-19 Vaccine (2023-2024 Formula), as described in more detail under *Product Description* and covered by this authorization, will be administered by vaccination providers in accordance with the uses described in this Scope of Authorization (Section II).

[38] There are no COVID-19 vaccines that are approved to provide additional doses to certain immunocompromised populations as described in this EUA or COVID-19 vaccination in individuals younger than 12 years of age.

[39] No other criteria of issuance have been prescribed by regulation under Section 564(c)(4) of the Act.

[40] "Authorized Distributor(s)" are identified by Pfizer Inc., as an entity or entities allowed to distribute authorized Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) or Pfizer-BioNTech COVID-19 Vaccine (2023-2024 Formula).

[41] For purposes of this letter, "vaccination provider" refers to the facility, organization, or healthcare provider (e.g., non-physician healthcare professionals, such as nurses, pharmacists) licensed or otherwise authorized to administer or provide vaccination services pursuant to State law. If the vaccine is exported from the United States, a "vaccination provider" is a provider that is authorized to administer this vaccine in accordance with the laws of the country in which it is administered. For purposes of this letter, "vaccination provider" also includes a person authorized by the U.S. Department of Health and Human Services (e.g., under the PREP Act Declaration for Medical Countermeasures against COVID-19) to administer FDA-authorized COVID-19 vaccine (e.g., qualified pharmacy technicians and State-authorized pharmacy interns acting under the supervision of a qualified pharmacist). See, e.g., HHS, *Eleventh Amendment to the Declaration Under the Public Readiness and Emergency Preparedness Act for Medical Countermeasures Against COVID-19 and Republication of the Declaration*. (88 FR 30769, May 12, 2023). In addition, for purposes of this letter, the term "State" includes any State or Territory of the United States, the District of Columbia, and the Commonwealth of Puerto Rico. See Section 201(a)(1) of the Act.

[42] When used under this EUA, COMIRNATY (COVID-19 Vaccine, mRNA) (2024-2025 Formula) may be administered by a vaccination provider without an individual prescription for each vaccine recipient.

Table 1. Authorized Uses of Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) for Use in Individuals 6 Months Through 4 Years of Age

Number of Previous Doses of Pfizer-BioNTech COVID-19 Vaccine(s)[a]	Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) Vial Cap and Label Border Color	Dosing Regimen, Dose and Schedule[b]
0[c]	Yellow	3 doses[d], 0.3 mL each Dose 1: Week 0 Dose 2: Week 3 Dose 3: ≥ 8 weeks after Dose 2
1	Yellow	2 doses[d], 0.3 mL each Dose 1: 3 weeks after receipt of previous dose of Pfizer-BioNTech COVID-19 Vaccine[a] Dose 2: ≥8 weeks after Dose 1
≥2	Yellow	Single dose, 0.3 mL ≥8 weeks after receipt of the last previous dose of Pfizer-BioNTech COVID-19 Vaccine[a]

a. Previous dose refers to a dose of any prior Pfizer-BioNTech COVID-19 Vaccine that is no longer authorized for use in the United States.
b. For individuals with certain kinds of immunocompromise previously vaccinated with Pfizer-BioNTech COVID-19 vaccines, see text below tables for dosing information.
c. Not previously vaccinated with any COVID-19 vaccine.
d. For individuals turning from 4 to 5 years of age during the vaccination series who have received 1 or 2 doses of Pfizer-BioNTech COVID-19 Vaccine, administer a single dose of Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) supplied in vials with blue caps and labels with blue borders, on or after the date the individual turns5 years of age.

Table 2. Authorized Uses of the Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) for Use in Individuals 5 Through 11 Years of Age Irrespective of COVID-19 Vaccination Status

Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) Vial Cap and Label Border Color	Dosing Regimen, Dose and Schedule[a]
Blue	Single dose, 0.3 mL (If previously vaccinated, administer the dose ≥2 months after receipt of the last previous dose of COVID-19 vaccine)[b]

[a] For individuals with certain kinds of immunocompromise, see text below tables for dosing information.
[b] Previous dose refers to a dose of any prior COVID-19 vaccine that is no longer authorized for use in the United States.

Individuals 6 Months Through 11 Years of Age with Certain Kinds of Immunocompromise

The Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) is authorized for use in individuals 6 months through 11 years of age with certain kinds of immunocompromise,[43] according to the following dosing regimen and schedule:

Complete at least a 3-dose series with an age-appropriate dose and dosing schedule[44,45] of a COVID-19 vaccine, in which at least 1 dose of the series is with a COVID-19 vaccine (2024-2025 Formula).

- If previously not vaccinated, complete the 3-dose series with age-appropriate doses of Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula).
- If previously vaccinated with 1 or 2 dose(s) of a prior Pfizer-BioNTech COVID-19 Vaccine[46] complete the remaining dose(s) in the 3-dose series with age-appropriate doses of Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula).
- If previously vaccinated with 3 or more doses of a prior COVID-19 vaccine[47], administer a single age-appropriate dose of Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) at least 2 months following the last dose.

An age-appropriate additional dose of Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) may be administered at least 2 months following the last dose of a COVID-19 vaccine (2024-2025 Formula).[48,49] Age-appropriate additional doses of Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) may be administered at the discretion of the healthcare provider,

[43] Certain kinds of immunocompromise refers to individuals who have undergone solid organ transplantation, or who are diagnosed with conditions that are considered to have an equivalent level of immunocompromise.

[44] Dosing schedule for immunocompromised individuals 6 months through 4 years of age for Pfizer-BioNTech COVID-19 vaccines: Dose 1: Week 0; Dose 2: Week 3; Dose 3: ≥8 Weeks after Dose 2. For individuals turning from 4 to 5 years of age during the vaccination series, Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) supplied in vials with blue caps and labels with blue borders is authorized to complete the series on or after the date the individual turns 5 years of age.

[45] Dosing schedule for immunocompromised individuals 5 through 11 years of age for Pfizer-BioNTech COVID-19 vaccines: Dose 1: Week 0; Dose 2: Week 3; Dose 3: ≥4 weeks after Dose 2. For individuals turning from 11 to 12 years of age during the vaccination series, COMIRNATY (COVID-19 Vaccine, mRNA) (2024-2025 Formula) is authorized to complete the 3-dose series with 1 or 2 doses, as applicable, on or after the date the individual turns 12 years of age. Accordingly, after the individual turns 12 years of age, the vaccination series is completed with COMIRNATY (COVID-19 Vaccine, mRNA) (2024-2025 Formula), not Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula). Although COMIRNATY (COVID-19 Vaccine, mRNA) (2024-2025 Formula) is approved for certain uses in individuals 12 years of age and older, if the individual turning 12 years of age receives 2 doses of the COMIRNATY vaccine to complete the vaccination series or receives a dose of the COMIRNATY vaccine less than 2 months after receipt of the last previous dose of COVID-19 vaccine to complete the vaccination series, then those uses of the COMIRNATY vaccine are authorized under this EUA.

[46] These prior COVID-19 vaccines are no longer authorized for use in the United States.

[47] These prior COVID-19 vaccines are no longer authorized for use in the United States.

[48] For immunocompromised individuals 6 months through 4 years of age, the last dose of a COVID-19 vaccine (2024-2025 Formula) refers to a dose with Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula).

[49] For immunocompromised individuals 5 through 11 years of age, the last dose of a COVID-19 vaccine (2024-2025 Formula) refers to a dose with Moderna COVID-19 Vaccine (2024-2025 Formula) or Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula).

taking into consideration the individual's clinical circumstances. The timing of the additional doses may be based on the individual's clinical circumstances.

Pfizer-BioNTech COVID-19 Vaccine (2023-2024 Formula)

The Pfizer-BioNTech COVID-19 Vaccine (2023-2024 Formula) is no longer authorized for use in the United States. However, the authorized presentations of the Pfizer-BioNTech COVID-19 Vaccine (2023-2024 Formula) described in Section II of the September 11, 2023 reissuance of this Letter remain authorized when exported from the United States in accordance with Section III.W. Under Section III.W, the Fact Sheets for Pfizer-BioNTech COVID-19 Vaccine (2023-2024 Formula) that were authorized as of September 11, 2023 (Fact Sheet for Recipients and Caregivers) and as of December 8, 2023 (Fact Sheet for Healthcare Providers Administering Vaccine), and that describe the scope of FDA's September 11, 2023 authorization must, upon request, be made available to the regulatory authorities of the country in which the vaccine will be used.

Product Description[50]

The Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) is provided in two presentations:

Table 4: Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) Vial Presentations

Presentation	Authorized age	Dose Volume and Quantity of mRNA	Dilution
Multiple Dose Vials with Yellow Caps and Labels with Yellow Borders	6 months through 4 years of age	0.3 mL dose (each containing 3 mcg modRNA)	Dilute with 1.1 mL sterile 0.9% Sodium Chloride Injection, USP
Single Dose Vials with Blue Caps and Labels with Blue Borders	5 through 11 years of age	0.3 mL dose (each containing 10 mcg modRNA)	Not to be diluted

Multiple dose vials with yellow caps and labels with yellow borders

Each 0.3 mL dose of the Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) is formulated to contain 3 mcg of modRNA encoding the viral spike (S) glycoprotein of SARS-CoV-2 Omicron variant lineage KP.2. Each 0.3 mL dose also includes the following ingredients: lipids (0.04 mg ((4-hydroxybutyl)azanediyl)bis(hexane-6,1-diyl)bis(2-hexyldecanoate), 0.005 mg 2[(polyethylene glycol)-2000]-N,N-ditetradecylacetamide, 0.01 mg 1,2-distearoyl-sn-glycero-3-phosphocholine, and 0.02 mg cholesterol), 9.4 mg sucrose, 0.02 mg tromethamine, and 0.12 mg tromethamine hydrochloride. The diluent (sterile 0.9% Sodium Chloride Injection, USP) contributes

[50] For COMIRNATY (COVID-19 Vaccine, mRNA) (2024-2025 Formula) description, see the COMIRNATY (COVID-19 Vaccine, mRNA) prescribing information, found here: https://www.fda.gov/vaccines-blood-biologics/comirnaty.

1.88 mg sodium chloride per dose. The Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) does not contain a preservative.

Single dose vials with blue caps and labels with blue borders

Each 0.3 mL dose of the Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) is formulated to contain 10 mcg of modRNA encoding the S-glycoprotein of SARS-CoV-2 Omicron variant lineage KP.2. Each 0.3 mL dose also includes the following ingredients: lipids (0.14 mg ((4-hydroxybutyl)azanediyl)bis(hexane-6,1-diyl)bis(2-hexyldecanoate), 0.02 mg 2[(polyethylene glycol)-2000]-N,N-ditetradecylacetamide, 0.03 mg 1,2-distearoyl-sn-glycero-3-phosphocholine, and 0.06 mg cholesterol), 31 mg sucrose, 0.06 mg tromethamine, and 0.4 mg tromethamine hydrochloride. The Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) does not contain a preservative.

The manufacture of the authorized Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) is limited to those facilities identified and agreed upon in Pfizer's request for authorization.

For Pfizer-BioNTech COVID-19 Vaccine (2023-2024 Formula) Section III.W refers to the Fact Sheets for the Pfizer-BioNTech COVID-19 Vaccine (2023-2024 Formula), that were authorized on September 11, 2023 (Fact Sheet for Recipients and Caregivers) and December 8, 2023 (Fact Sheet for Healthcare Providers Administering Vaccine). Those Fact Sheets describe presentations of the Pfizer-BioNTech COVID-19 Vaccine (2023-2024 Formula) that were authorized for use in the United States as of September 11, 2023 and that remain authorized for export in accordance with Section III.W.

The Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) and Pfizer-BioNTech COVID-19 Vaccine (2023-2024 Formula) vial labels and carton labels are clearly marked for "Emergency Use Authorization." The Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) and Pfizer-BioNTech COVID-19 Vaccine (2023-2024 Formula) are authorized to be distributed, stored, further redistributed, and administered when packaged in the authorized manufacturer packaging (i.e., vials and cartons), despite the fact that the vial and carton labels may not contain information that otherwise would be required under the FD&C Act.

Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) is authorized for emergency use with the following product-specific information required to be made available to vaccination providers and recipients, respectively (referred to as "authorized labeling"[51]):

Fact Sheet for Healthcare Providers Administering Vaccine: Emergency Use Authorization of Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula), For 6 Months Through 11 Years of Age

Fact Sheet for Recipients and Caregivers About Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) Which Has Emergency Use Authorization (EUA) to Prevent Coronavirus

[51] This authorized labeling required to be made available to vaccination providers and recipients also contains information about uses of COMIRNATY (COVID-19 Vaccine, mRNA) (2024-2025 Formula) that are authorized under this EUA.

Disease 2019 (COVID-19) in Individuals 6 Months Through 11 Years of Age

I have concluded, pursuant to Section 564(d)(2) of the Act, that it is reasonable to believe that the known and potential benefits of Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula)[52] and Pfizer-BioNTech COVID-19 Vaccine (2023-2024 Formula), when used to prevent COVID-19 and used in accordance with this Scope of Authorization (Section II), outweigh their known and potential risks.

I have concluded, pursuant to Section 564(d)(3) of the Act, based on the totality of scientific evidence available to FDA, that it is reasonable to believe that Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) and Pfizer-BioNTech COVID-19 Vaccine (2023-2024 Formula) may be effective in preventing COVID-19 when used in accordance with this Scope of Authorization (Section II), pursuant to Section 564(c)(2)(A) of the Act.

Having reviewed the scientific information available to FDA, including the information supporting the conclusions described in Section I above, I have concluded that Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) and Pfizer-BioNTech COVID-19 Vaccine (2023-2024 Formula) (as described in this Scope of Authorization (Section II)) meet the criteria set forth in Section 564(c) of the Act concerning safety and potential effectiveness.

The emergency use of Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) and Pfizer-BioNTech COVID-19 Vaccine (2023-2024 Formula) under this EUA must be consistent with, and may not exceed, the terms of the Authorization, including the Scope of Authorization (Section II) and the Conditions of Authorization (Section III). Subject to the terms of this EUA and under the circumstances set forth in the Secretary of HHS's determination under Section 564(b)(1)(C) described above and the Secretary of HHS's corresponding declaration under Section 564(b)(1), Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) and Pfizer-BioNTech COVID-19 Vaccine (2023-2024 Formula) are authorized to prevent COVID-19 as described in the Scope of Authorization (Section II) under this EUA, despite the fact that they do not meet certain requirements otherwise required by applicable federal law.

III. Conditions of Authorization

Pursuant to Section 564 of the Act, I am establishing the following conditions on this authorization:

Pfizer Inc. and Authorized Distributor(s)

A. Pfizer Inc. and authorized distributor(s) will ensure that the authorized labeling (i.e., Fact Sheets) will be made available to vaccination providers, recipients, and caregivers consistent with the terms of this letter.

B. Pfizer Inc. and authorized distributor(s) will ensure that appropriate storage and cold chain is maintained until delivered to healthcare facilities or other vaccine receipt sites.

[52] The conclusions supporting authorization stated in this section (Section II) also apply to COMIRNATY (COVID-19 Vaccine, mRNA) (2024-2025 Formula) when used under this authorization.

C. Pfizer Inc. will ensure that the terms of this EUA are made available to all relevant stakeholders (e.g., authorized distributors and vaccination providers) involved in distributing or receiving authorized Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula). Pfizer Inc. will provide to all relevant stakeholders a copy of this letter of authorization and communicate any subsequent amendments that might be made to this letter of authorization and its authorized labeling.

D. Pfizer Inc. may develop and disseminate instructional and educational materials (e.g., video regarding vaccine handling, storage/cold-chain management, preparation, disposal) that are consistent with the authorized emergency use of Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) as described in the letter of authorization and authorized labeling, without FDA's review and concurrence, when necessary to meet public health needs during an emergency. Any instructional and educational materials that are inconsistent with the authorized labeling are prohibited.

E. Pfizer Inc. may request changes to this authorization, including to the authorized Fact Sheets. Any request for changes to this EUA must be submitted to Office of Vaccines Research and Review (OVRR)/Center for Biologics Evaluation and Research (CBER). Such changes require appropriate authorization prior to implementation.[53]

F. Pfizer Inc. will report to Vaccine Adverse Event Reporting System (VAERS):
   - Serious adverse events (irrespective of attribution to vaccination);
   - Cases of myocarditis;
   - Cases of pericarditis;
   - Cases of Multisystem Inflammatory Syndrome; and
   - Cases of COVID-19 that result in hospitalization or death, that are reported to Pfizer Inc.

   These reports should be submitted to VAERS as soon as possible but no later than 15 calendar days from initial receipt of the information by Pfizer Inc.

G. Pfizer Inc. must submit to Investigational New Drug application (IND) number 19736 periodic safety reports monthly, or at another appropriate interval determined by Office of Biostatistics and Pharmacovigilance (OBPV)/CBER, in accordance with a due date agreed upon with OBPV/CBER beginning after the first full calendar

[53] The following types of revisions may be authorized without reissuing this letter: (1) changes to the authorized labeling; (2) non-substantive editorial corrections to this letter; (3) new types of authorized labeling, including new fact sheets; (4) new carton/container labels; (5) expiration dating extensions; (6) changes to manufacturing processes, including tests or other authorized components of manufacturing; (7) new conditions of authorization to require data collection or study. All changes to the authorization require review and concurrence from OVRR. For changes to the authorization, including the authorized labeling, of the type listed in (3), (6), or (7), review and concurrence is required from the Preparedness and Response Team (PREP)/Office of the Center Director (OD)/CBER and the Office of Counterterrorism and Emerging Threats (OCET)/Office of the Chief Scientist (OCS).

month after authorization. Each periodic safety report is required to contain descriptive information which includes:

- A narrative summary and analysis of adverse events submitted during the reporting interval, including interval and cumulative counts by age groups, special populations (e.g., pregnant women), and adverse events of special interest;
- A narrative summary and analysis of vaccine administration errors, whether or not associated with an adverse event, that were identified since the last reporting interval;
- Newly identified safety concerns in the interval;
- Actions taken since the last report because of adverse experiences (for example, changes made to Healthcare Providers Administering Vaccine (Vaccination Providers) Fact Sheet, changes made to studies or studies initiated); and
- Cumulative doses distributed, and doses distributed during the reporting interval, for Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula).

H. No changes will be implemented to the description of the product, manufacturing process, facilities, or equipment without notification to and concurrence by FDA.

I. All manufacturing facilities will comply with Current Good Manufacturing Practice requirements.

J. Pfizer Inc. will submit to the EUA file Certificates of Analysis (CoA) for each drug product lot at least 48 hours prior to vaccine distribution. The CoA will include the established specifications and specific results for each quality control test performed on the final drug product lot.

K. Pfizer Inc. will submit to the EUA file quarterly manufacturing reports, starting in July 2021, that include a listing of all drug substance and drug product lots produced after issuance of this authorization. This report must include lot number, manufacturing site, date of manufacture, and lot disposition, including those lots that were quarantined for investigation or those lots that were rejected. Information on the reasons for lot quarantine or rejection must be included in the report.

L. Pfizer Inc. and authorized distributor(s) will maintain records regarding release of Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) and Pfizer-BioNTech COVID-19 Vaccine (2023-2024 Formula) for distribution (i.e., lot numbers, quantity, release date).

M. Pfizer Inc. and authorized distributor(s) will make available to FDA upon request any records maintained in connection with this EUA.

N. Pfizer Inc. will conduct post-authorization observational studies to evaluate the association between Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula), Pfizer-BioNTech COVID-19 Vaccine (2023-2024 Formula), Pfizer-

BioNTech COVID-19 Vaccine (Original monovalent), and Pfizer-BioNTech COVID-19 Vaccine, Bivalent, and a pre-specified list of adverse events of special interest, including myocarditis and pericarditis, along with deaths and hospitalizations, and severe COVID-19. The study population should include individuals administered the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) (previously, but no longer authorized for use in the U.S.) as a primary series (6 months of age and older) or booster dose (5 years of age and older); individuals administered a dose of the Pfizer-BioNTech COVID-19 Vaccine, Bivalent (previously, but no longer authorized for use in the U.S.) (6 months of age and older); Pfizer-BioNTech COVID-19 Vaccine (2023-2024 Formula) (6 months through 11 years of age) (previously, but no longer authorized for use in the U.S.); and Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) (6 months through 11 years of age) under this EUA in the general U.S. population, and populations of interest such as healthcare workers, pregnant women, immunocompromised individuals, subpopulations with specific comorbidities. The studies should be conducted in large scale databases with an active comparator. Pfizer Inc. will provide protocols and status update reports to the IND 19736 with agreed-upon study designs and milestone dates.

Vaccination Providers

O. Vaccination providers will administer the vaccines in accordance with this authorization.

P. Vaccination providers will provide the Fact Sheet for Recipients and Caregivers to each individual receiving vaccination and provide the necessary information for receiving their dose(s).

Q. Vaccination providers administering the vaccines must report the following information associated with the administration of the vaccines of which they become aware to VAERS in accordance with the Fact Sheet for Healthcare Providers Administering Vaccine:
   - Vaccine administration errors whether or not associated with an adverse event
   - Serious adverse events (irrespective of attribution to vaccination)
   - Cases of myocarditis
   - Cases of pericarditis
   - Cases of Multisystem Inflammatory Syndrome
   - Cases of COVID-19 that result in hospitalization or death

   Complete and submit reports to VAERS online at https://vaers.hhs.gov/reportevent.html. Vaccination providers submitting VAERS reports should specify the date of birth for the vaccine recipient and the vaccine formula (e.g., "Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) EUA") in the VAERS report. More information is available at vaers.hhs.gov or by calling 1-800-822-7967. To the extent feasible, report to Pfizer Inc. by contacting 1-800-438-1985 or by providing a copy of the VAERS form to Pfizer Inc.; Fax: 1-866-635-8337.

R. Vaccination providers will conduct any follow-up requested by the U.S government, including CDC, FDA, or other designee, regarding adverse events to the extent feasible given the emergency circumstances.

S. Vaccination providers will ensure that any records associated with this EUA are maintained until notified by FDA. Such records will be made available to CDC, and FDA for inspection upon request.

T. Vaccination providers receiving authorized Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) will ensure that appropriate storage and cold chain is maintained.

Conditions Related to Printed Matter, Advertising, and Promotion

U. All descriptive printed matter, advertising, and promotional material, relating to the use of the Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) shall be consistent with the authorized labeling, as well as the terms set forth in this EUA, and meet the requirements set forth in Section 502(a) and (n), as applicable, of the FD&C Act and FDA implementing regulations. In addition, such materials shall:
   - Be tailored to the intended audience.
   - Present the same risk information relating to the major side effects and contraindications concurrently in the audio and visual parts of the presentation for advertising and promotional materials in audio-visual format.
   - Be accompanied by the authorized labeling, if the promotional materials are not subject to Section 502(n) of the Act.

   Pfizer Inc. must submit such materials to FDA accompanied by Form FDA-2253 by the time of initial dissemination or first use.

V. All descriptive printed matter, advertising, and promotional material relating to the use of the Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) clearly and conspicuously shall state that:
   - The Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) has not been approved or licensed by FDA, but has been authorized for emergency use by FDA, under an EUA to prevent Coronavirus Disease 2019 (COVID-19) for use in individuals 6 months through 11 years of age; and
   - The emergency use of this product is only authorized for the duration of the declaration that circumstances exist justifying the authorization of emergency use of the medical product under Section 564(b)(1) of the FD&C Act unless the declaration is terminated or authorization revoked sooner.

   If the Agency notifies Pfizer Inc. that any descriptive printed matter, advertising, or promotional materials do not meet the terms set forth in Conditions U and V of this EUA, Pfizer Inc. must cease distribution of such descriptive printed

matter, advertising, or promotional materials in accordance with the Agency's notification. Furthermore, as part of its notification, the Agency may also require Pfizer Inc. to issue corrective communication(s).

Condition Related to Export

W. If the Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) is exported from the United States, conditions C, D, and O through V do not apply, but export is permitted only if 1) the regulatory authorities of the country in which the vaccine will be used are fully informed that this vaccine is subject to an EUA and is not approved or licensed by FDA and 2) the intended use of the vaccine will comply in all respects with the laws of the country in which the product will be used. The requirement in this letter that the authorized labeling (i.e., Fact Sheets) be made available to vaccination providers, recipients, and caregivers in condition A will not apply if the authorized labeling (i.e., Fact Sheets) are made available to the regulatory authorities of the country in which the vaccine will be used.

If the Pfizer-BioNTech COVID-19 Vaccine (2023-2024 Formula) is exported from the United States, conditions C, D, and O through V do not apply, but export is permitted only if 1) the vaccine was manufactured on or before August 22, 2024, 2) the regulatory authorities of the country in which the vaccine will be used are fully informed that this vaccine is subject to an EUA and is not approved or licensed by FDA, 3) the intended use of the vaccine will comply in all respects with the laws of the country in which the product will be used, 4) the Fact Sheets that were authorized as of September 11, 2023 (Fact Sheet for Recipients and Caregivers) and as of December 8, 2023 (Fact Sheet for Healthcare Providers Administering Vaccine) are made available, upon request, to the regulatory authorities of the countries in which the vaccine will be used, and 5) the regulatory authorities are informed that the Pfizer-BioNTech COVID-19 Vaccine (2023-2024 Formula) and associated Fact Sheets are no longer authorized for use in the United States and that FDA is not currently revising the Fact Sheets with updated information.

Condition with Respect to Use of Licensed Product

X. This authorization also covers the use of the licensed COMIRNATY (COVID-19 Vaccine, mRNA) (2024-2025 Formula) product in certain immunocompromised individuals turning from 11 to 12 years of age during the vaccination series, as described in Scope of Authorization (Section II) under this EUA. Conditions A through U in this letter apply when COMIRNATY (COVID-19 Vaccine, mRNA) (2024-2025 Formula) is provided for the uses described in this subsection III.X, except that 1) product manufactured, and labeled in accordance with the approved BLA is deemed to satisfy the manufacturing, labeling, and distribution requirements of this authorization; and 2) product lots that are released in accordance with the approved BLA are deemed to satisfy the requirement of this authorization for submission of CoAs to the EUA 48 hours prior to lot distribution.

IV. Duration of Authorization

This EUA will be effective until the declaration that circumstances exist justifying the authorization of the emergency use of drugs and biological products during the COVID-19 pandemic is terminated under Section 564(b)(2) of the Act or the EUA is revoked under Section 564(g) of the Act.

Sincerely,

_____
Peter Marks, M.D., Ph.D.
Director
Center for Biologics Evaluation and Research

Enclosures

EXHIBIT B

Fact Sheet for Healthcare Providers Administering Vaccine

(Starts on Following Page)

Individuals using assistive technology may not be able to fully access the information contained in this file. For assistance, please call 800-835-4709 or 240-402-8010, extension 1. CBER Consumer Affairs Branch or send an e-mail to: ocod@fda.hhs.gov and include 508 Accommodation and the title of the document in the subject line of your e-mail.

FACT SHEET FOR HEALTHCARE PROVIDERS ADMINISTERING VACCINE: EMERGENCY USE AUTHORIZATION OF PFIZER-BIONTECH COVID-19 VACCINE (2024−2025 FORMULA), FOR 6 MONTHS THROUGH 11 YEARS OF AGE

HIGHLIGHTS OF EMERGENCY USE AUTHORIZATION (EUA)
These highlights of the EUA do not include all the information needed to use Pfizer-BioNTech COVID-19 Vaccine under the EUA. See the FULL FACT SHEET FOR HEALTHCARE PROVIDERS for Pfizer-BioNTech COVID-19 Vaccine.

Pfizer-BioNTech COVID-19 Vaccine suspension for injection, for intramuscular use.
2024−2025 Formula
Original EUA Authorized Date: 12/2020
Most Recent EUA Authorized Date: 8/2024

----------RECENT MAJOR CHANGES----------
Dosage and Administration, Preparation for Administration (2.1) 9/2023
Dosage and Administration, Administration (2.2) 9/2023
Dosage and Administration, Dose and Schedule (2.3) 9/2023

----------EMERGENCY USE AUTHORIZATION----------
The U.S. Food and Drug Administration (FDA) has issued an Emergency Use Authorization (EUA) for the emergency use of Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) for active immunization to prevent coronavirus disease 2019 (COVID−19) caused by severe acute respiratory syndrome coronavirus 2 (SARS−CoV−2) in individuals 6 months through 11 years of age. (1)

The Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula), which is supplied in multiple dose vials with yellow caps and labels with yellow borders and in single dose vials with blue caps and labels with blue borders, is not licensed for any use. (1)

See Full Fact Sheet for Healthcare Providers for the justification for emergency use of Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula), information on available alternatives, and additional information on COVID-19.

---------- DOSAGE AND ADMINISTRATION ----------
For intramuscular injection only. (2)

Individuals 6 Months Through 4 Years of Age by Pfizer-BioNTech COVID-19 Vaccination Status

Number of Previous Doses of Pfizer-BioNTech COVID-19 Vaccine(s)[a]	Pfizer-BioNTech COVID-19 Vaccine, (2024-2025 Formula) Vial Cap and Label Border Color	Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) Dosing Regimen, Dose and Schedule[b]
0[c]	Yellow	3 doses[d], 0.3 mL each Dose 1: Week 0 Dose 2: Week 3 Dose 3: ≥8 weeks after Dose 2
1	Yellow	2 doses[d], 0.3 mL each Dose 1: 3 weeks after receipt of the previous dose of Pfizer-BioNTech COVID-19 Vaccine[a] Dose 2: ≥8 weeks after Dose 1
≥2	Yellow	Single dose, 0.3 mL ≥8 weeks after receipt of the last previous dose of Pfizer-BioNTech COVID-19 Vaccine[a]

a. Previous dose refers to a dose of any prior Pfizer-BioNTech COVID-19 Vaccine that is no longer authorized for use in the United States.
b. For individuals with certain kinds of immunocompromise previously vaccinated with Pfizer-BioNTech COVID-19 vaccines, see text below tables for dosing information.
c. Not previously vaccinated with any COVID-19 vaccine.
d. For individuals turning from 4 to 5 years of age during the vaccination series who have received 1 or 2 doses of Pfizer-BioNTech COVID-19 Vaccine, administer a single dose of Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) supplied in vials with blue caps and labels with blue borders, on or after the date the individual turns 5 years of age.

Individuals 5 Years Through 11 years of Age Irrespective of COVID-19 Vaccination Status

Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) Vial Cap and Label Border Color	Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) Dosing Regimen, Dose and Schedule[a]
Blue	Single dose, 0.3 mL (If previously vaccinated, administer the dose ≥2 months after receipt of the last previous dose of COVID-19 vaccine)[b]

a. For individuals with certain kinds of immunocompromise, see text below tables for dosing information.
b. Previous dose refers to a dose of any prior COVID-19 vaccine that is no longer authorized for use in the United States.

Individuals with Certain Kinds of Immunocompromise

Individuals 6 months through 11 years of age with certain kinds of immunocompromise should complete at least a 3-dose series with an age-appropriate dose and dosing schedule of a COVID-19 vaccine. At least 1 dose should be with a COVID-19 vaccine (2024-2025 Formula). Certain kinds of immunocompromise refers to individuals who have undergone solid organ transplantation, or who are diagnosed with conditions that are considered to have an equivalent level of immunocompromise. (2.3)

---------- DOSAGE FORMS AND STRENGTHS ----------
Pfizer-BioNTech COVID-19 Vaccine is a suspension for injection. A single dose is 0.3 mL. (3)

----------CONTRAINDICATIONS----------
History of a severe allergic reaction (e.g., anaphylaxis) to any component of the Pfizer-BioNTech COVID-19 Vaccine or following a previous dose of a Pfizer-BioNTech COVID-19 Vaccine. (4)

---------- WARNINGS AND PRECAUTIONS ----------
Postmarketing data with authorized or approved mRNA COVID-19 vaccines demonstrate increased risks of myocarditis and pericarditis, particularly within the first week following vaccination. For the Pfizer-BioNTech COVID-19 Vaccine, the observed risk is highest in males 12 through 17 years of age. (5.2)

---------- ADVERSE REACTIONS ----------
Solicited adverse reactions included:
- 6 months through 23 months of age: Injection site redness; swelling and tenderness; decreased appetite; drowsiness; fever; irritability. (6.1)
- 2 through 11 years of age: Injection site pain; redness and swelling; chills; diarrhea; fatigue; fever; headache; new or worsened joint pain; new or worsened muscle pain; vomiting. (6.1)

Vaccination providers must report all vaccine administration errors, all serious adverse events, cases of myocarditis, cases of pericarditis, cases of Multisystem Inflammatory Syndrome (MIS), and cases of COVID-19 that result in hospitalization or death following administration of Pfizer-BioNTech COVID-19 Vaccine (2024−2025 Formula) to the Vaccine Adverse Event Reporting System (VAERS) by submitting online at https://vaers.hhs.gov/reportevent.html. For further assistance with reporting to VAERS call 1-800-822-7967. The reports should include the words "Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) EUA" in the description section of the report. To the extent feasible, report adverse events to Pfizer 1-800-438-1985 or provide a copy of the VAERS form to Pfizer https://www.pfizersafetyreporting.com/ (6.3)

See FACT SHEET FOR RECIPIENTS AND CAREGIVERS.

TABLE OF CONTENTS*

* Sections or subsections omitted from the EUA are not listed

FULL FACT SHEET FOR HEALTHCARE PROVIDERS

1 EMERGENCY USE AUTHORIZATION

The U.S. Food and Drug Administration (FDA) has issued an Emergency Use Authorization (EUA) for the emergency use of Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) for active immunization to prevent coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in individuals 6 months through 11 years of age.

Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula), which is supplied in multiple dose vials with yellow caps and labels with yellow borders, and in single dose vials with blue caps and labels with blue borders, is not licensed for any use.

Justification for Emergency Use of Vaccines During the COVID-19 Pandemic

There is currently an outbreak of COVID-19 caused by SARS-CoV-2. The Secretary of the Department of Health and Human Services (HHS) has:

- Determined that there is a public-health emergency, or a significant potential for a public-health emergency, related to COVID-19.[1]
- Declared that circumstances exist justifying the authorization of emergency use of drugs and biological products during the COVID-19 pandemic.[2]

An EUA is an FDA authorization for the emergency use of an unapproved product or unapproved use of an approved product (i.e., drug, biological product, or device) in the United States under certain circumstances including, but not limited to, when the Secretary of HHS declares that use of EUA authority is justified, based on a determination that there is a public-health emergency, or a significant potential for a public-health emergency, that affects, or has a significant potential to affect, national security or the health and security of United States citizens living abroad, and that involves biological agent(s) or a disease or condition that may be attributable to such agent(s). Criteria for issuing an EUA include:

- The biological agent(s) can cause a serious or life-threatening disease or condition;

[1] *See* U.S. Department of Health and Human Services, Determination of a Public Health Emergency and Declaration that Circumstances Exist Justifying Authorizations Pursuant to Section 564(b) of the Federal Food, Drug, and Cosmetic Act, 21 U.S.C. § 360bbb-3. February 4, 2020; https://www.federalregister.gov/documents/2020/02/07/2020-02496/determination-of-public-health-emergency. *See also* U.S. Department of Health and Human Services, Amended Determination of a Public Health Emergency or Significant Potential for a Public Health Emergency Pursuant to Section 564(b) of the Federal Food, Drug, and Cosmetic Act, 21 U.S.C. § 360bbb-3(b). March 15, 2023 ("Amended Determination"); https://www.federalregister.gov/documents/2023/03/20/2023-05609/covid-19-emergency-use-authorization-declaration.

[2] *See* U.S. Department of Health and Human Services, Declaration that Circumstances Exist Justifying Authorizations Pursuant to Section 564(b) of the Federal Food, Drug, and Cosmetic Act, 21 U.S.C. § 360bbb-3, 85 FR 18250 (April 1, 2020); https://www.federalregister.gov/documents/2020/04/01/2020-06905/emergency-use-authorization-declaration. *See also* Amended Determination ("The declarations issued pursuant to section 564(b)(1) of the FD&C Act that circumstances exist justifying the authorization of emergency use of certain in vitro diagnostics, personal respiratory protective devices, other medical devices and drugs and biological products, as set forth in those declarations, and that are based on the February 4, 2020 determination, remain in effect until those declarations are terminated in accordance with section 564 of the FD&C Act.").

- Based on the totality of the available scientific evidence (including data from adequate and well-controlled clinical trials, if available), it is reasonable to believe that:
  - The product may be effective in diagnosing, treating, or preventing the serious or life-threatening disease or condition;
  - The known and potential benefits of the product - when used to diagnose, prevent, or treat such disease or condition - outweigh the known and potential risks of the product, taking into consideration the material threat posed by the biological agent(s); and
- There is no adequate, approved, and available alternative to the product for diagnosing, preventing, or treating the serious or life-threatening disease or condition.

Information Regarding Available Alternative Vaccines for the Prevention of COVID-19 in Individuals 6 Months Through 11 Years of Age

There may be clinical trials or availability under EUA of other COVID-19 vaccines, including vaccines that contain or encode the spike protein of the SARS-CoV-2 Omicron variant lineage KP.2.

2 DOSAGE AND ADMINISTRATION

For intramuscular injection only.

2.1 Preparation for Administration

There are 2 presentations of Pfizer-BioNTech COVID-19 Vaccine:

Vial Cap and Vial Label Border Color	Age of Recipient	Vial Type	Dilution Required
Yellow	6 months through 4 years of age	Multiple dose	Yes
Blue	5 through 11 years of age	Single dose	No

Pfizer-BioNTech COVID-19 Vaccine vials contain a frozen suspension that does not contain a preservative and must be thawed prior to administration.

If vials are frozen, they must be thawed prior to use [for thawing instructions, see *How Supplied/Storage and Handling (16)*].

For multiple dose vials with yellow caps and labels with yellow borders:

- **Dilute** prior to use:
  - Verify that the vial states 2024-2025 Formula.
  - Check the contents of the vial during preparation. The liquid should be clear to slightly opalescent with no visible particles. Do not use if liquid is discolored or if particles are observed.
  - Add 1.1 mL of sterile 0.9% Sodium Chloride Injection, USP into the vaccine vial.
  - Before removing the needle from the vial, equalize vial pressure by withdrawing air into the empty diluent syringe.
  - Gently invert the vaccine vial 10 times to mix. Do not shake.
  - Record the date and time of dilution on the vial label.
  - Store at 2ºC to 25°C (35°F to 77°F) and discard after 12 hours.

- After dilution, multiple-dose vials contain 3 doses of 0.3 mL each.
- If the amount of vaccine in the vial cannot provide a full dose of 0.3 mL, discard the vial and any excess volume. Do not pool excess vaccine from multiple vials.

For single dose vials with blue caps and labels with blue borders:

- Verify that the vial states 2024-2025 Formula.
- **Do Not Dilute.**
- Prior to withdrawing the dose, mix by inverting the vial gently 10 times. Do not shake.
- Withdraw a single 0.3 mL dose.
- Discard vial and any excess volume.

2.2 Administration

Parenteral drug products should be inspected visually for particulate matter and discoloration prior to administration, whenever solution and container permit. The vaccine should be clear to slightly opalescent suspension. Do not administer if vaccine is discolored or contains particulate matter.

Administer a single 0.3 mL dose intramuscularly.

2.3 Dose and Schedule

Individuals 6 Months Through 4 Years of Age by Pfizer-BioNTech COVID-19 Vaccination Status

Number of Previous Doses of Pfizer-BioNTech COVID-19 Vaccine(s)[a]	Pfizer-BioNTech COVID-19 Vaccine, (2024-2025 Formula) Vial Cap and Label Border Color	Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) Dosing Regimen, Dose and Schedule[b]
0[c]	Yellow	3 doses[d], 0.3 mL each Dose 1: Week 0 Dose 2: Week 3 Dose 3: ≥8 weeks after Dose 2
1	Yellow	2 doses[d], 0.3 mL each Dose 1: 3 weeks after receipt of the previous dose of Pfizer-BioNTech COVID-19 Vaccine[a] Dose 2: ≥8 weeks after Dose 1
≥2	Yellow	Single dose, 0.3 mL ≥8 weeks after receipt of the last previous dose of Pfizer-BioNTech COVID-19 Vaccine[a]

a. Previous dose refers to a dose of any prior Pfizer-BioNTech COVID-19 Vaccine that is no longer authorized for use in the United States.
b. For individuals with certain kinds of immunocompromise previously vaccinated with Pfizer-BioNTech COVID-19 vaccines, see text below tables for dosing information.
c. Not previously vaccinated with any COVID-19 vaccine.
d. For individuals turning from 4 to 5 years of age during the vaccination series who have received 1 or 2 doses of Pfizer-BioNTech COVID-19 Vaccine, administer a single dose of Pfizer-BioNTech COVID-19 Vaccine (2024-2025

Formula) supplied in vials with blue caps and labels with blue borders, on or after the date the individual turns 5 years of age.

Individuals 5 Years Through 11 years of Age Irrespective of COVID-19 Vaccination Status

Pfizer-BioNTech COVID-19 Vaccine (2024−2025 Formula) Vial Cap and Label Border Color	Pfizer-BioNTech COVID-19 Vaccine (2024−2025 Formula) Dosing Regimen, Dose and Schedule[a]
Blue	Single dose, 0.3 mL (If previously vaccinated, administer the dose ≥2 months after receipt of the last previous dose of COVID-19 vaccine)[b]

a. For individuals with certain kinds of immunocompromise, see text below tables for dosing information.
b. Previous dose refers to a dose of any prior COVID-19 vaccine that is no longer authorized for use in the United States.

Individuals 6 Months Through 11 Years of Age with Certain Kinds of Immunocompromise

Individuals 6 months through 11 years of age with certain kinds of immunocompromise[3] should complete at least a 3-dose series with an age-appropriate dose and dosing schedule[4,5] of a COVID-19 vaccine. At least 1 dose should be with a COVID-19 vaccine (2024-2025 Formula).

- If previously not vaccinated, complete the 3-dose series with age-appropriate doses of Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula).
- If previously vaccinated with 1 or 2 dose(s) of a prior Pfizer-BioNTech COVID-19 Vaccine[6], complete the remaining dose(s) in the 3-dose series with age-appropriate doses of Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula).
- If previously vaccinated with 3 or more doses of a prior COVID-19 vaccine[6], administer a single age-appropriate dose of Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) at least 2 months following the last dose.

3 Certain kinds of immunocompromise refers to individuals who have undergone solid organ transplantation, or who are diagnosed with conditions that are considered to have an equivalent level of immunocompromise.

4 Dosing schedule for immunocompromised individuals 6 months through 4 years of age for Pfizer-BioNTech COVID-19 vaccines: Dose 1: Week 0; Dose 2: Week 3; Dose 3: ≥8 Weeks after Dose 2. For individuals turning from 4 to 5 years of age during the vaccination series, complete the series with doses of Pfizer-BioNTech COVID-19 Vaccine (2024−2025 Formula) supplied in vials with blue caps and labels with blue borders on or after the date the individual turns 5 years of age.

5 Dosing schedule for immunocompromised individuals 5 through 11 years of age for Pfizer-BioNTech COVID-19 vaccines: Dose 1: Week 0; Dose 2: Week 3; Dose 3: ≥4 weeks after Dose 2. For individuals turning from 11 to 12 years of age during the vaccination series, complete the 3-dose series with 1 or 2 doses, as applicable, of COMIRNATY (COVID-19 Vaccine, mRNA) (2024-2025 Formula) on or after the date the individual turns 12 years of age. If the individual turning 12 years of age receives 2 doses of COMIRNATY (COVID-19 Vaccine, mRNA) (2024-2025 Formula) to complete the vaccination series or receives a dose of COMIRNATY (COVID−19 Vaccine, mRNA) (2024-2025 Formula) less than 2 months after receipt of the last previous dose of COVID-19 vaccine to complete the vaccination series, then those uses of COMIRNATY (COVID-19 Vaccine, mRNA) (2024-2025 Formula) are authorized under EUA. The FDA has authorized under EUA these uses of COMIRNATY (COVID-19 Vaccine, mRNA) (2024-2025 Formula), which is an FDA-licensed vaccine indicated for active immunization to prevent COVID-19 in individuals 12 years of age and older. Refer to https://www.cvdvaccine.com for additional information about COMIRNATY (COVID-19 Vaccine, mRNA) (2024-2025 Formula).

6 These prior COVID-19 vaccines are no longer authorized for use in the United States.

An age-appropriate additional dose of Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) may be administered at least 2 months following the last dose of a COVID-19 vaccine (2024-2025 Formula).[7,8] Age-appropriate additional doses of Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) may be administered at the discretion of the healthcare provider, taking into consideration the individual's clinical circumstances. The timing of the additional doses may be based on the individual's clinical circumstances.

3 DOSAGE FORMS AND STRENGTHS

Pfizer-BioNTech COVID-19 Vaccine is a suspension for injection.

A single dose is 0.3 mL.

4 CONTRAINDICATIONS

Do not administer Pfizer-BioNTech COVID-19 Vaccine to individuals with a history of a severe allergic reaction (e.g., anaphylaxis) to any component of the Pfizer-BioNTech COVID-19 Vaccine *[see Description (11)]* or to individuals who had a severe allergic reaction (e.g., anaphylaxis) following a previous dose of a Pfizer-BioNTech COVID-19 Vaccine.

5 WARNINGS AND PRECAUTIONS

5.1 Management of Acute Allergic Reactions

Appropriate medical treatment must be immediately available to manage potential anaphylactic reactions following administration of Pfizer-BioNTech COVID-19 Vaccine.

Monitor Pfizer-BioNTech COVID-19 Vaccine recipients for the occurrence of immediate adverse reactions according to the Centers for Disease Control and Prevention (CDC) guidelines (https://www.cdc.gov/vaccines/covid-19/clinical-considerations/managing-anaphylaxis.html).

5.2 Myocarditis and Pericarditis

Postmarketing data with authorized or approved mRNA COVID-19 vaccines demonstrate increased risks of myocarditis and pericarditis, particularly within the first week following vaccination. For the Pfizer-BioNTech COVID-19 Vaccine, the observed risk is highest in males 12 through 17 years of age. Although some cases required intensive care support, available data from short-term follow-up suggest that most individuals have had resolution of symptoms with conservative management. Information is not yet available about potential long-term sequelae.

The CDC has published considerations related to myocarditis and pericarditis after vaccination, including for vaccination of individuals with a history of myocarditis or pericarditis (https://www.cdc.gov/vaccines/covid-19/clinical-considerations/myocarditis.html).

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[7] For immunocompromised individuals 6 months through 4 years of age, the last dose of a COVID-19 vaccine (2024-2025 Formula) refers to a dose with Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula).

[8] For immunocompromised individuals 5 through 11 years of age, the last dose of a COVID-19 vaccine (2024-2025 Formula) refers to a dose with Moderna COVID-19 Vaccine (2024-2025 Formula) or Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula).

5.3 Syncope

Syncope (fainting) may occur in association with administration of injectable vaccines. Procedures should be in place to avoid injury from fainting.

5.4 Altered Immunocompetence

Immunocompromised persons, including individuals receiving immunosuppressive therapy, may have a diminished response to Pfizer-BioNTech COVID-19 Vaccine.

5.5 Limitations of Vaccine Effectiveness

Pfizer-BioNTech COVID-19 Vaccine may not protect all vaccine recipients.

6 ADVERSE REACTIONS

An overview of clinical studies contributing to the safety assessment of Pfizer-BioNTech COVID-19 Vaccine in individuals 6 months through 11 years of age is provided in Table 1. Participants in these clinical studies received a 2- or 3-dose initial series depending on age, with 3 weeks between Dose 1 and Dose 2 and 8 weeks between Dose 2 and Dose 3 (referred to as a primary series) and subsequent doses (referred to as booster dose(s)).

Table 1: Clinical Studies

Study	Age Group	Vaccine Strain Composition	Dosing	Number of Participants
Primary Series				
Study 1 (NCT04380701)	18 through 55 years	Original[a]	Primary series	60
Study 2 (NCT04368728)	12 through 15 years	Original[a]	Primary series	1131[b]
	≥16 years	Original[a]	Primary series	21720[b]
Study 3 (NCT04816643)	5 through 11 years	Original[a]	Primary series	3109
	2 through 4 years	Original[a]	Primary series	606
	6 through 23 months	Original[a]	Primary series	386
Booster Dose				
Study 2 (NCT04368728)	18 through 55 years	Original[a]	1st booster	306
Study 3 (NCT04816643)	5 through 11 years	Original[a]	1st booster	401
Study 5 (NCT05472038)	≥12 years of age	Original and Omicron BA.4/BA.5[c]	2nd booster	316

Study	Age Group	Vaccine Strain Composition	Dosing	Number of Participants
Study 6 (NCT05543616)	5 through 11 years	Original and Omicron BA.4/BA.5[c]	2nd booster	113
	2 through 4 years	Original and Omicron BA.4/BA.5[c]	1st booster (4th dose)	36
	6 through 23 months	Original and Omicron BA.4/BA.5[c]	1st booster (4th dose)	24
Study 4 (NCT04955626)	>55 years	Original[a] and Original and Omicron BA.1[d]	2nd booster	610

Abbreviation: SARS-CoV-2 = severe acute respiratory syndrome coronavirus 2.

a. Vaccine encoding the viral spike (S) glycoprotein of SARS-CoV-2 Wuhan-Hu-1 strain (Original).
b. Received the vaccine during placebo-control period.
c. Vaccine encoding the viral spike (S) glycoprotein of SARS-CoV-2 Wuhan-Hu-1 strain (Original) and Omicron variant lineages BA.4 and BA.5 (Omicron BA.4/BA.5), previously authorized as Pfizer-BioNTech COVID-19 Vaccine, Bivalent.
d. Vaccine encoding the viral spike (S) glycoprotein of SARS-CoV-2 Wuhan-Hu1 strain (Original) and Omicron variant lineage BA.1 (not authorized or approved in the U.S.).

The safety data accrued with the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent, no longer authorized for use in the U.S.), Pfizer-BioNTech's bivalent COVID-19 Vaccine (Original and Omicron BA.1) [not authorized or approved in the U.S., hereafter referred to as bivalent vaccine (Original and Omicron BA.1)] and Pfizer-BioNTech COVID-19 Vaccine, Bivalent (Original and Omicron, BA.4/BA.5) [no longer authorized for use in the U.S.] are relevant to Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) because these vaccines are manufactured using the same process.

6.1 Clinical Trials Experience

Because clinical trials are conducted under widely varying conditions, adverse reaction rates observed in the clinical trials of a vaccine cannot be directly compared with rates in the clinical trials of another vaccine and may not reflect the rates observed in practice.

Pfizer-BioNTech COVID-19 Vaccine (Original Monovalent)

The safety of a primary series Pfizer-BioNTech COVID-19 Vaccine was evaluated in participants 6 months of age and older in 3 clinical studies conducted in the United States, Europe, Turkey, South Africa and South America.

Study BNT162-01 (Study 1) was a Phase 1/2, 2-part, dose-escalation trial that enrolled 60 participants, 18 through 55 years of age. Study C4591001 (Study 2) is a Phase 1/2/3, multicenter, multinational, randomized, saline placebo-controlled, observer-blind, dose finding, vaccine candidate-selection (Phase 1) and efficacy (Phase 2/3) study that has enrolled approximately 46,000 participants, 12 years of age and older. Of these, approximately 43,448 participants [21,720 Pfizer-BioNTech COVID-19 Vaccine (30 mcg modRNA); 21,728 placebo] in Phase 2/3 are 16 years of age or older (including 138 and 145 participants 16 and 17 years of age in the vaccine and placebo groups, respectively) and 2,260 participants are 12 through 15 years of age (1,131 and

1,129 in the vaccine and placebo groups, respectively). Study C4591007 (Study 3) is a Phase 1/2/3 multicenter, randomized, dose finding, open-label (Phase 1) and multinational, saline placebo-controlled, observer-blind, immunogenicity and efficacy (Phase 2/3) study that has enrolled 4,695 participants 5 through 11 years of age, of whom 3,109 participants received Pfizer-BioNTech COVID-19 Vaccine (10 mcg modRNA) and 1,538 participants received placebo in Phase 2/3. Study 3 also enrolled 1,776 participants 6 through 23 months of age, of whom 1,178 participants were in the Pfizer-BioNTech COVID-19 Vaccine (3 mcg modRNA) group and 598 participants in the placebo group; and also enrolled 2,750 participants 2 through 4 years of age, of whom 1,835 participants were in the Pfizer-BioNTech COVID-19 Vaccine group and 915 participants in the placebo group in Phase 2/3.

In Study 2 and Study 3, all participants 6 months through 4 years of age, 5 through 11 years of age, 12 through 15 years of age, and a subset of participants 16 years of age and older, were monitored for solicited local and systemic reactions and use of antipyretic medication after each vaccination in an electronic diary. Participants are being monitored for unsolicited adverse events, including serious adverse events, throughout the study [from Dose 1 through 1 month after the last vaccination (all unsolicited adverse events) or 6 months (serious adverse events) after the last vaccination].

Pfizer-BioNTech COVID-19 Vaccine (Original Monovalent) Administered as a Primary Series

Participants 16 Years of Age and Older (2-Dose Primary Series)

At the time of the analysis of Study 2 for the EUA, 37,586 [18,801 Pfizer-BioNTech COVID-19 Vaccine (30 mcg modRNA) and 18,785 placebo] participants 16 years of age or older had been followed for a median of 2 months after the second dose.

The safety evaluation in Study 2 is ongoing. The safety population includes participants 16 years of age and older enrolled by October 9, 2020, and includes safety data accrued through November 14, 2020.

Demographic characteristics in Study 2 were generally similar with regard to age, gender, race, and ethnicity among participants who received Pfizer-BioNTech COVID-19 Vaccine and those who received placebo. Overall, among the total participants who received either the Pfizer-BioNTech COVID-19 Vaccine or placebo, 50.6% were male and 49.4% were female, 83.1% were White, 9.1% were Black or African American, 28.0% were Hispanic/Latino, 4.3% were Asian, and 0.5% were American Indian/Alaska Native.

Unsolicited Adverse Events

Serious Adverse Events
In Study 2, among participants 16 through 55 years of age who had received at least 1 dose of vaccine or placebo (Pfizer-BioNTech COVID-19 Vaccine = 10,841; placebo = 10,851), serious adverse events from Dose 1 through up to 30 days after Dose 2 in ongoing follow-up were reported by 0.4% of Pfizer-BioNTech COVID-19 Vaccine recipients and by 0.3% of placebo recipients. In a similar analysis, in participants 56 years of age and older (Pfizer-BioNTech COVID-19 Vaccine = 7,960, placebo = 7,934), serious adverse events were reported by 0.8% of Pfizer-BioNTech COVID-19 Vaccine recipients and by 0.6% of placebo recipients who received at least 1 dose of Pfizer-BioNTech COVID-19 Vaccine or placebo, respectively. In these analyses, 91.6% of study participants had at least 30 days of follow-up after Dose 2.

Appendicitis was reported as a serious adverse event for 12 participants, and numerically higher in the vaccine group, 8 vaccine participants and 4 placebo participants. Currently available information is insufficient to determine a causal relationship with the vaccine. There were no other notable patterns or numerical imbalances between treatment groups for specific categories of serious adverse events (including neurologic, neuro-inflammatory, and thrombotic events) that would suggest a causal relationship to Pfizer-BioNTech COVID-19 Vaccine.

Non-Serious Adverse Events
In Study 2 in which 10,841 participants 16 through 55 years of age received Pfizer-BioNTech COVID-19 Vaccine and 10,851 participants received placebo, non-serious adverse events from Dose 1 through up to 30 days after Dose 2 in ongoing follow-up were reported in 29.3% of participants who received Pfizer-BioNTech COVID-19 Vaccine and 13.2% of participants in the placebo group, for participants who received at least 1 dose. Overall, in a similar analysis in which 7,960 participants 56 years of age and older received Pfizer-BioNTech COVID-19 Vaccine, non-serious adverse events within 30 days were reported in 23.8% of participants who received Pfizer-BioNTech COVID-19 Vaccine and 11.7% of participants in the placebo group, for participants who received at least 1 dose. In these analyses, 91.6% of study participants had at least 30 days of follow-up after Dose 2.

The higher frequency of reported unsolicited non-serious adverse events among Pfizer-BioNTech COVID-19 Vaccine recipients compared to placebo recipients was primarily attributed to local and systemic adverse events reported during the first 7 days following vaccination that are consistent with adverse reactions solicited among participants in the reactogenicity subset. From Dose 1 through 30 days after Dose 2, reports of lymphadenopathy were imbalanced with notably more cases in the Pfizer-BioNTech COVID-19 Vaccine group (64) vs. the placebo group (6), which is plausibly related to vaccination. Throughout the safety follow-up period to date, Bell's palsy (facial paralysis) was reported by 4 participants in the Pfizer-BioNTech COVID-19 Vaccine group. Onset of facial paralysis was Day 37 after Dose 1 (participant did not receive Dose 2) and Days 3, 9, and 48 after Dose 2. No cases of Bell's palsy were reported in the placebo group. Currently available information is insufficient to determine a causal relationship with the vaccine. There were no other notable patterns or numerical imbalances between treatment groups for specific categories of non-serious adverse events (including other neurologic or neuro-inflammatory, and thrombotic events) that would suggest a causal relationship to Pfizer-BioNTech COVID-19 Vaccine.

Participants 12 Through 15 Years of Age (2-Dose Primary Series)

In an analysis of Study 2, based on data up to the cutoff date of March 13, 2021, 2,260 participants (1,131 Pfizer-BioNTech COVID-19 Vaccine (30 mcg modRNA); 1,129 placebo) were 12 through 15 years of age. Of these, 1,308 (660 Pfizer-BioNTech COVID-19 Vaccine and 648 placebo) participants have been followed for at least 2 months after the second dose. The safety evaluation in Study 2 is ongoing.

Demographic characteristics in Study 2 were generally similar with regard to age, gender, race, and ethnicity among participants who received Pfizer-BioNTech COVID-19 Vaccine and those who received placebo. Overall, among the participants who received the Pfizer-BioNTech COVID-19 Vaccine, 50.1% were male and 49.9% were female, 85.9% were White, 4.6% were Black or African American, 11.7% were Hispanic/Latino, 6.4% were Asian, and 0.4% were American Indian/Alaska Native.

Unsolicited Adverse Events

In the following analyses of Study 2 in participants 12 through 15 years of age (1,131 of whom received Pfizer-BioNTech COVID-19 Vaccine and 1,129 of whom received placebo), 98.3% of study participants had at least 30 days of follow-up after Dose 2.

Serious Adverse Events
Serious adverse events from Dose 1 through up to 30 days after Dose 2 in ongoing follow-up were reported by 0.4% of Pfizer-BioNTech COVID-19 Vaccine recipients and by 0.1% of placebo recipients. There were no notable patterns or numerical imbalances between treatment groups for specific categories of serious adverse events that would suggest a causal relationship to Pfizer-BioNTech COVID-19 Vaccine.

Non-Serious Adverse Events
Non-serious adverse events from Dose 1 through up to 30 days after Dose 2 in ongoing follow-up were reported by 5.8% of Pfizer-BioNTech COVID-19 Vaccine recipients and by 5.8% of placebo recipients. From Dose 1 through 30 days after Dose 2, reports of lymphadenopathy plausibly related to the study intervention were imbalanced, with notably more cases in the Pfizer-BioNTech COVID-19 Vaccine group (7) vs. the placebo group (1). There were no other notable patterns or numerical imbalances between treatment groups for specific categories of non-serious adverse events that would suggest a causal relationship to Pfizer-BioNTech COVID-19 Vaccine.

Participants 5 Through 11 Years of Age (2-Dose Primary Series)

In an analysis of Study 3 Phase 2/3, based on data up to the cutoff date of September 06, 2021, 2,268 participants [1,518 Pfizer-BioNTech COVID-19 Vaccine (10 mcg modRNA); 750 placebo] were 5 through 11 years of age. Of these, 2,158 (95.1%) [1,444 Pfizer-BioNTech COVID-19 Vaccine (10 mcg modRNA) and 714 placebo] participants have been followed for at least 2 months after the second dose. An analysis of Study 3 Phase 2/3 adverse event data also included another 2,379 participants [1,591 Pfizer-BioNTech COVID-19 Vaccine (10 mcg modRNA) and 788 placebo], of whom 71.2% had a follow-up period for at least 2 weeks after Dose 2 up to the cutoff date of October 8, 2021. The safety evaluation in Study 3 is ongoing.

Demographic characteristics in Study 3 were generally similar with regard to age, gender, race, and ethnicity among participants 5 through 11 years of age who received Pfizer-BioNTech COVID-19 Vaccine (10 mcg modRNA) and those who received placebo. Among the 4,647 participants 5 through 11 years of age who received at least 1 dose of the Pfizer-BioNTech COVID-19 Vaccine (10 mcg modRNA) or placebo, 51.8% were male and 48.2% were female, 77.3% were White, 5.8% were Black or African American, 16.9% were Hispanic/Latino, 8.3% were Asian, and 0.4% were American Indian/Alaska Native.

Solicited Local and Systemic Adverse Reactions
The mean duration of pain at the injection site after Dose 2 was 2.3 days (range 1 to 11 days), for redness 2.2 days (range 1 to 10 days), and for swelling 2.2 days (range 1 to 10 days) for children in the Pfizer-BioNTech COVID-19 Vaccine (10 mcg modRNA) group up to the cutoff date of September 06, 2021.

Table 2: Study 3 – Frequency and Percentages of Participants With Solicited Local Reactions, by Maximum Severity, Within 7 Days After Each Dose – Children 5 Through 11 Years of Age – Safety Population*

	Pfizer-BioNTech COVID-19 Vaccine± Dose 1 N[a]=1511 n[c] (%)	Placebo Dose 1 N[a,b]=748 n[c] (%)	Pfizer-BioNTech COVID-19 Vaccine± Dose 2 N[a]=1501 n[c] (%)	Placebo Dose 2 N[a,b]=740 n[c] (%)
Redness[d]				
Any (≥0.5 cm)	222 (14.7)	43 (5.7)	278 (18.5)	40 (5.4)
Mild	143 (9.5)	37 (4.9)	143 (9.5)	31 (4.2)
Moderate	79 (5.2)	6 (0.8)	132 (8.8)	9 (1.2)
Severe	0	0	3 (0.2)	0
Swelling[d]				
Any (≥0.5 cm)	158 (10.5)	20 (2.7)	229 (15.3)	20 (2.7)
Mild	85 (5.6)	13 (1.7)	117 (7.8)	15 (2.0)
Moderate	72 (4.8)	7 (0.9)	112 (7.5)	5 (0.7)
Severe	1 (0.1)	0	0	0
Pain at the injection site[e]				
Any	1119 (74.1)	234 (31.3)	1065 (71.0)	218 (29.5)
Mild	890 (58.9)	204 (27.3)	793 (52.8)	192 (25.9)
Moderate	225 (14.9)	30 (4.0)	267 (17.8)	26 (3.5)
Severe	4 (0.3)	0	5 (0.3)	0

Note: Reactions were collected in an electronic diary (e-diary) from Day 1 to Day 7 after vaccination.

a. N = Number of participants reporting at least 1 yes or no response for the specified reaction after the specified dose.
b. The denominators (N) used in the percentage calculations for redness and swelling were 749 after Dose 1 and 741 after Dose 2 in the placebo group, due to an e-diary error.
c. n = Number of participants with the specified reaction.
d. Mild: ≥0.5 to ≤2.0 cm; Moderate: >2.0 to ≤7.0 cm; Severe: >7.0 cm.
e. Mild: does not interfere with activity; Moderate: interferes with activity; Severe: prevents daily activity.

* Randomized participants who received at least 1 dose of the study intervention.

± Pfizer-BioNTech COVID-19 Vaccine (Original monovalent, 10 mcg modRNA).

Table 3: Study 3 – Frequency and Percentages of Participants with Solicited Systemic Reactions, by Maximum Severity, Within 7 Days After Each Dose – Children 5 Through 11 Years of Age – Safety Population*

	Pfizer-BioNTech COVID-19 Vaccine± Dose 1 N[a]=1511 n[c] (%)	Placebo Dose 1 N[a,b]=748 n[c] (%)	Pfizer-BioNTech COVID-19 Vaccine± Dose 2 N[a]=1501 n[c] (%)	Placebo Dose 2 N[a,b]=740 n[c] (%)
Fever				
≥38.0°C	38 (2.5)	10 (1.3)	98 (6.5)	9 (1.2)
≥38.0°C to 38.4°C	23 (1.5)	4 (0.5)	51 (3.4)	5 (0.7)
>38.4°C to 38.9°C	12 (0.8)	5 (0.7)	38 (2.5)	3 (0.4)
>38.9°C to 40.0°C	3 (0.2)	1 (0.1)	8 (0.5)	1 (0.1)
>40.0°C	0	0	1 (0.1)	0

	Pfizer-BioNTech COVID-19 Vaccine± Dose 1 N[a]=1511 n[c] (%)	**Placebo Dose 1 N[a,b]=748 n[c] (%)**	**Pfizer-BioNTech COVID-19 Vaccine± Dose 2 N[a]=1501 n[c] (%)**	**Placebo Dose 2 N[a,b]=740 n[c] (%)**
Fatigue[d]				
Any	508 (33.6)	234 (31.3)	592 (39.4)	180 (24.3)
Mild	333 (22.0)	150 (20.1)	321 (21.4)	96 (13.0)
Moderate	171 (11.3)	83 (11.1)	260 (17.3)	83 (11.2)
Severe	4 (0.3)	1 (0.1)	11 (0.7)	1 (0.1)
Headache[d]				
Any	339 (22.4)	180 (24.1)	420 (28.0)	138 (18.6)
Mild	249 (16.5)	131 (17.5)	281 (18.7)	93 (12.6)
Moderate	88 (5.8)	45 (6.0)	136 (9.1)	45 (6.1)
Severe	2 (0.1)	4 (0.5)	3 (0.2)	0
Chills[d]				
Any	70 (4.6)	35 (4.7)	147 (9.8)	32 (4.3)
Mild	54 (3.6)	30 (4.0)	105 (7.0)	24 (3.2)
Moderate	16 (1.1)	5 (0.7)	40 (2.7)	7 (0.9)
Severe	0	0	2 (0.1)	1 (0.1)
Vomiting[e]				
Any	33 (2.2)	11 (1.5)	28 (1.9)	6 (0.8)
Mild	26 (1.7)	11 (1.5)	27 (1.8)	6 (0.8)
Moderate	7 (0.5)	0	1 (0.1)	0
Severe	0	0	0	0
Diarrhea[f]				
Any	89 (5.9)	31 (4.1)	79 (5.3)	35 (4.7)
Mild	79 (5.2)	31 (4.1)	72 (4.8)	32 (4.3)
Moderate	10 (0.7)	0	7 (0.5)	3 (0.4)
Severe	0	0	0	0
New or worsened muscle pain[d]				
Any	137 (9.1)	51 (6.8)	175 (11.7)	55 (7.4)
Mild	96 (6.4)	35 (4.7)	116 (7.7)	38 (5.1)
Moderate	40 (2.6)	16 (2.1)	58 (3.9)	17 (2.3)
Severe	1 (0.1)	0	1 (0.1)	0
New or worsened joint pain[d]				
Any	50 (3.3)	41 (5.5)	78 (5.2)	27 (3.6)
Mild	34 (2.3)	31 (4.1)	57 (3.8)	20 (2.7)
Moderate	16 (1.1)	10 (1.3)	21 (1.4)	7 (0.9)
Severe	0	0	0	0

	Pfizer-BioNTech COVID-19 Vaccine± Dose 1 N[a]=1511 n[c] (%)	Placebo Dose 1 N[a,b]=748 n[c] (%)	Pfizer-BioNTech COVID-19 Vaccine± Dose 2 N[a]=1501 n[c] (%)	Placebo Dose 2 N[a,b]=740 n[c] (%)
Use of antipyretic or pain medication[g]	217 (14.4)	62 (8.3)	296 (19.7)	60 (8.1)

Note: Events and use of antipyretic or pain medication were collected in an electronic diary (e-diary) from Day 1 to Day 7 after each dose.

a. N = Number of participants reporting at least 1 yes or no response for the specified event after the specified dose.
b. The denominators (N) used in the percentage calculations for fever and use of antipyretic or pain medication were 749 after Dose 1 and 741 after Dose 2 in the placebo group, due to an e-diary error.
c. n = Number of participants with the specified reaction.
d. Mild: does not interfere with activity; Moderate: some interference with activity; Severe: prevents daily activity.
e. Mild: 1 to 2 times in 24 hours; Moderate: >2 times in 24 hours; Severe: requires intravenous hydration.
f. Mild: 2 to 3 loose stools in 24 hours; Moderate: 4 to 5 loose stools in 24 hours; Severe: 6 or more loose stools in 24 hours.
g. Severity was not collected for use of antipyretic or pain medication.
* Randomized participants who received at least 1 dose of the study intervention.
± Pfizer-BioNTech COVID-19 Vaccine (Original, monovalent, 10 mcg modRNA).

Unsolicited Adverse Events

In the following analyses of Study 3 in children 5 through 11 years of age (1,518 of whom received Pfizer-BioNTech COVID-19 Vaccine (10 mcg modRNA) and 750 of whom received placebo), 99.5% of participants had at least 30 days of follow-up after Dose 2.

Serious Adverse Events
In 1 group of participants (initial enrollment cohort) with a median of 2.3 months follow-up post Dose 2, no serious adverse events were reported that were considered related to vaccination. In a second group of participants (expansion cohort) with a median of 2.4 weeks follow-up post Dose 2, no serious adverse events were reported that were considered related to vaccination.

Non-Serious Adverse Events
In 1 group of participants (initial enrollment cohort), non-serious adverse events from Dose 1 through up to 30 days after Dose 2 up to the cutoff date of September 06, 2021, in ongoing follow-up were reported by 10.9% of Pfizer-BioNTech COVID-19 Vaccine (10 mcg modRNA) recipients and by 9.1% of placebo recipients. In this group of participants, >99% had follow-up 30 days post Dose 2. In a second group of participants (expansion cohort) for which the median follow-up was 2.4 weeks (range 0 to 3.7 weeks), non-serious adverse events from Dose 1 through the cutoff date of October 08, 2021, were reported by 7.1% of Pfizer-BioNTech COVID-19 Vaccine (10 mcg modRNA) recipients and by 6.3% of placebo recipients.

In the initial enrollment cohort, from Dose 1 through 30 days after Dose 2, lymphadenopathy was reported in 13 (0.9%) participants in the Pfizer-BioNTech COVID-19 Vaccine (10 mcg modRNA) group vs. 1 (0.1%) in the placebo group. In the expansion cohort from Dose 1 through the cutoff date, lymphadenopathy was reported in 6 (0.4%) participants in the Pfizer-BioNTech COVID-19 Vaccine (10 mcg modRNA) group vs. 3 (0.4%) in the placebo group. There were no other notable patterns between treatment groups for specific categories of non-serious adverse events that would suggest a causal relationship to Pfizer-BioNTech COVID-19 Vaccine.

Participants 2 Through 4 Years of Age (3-Dose Primary Series)

In an analysis of Study 3 (Phase 2/3), based on data in the blinded placebo-controlled follow-up period up to the cutoff date of April 29, 2022, 886 participants 2 through 4 years of age who received a 3-dose primary series [606 Pfizer-BioNTech COVID-19 Vaccine (3 mcg modRNA); 280 placebo] have been followed a median of 1.4 months after the third dose.

Demographic characteristics in Study 3 were generally similar with regard to age, gender, race, and ethnicity among participants 2 through 4 years of age who received Pfizer-BioNTech COVID-19 Vaccine and those who received placebo. Among the 1,835 participants 2 through 4 years of age who received at least 1 dose of the Pfizer-BioNTech COVID-19 Vaccine, 49.1% were male and 50.9% were female, 80.1% were White, 14.4% were Hispanic/Latino, 7.1% were multi-racial, 6.9% were Asian, 5.1% were Black or African American, and 0.2% were American Indian/Alaska Native.

Solicited Local and Systemic Adverse Reactions

The mean duration of pain at the injection site after Dose 3 was 1.7 days (range 1 to 14 days), for redness 1.5 days (range 1 to 3 days), and for swelling 1.8 days (range 1 to 4 days) for participants 2 through 4 years of age in the Pfizer−BioNTech COVID−19 Vaccine group in the blinded placebo-controlled follow-up period (cutoff date of April 29, 2022).

Table 4: Study 3 – Frequency and Percentages of Participants With Solicited Local Reactions, by Maximum Severity, Within 7 Days After Each Dose – Participants 2 Through 4 Years of Age – Safety Population*

	Pfizer-BioNTech COVID-19 Vaccine± Dose 1 N[a]=1814 to 1825 n[b] (%)	**Placebo Dose 1 N[a]=905 to 909 n[b] (%)**	**Pfizer-BioNTech COVID-19 Vaccine± Dose 2 N[a]=1772 to 1779 n[b] (%)**	**Placebo Dose 2 N[a]=877 to 878 n[b] (%)**	**Pfizer-BioNTech COVID-19 Vaccine± Dose 3 N[a]=547 to 552 n[b] (%)**	**Placebo Dose 3 N[a]=262 n[b] (%)**
Redness[c]						
Any (≥0.5 cm)	160 (8.8)	77 (8.5)	202 (11.4)	50 (5.7)	60 (10.9)	9 (3.4)
Mild	137 (7.5)	67 (7.4)	170 (9.6)	43 (4.9)	53 (9.6)	7 (2.7)
Moderate	22 (1.2)	9 (1.0)	31 (1.7)	7 (0.8)	7 (1.3)	2 (0.8)
Severe	1 (0.1)	1 (0.1)	1 (0.1)	0	0	0
Swelling[c]						
Any (≥0.5 cm)	67 (3.7)	26 (2.9)	102 (5.7)	18 (2.1)	17 (3.1)	3 (1.1)
Mild	59 (3.2)	21 (2.3)	81 (4.6)	16 (1.8)	16 (2.9)	3 (1.1)
Moderate	8 (0.4)	5 (0.6)	21 (1.2)	2 (0.2)	1 (0.2)	0
Severe	0	0	0	0	0	0

	Pfizer-BioNTech COVID-19 Vaccine± Dose 1 Na=1814 to 1825 nb (%)	Placebo Dose 1 Na=905 to 909 nb (%)	Pfizer-BioNTech COVID-19 Vaccine± Dose 2 Na=1772 to 1779 nb (%)	Placebo Dose 2 Na=877 to 878 nb (%)	Pfizer-BioNTech COVID-19 Vaccine± Dose 3 Na=547 to 552 nb (%)	Placebo Dose 3 Na=262 nb (%)
Pain at the injection site[d]						
Any	559 (30.8)	186 (20.6)	550 (31.0)	178 (20.3)	146 (26.7)	35 (13.4)
Mild	522 (28.8)	178 (19.7)	514 (29.0)	169 (19.3)	130 (23.8)	33 (12.6)
Moderate	37 (2.0)	7 (0.8)	36 (2.0)	8 (0.9)	16 (2.9)	2 (0.8)
Severe	0	1 (0.1)	0	1 (0.1)	0	0

* Randomized participants who received at least 1 dose of the study intervention.
± Pfizer-BioNTech COVID-19 Vaccine (Original monovalent, 3 mcg modRNA).
Note: Reactions were collected in an electronic diary (e-diary) from Day 1 to Day 7 after vaccination.
a. N = Number of participants reporting at least 1 yes or no response for the specified reaction after the specified dose.
b. n = Number of participants with the specified reaction.
c. Mild: ≥0.5 to ≤2.0 cm; Moderate: >2.0 to ≤7.0 cm; Severe: >7.0 cm.
d. Mild: does not interfere with activity; Moderate: interferes with activity; Severe: prevents daily activity.

Table 5: Study 3 – Frequency and Percentages of Participants with Solicited Systemic Reactions, by Maximum Severity, Within 7 Days After Each Dose – Participants 2 Through 4 Years of Age – Safety Population*

	Pfizer-BioNTech COVID-19 Vaccine± Dose 1 Na=1813 to 1824 nb (%)	Placebo Dose 1 Na=905 to 909 nb (%)	Pfizer-BioNTech COVID-19 Vaccine± Dose 2 Na=1772 to 1779 nb (%)	Placebo Dose 2 Na=877 to 878 nb (%)	Pfizer-BioNTech COVID-19 Vaccine± Dose 3 Na=547 to 552 nb (%)	Placebo Dose 3 Na=262 nb (%)
Fever						
≥38.0°C	95 (5.2)	48 (5.3)	88 (4.9)	46 (5.2)	28 (5.1)	11 (4.2)
≥38.0°C to 38.4°C	57 (3.1)	24 (2.6)	41 (2.3)	17 (1.9)	16 (2.9)	4 (1.5)
>38.4°C to 38.9°C	24 (1.3)	16 (1.8)	26 (1.5)	21 (2.4)	8 (1.4)	4 (1.5)
>38.9°C to 40.0°C	13 (0.7)	8 (0.9)	19 (1.1)	8 (0.9)	4 (0.7)	3 (1.1)
>40.0°C	1 (0.1)	0	2 (0.1)	0	0	0

	Pfizer-BioNTech COVID-19 Vaccine± Dose 1 N[a]=1813 to 1824 n[b] (%)	Placebo Dose 1 N[a]=905 to 909 n[b] (%)	Pfizer-BioNTech COVID-19 Vaccine± Dose 2 N[a]=1772 to 1779 n[b] (%)	Placebo Dose 2 N[a]=877 to 878 n[b] (%)	Pfizer-BioNTech COVID-19 Vaccine± Dose 3 N[a]=547 to 552 n[b] (%)	Placebo Dose 3 N[a]=262 n[b] (%)
Fatigue[c]						
Any	539 (29.7)	277 (30.6)	456 (25.7)	201 (22.9)	134 (24.5)	57 (21.8)
Mild	335 (18.5)	176 (19.4)	267 (15.1)	120 (13.7)	87 (15.9)	35 (13.4)
Moderate	198 (10.9)	96 (10.6)	181 (10.2)	78 (8.9)	45 (8.2)	22 (8.4)
Severe	6 (0.3)	5 (0.6)	8 (0.5)	3 (0.3)	2 (0.4)	0
Headache[c]						
Any	81 (4.5)	44 (4.9)	81 (4.6)	36 (4.1)	27 (4.9)	11 (4.2)
Mild	63 (3.5)	35 (3.9)	63 (3.6)	23 (2.6)	19 (3.5)	10 (3.8)
Moderate	18 (1.0)	8 (0.9)	18 (1.0)	12 (1.4)	8 (1.5)	1 (0.4)
Severe	0	1 (0.1)	0	1 (0.1)	0	0
Chills[c]						
Any	41 (2.3)	22 (2.4)	53 (3.0)	23 (2.6)	18 (3.3)	7 (2.7)
Mild	28 (1.5)	16 (1.8)	35 (2.0)	17 (1.9)	14 (2.6)	7 (2.7)
Moderate	10 (0.6)	6 (0.7)	18 (1.0)	6 (0.7)	3 (0.5)	0
Severe	3 (0.2)	0	0	0	1 (0.2)	0
Vomiting[d]						
Any	54 (3.0)	24 (2.7)	61 (3.4)	29 (3.3)	9 (1.6)	10 (3.8)
Mild	44 (2.4)	14 (1.5)	55 (3.1)	26 (3.0)	7 (1.3)	9 (3.4)
Moderate	10 (0.6)	10 (1.1)	6 (0.3)	3 (0.3)	2 (0.4)	1 (0.4)
Severe	0	0	0	0	0	0
Diarrhea[e]						
Any	139 (7.7)	72 (8.0)	118 (6.7)	64 (7.3)	28 (5.1)	13 (5.0)
Mild	130 (7.2)	64 (7.1)	105 (5.9)	57 (6.5)	21 (3.8)	10 (3.8)
Moderate	9 (0.5)	8 (0.9)	12 (0.7)	7 (0.8)	7 (1.3)	3 (1.1)
Severe	0	0	1 (0.1)	0	0	0
New or worsened muscle pain[c]						
Any	43 (2.4)	15 (1.7)	46 (2.6)	21 (2.4)	11 (2.0)	4 (1.5)
Mild	33 (1.8)	13 (1.4)	33 (1.9)	17 (1.9)	8 (1.5)	4 (1.5)
Moderate	9 (0.5)	2 (0.2)	13 (0.7)	4 (0.5)	3 (0.5)	0
Severe	1 (0.1)	0	0	0	0	0
New or worsened joint pain[c]						
Any	14 (0.8)	18 (2.0)	24 (1.4)	9 (1.0)	7 (1.3)	2 (0.8)
Mild	12 (0.7)	13 (1.4)	18 (1.0)	6 (0.7)	5 (0.9)	2 (0.8)
Moderate	2 (0.1)	5 (0.6)	6 (0.3)	3 (0.3)	1 (0.2)	0
Severe	0	0	0	0	1 (0.2)	0

	Pfizer-BioNTech COVID-19 Vaccine± Dose 1 Na=1813 to 1824 nb (%)	Placebo Dose 1 Na=905 to 909 nb (%)	Pfizer-BioNTech COVID-19 Vaccine± Dose 2 Na=1772 to 1779 nb (%)	Placebo Dose 2 Na=877 to 878 nb (%)	Pfizer-BioNTech COVID-19 Vaccine± Dose 3 Na=547 to 552 nb (%)	Placebo Dose 3 Na=262 nb (%)
Use of antipyretic or pain medication[f]	197 (10.8)	83 (9.1)	177 (9.9)	74 (8.4)	47 (8.5)	18 (6.9)

* Randomized participants who received at least 1 dose of the study intervention.
± Pfizer-BioNTech COVID-19 Vaccine (Original monovalent, 3 mcg modRNA).
Note: Events and use of antipyretic or pain medication were collected in an electronic diary (e-diary) from Day 1 to Day 7 after each dose.
a. N = Number of participants reporting at least 1 yes or no response for the specified event after the specified dose.
b. n = Number of participants with the specified reaction.
c. Mild: does not interfere with activity; Moderate: some interference with activity; Severe: prevents daily activity.
d. Mild: 1 to 2 times in 24 hours; Moderate: >2 times in 24 hours; Severe: requires intravenous hydration.
e. Mild: 2 to 3 loose stools in 24 hours; Moderate: 4 to 5 loose stools in 24 hours; Severe: 6 or more loose stools in 24 hours.
f. Severity was not collected for use of antipyretic or pain medication.

Unsolicited Adverse Events

In the following analyses of Study 3 in participants 2 through 4 years of age (606 of whom received Pfizer-BioNTech COVID-19 Vaccine and 280 of whom received placebo), 76.6% of participants had at least 30 days of follow-up after Dose 3.

Serious Adverse Events
Serious adverse events from Dose 1 through 1 month after Dose 3, with an overall median of 1.4 months follow-up after Dose 3 were reported by 0.7% of Pfizer-BioNTech COVID-19 Vaccine recipients and by 0.9% of placebo recipients. One serious adverse event of fever (maximum temperature 40.3°C) on Day 3 after Dose 2 in a 4-year-old was considered possibly related to vaccination.

Non-Serious Adverse Events
Non-serious adverse events from Dose 1 through up to 30 days after Dose 3, in ongoing follow-up were reported by 18.5% of Pfizer-BioNTech COVID-19 Vaccine recipients and by 18.5% of placebo recipients.

From Dose 1 through 30 days after Dose 3, lymphadenopathy was reported in 1 (0.1%) participant in the Pfizer-BioNTech COVID-19 Vaccine (3 mcg modRNA) group vs. 0 (0.0%) in the placebo group. There were no other notable patterns between treatment groups for specific categories of non-serious adverse events that would suggest a causal relationship to Pfizer-BioNTech COVID-19 Vaccine.

Participants 6 Through 23 Months of Age (3-Dose Primary Series)

In an analysis of Study 3 (Phase 2/3), based on data in the blinded placebo-controlled follow-up period up to the cutoff date of April 29, 2022, 570 participants 6 through 23 months of age who

received a 3-dose primary series [386 Pfizer-BioNTech COVID-19 Vaccine (3 mcg modRNA); 184 placebo] have been followed for a median of 1.3 months after the third dose.

Demographic characteristics in Study 3 were generally similar with regard to age, gender, race, and ethnicity among participants 6 through 23 months of age who received Pfizer-BioNTech COVID-19 Vaccine and those who received placebo. Among the 1,178 participants 6 through 23 months of age who received at least 1 dose of the Pfizer-BioNTech COVID-19 Vaccine, 50.0% were male and 50.0% were female, 78.3% were White, 9.9% were multi-racial, 13.7% were Hispanic/Latino, 7.7% were Asian, 3.6% were Black or African American, and 0.3% were American Indian/Alaska Native.

Solicited Local and Systemic Adverse Reactions

The mean duration of tenderness at the injection site after Dose 3 was 1.5 days (range 1 to 9 days), for redness 1.5 days (range 1 to 5 days), and for swelling 1.8 days (range 1 to 3 days) for participants 6 through 23 months of age in the Pfizer-BioNTech COVID-19 Vaccine group in the blinded placebo-controlled follow-up period (cutoff date of April 29, 2022).

Table 6: Study 3 – Frequency and Percentages of Participants With Solicited Local Reactions, by Maximum Severity, Within 7 Days After Each Dose – Participants 6 Through 23 Months of Age – Safety Population*

	Pfizer-BioNTech COVID-19 Vaccine± Dose 1 N[a]=1159 to 1173 n[b] (%)	**Placebo Dose 1 N[a]=591 to 595 n[b] (%)**	**Pfizer-BioNTech COVID-19 Vaccine± Dose 2 N[a]=1137 to 1147 n[b] (%)**	**Placebo Dose 2 N[a]=590 to 591 n[b] (%)**	**Pfizer-BioNTech COVID-19 Vaccine± Dose 3 N[a]=362 to 365 n[b] (%)**	**Placebo Dose 3 N[a]=170 n[b] (%)**
Redness[c]						
Any (≥0.5 cm)	124 (10.6)	44 (7.4)	107 (9.3)	39 (6.6)	26 (7.1)	9 (5.3)
Mild	114 (9.7)	41 (6.9)	97 (8.5)	36 (6.1)	17 (4.7)	8 (4.7)
Moderate	10 (0.9)	3 (0.5)	10 (0.9)	3 (0.5)	8 (2.2)	1 (0.6)
Severe	0	0	0	0	1 (0.3)	0
Swelling[c]						
Any (≥0.5 cm)	46 (3.9)	15 (2.5)	45 (3.9)	9 (1.5)	10 (2.7)	3 (1.8)
Mild	40 (3.4)	13 (2.2)	39 (3.4)	8 (1.4)	7 (1.9)	3 (1.8)
Moderate	6 (0.5)	2 (0.3)	6 (0.5)	1 (0.2)	3 (0.8)	0
Severe	0	0	0	0	0	0
Tenderness at the injection site[d]						
Any	192 (16.6)	66 (11.2)	171 (15.0)	50 (8.5)	58 (16.0)	20 (11.8)
Mild	181 (15.6)	61 (10.3)	154 (13.5)	42 (7.1)	51 (14.1)	17 (10.0)
Moderate	11 (0.9)	5 (0.8)	16 (1.4)	8 (1.4)	7 (1.9)	3 (1.8)
Severe	0	0	1 (0.1)	0	0	0

* Randomized participants who received at least 1 dose of the study intervention.
± Pfizer-BioNTech COVID-19 Vaccine (Original monovalent, 3 mcg modRNA).
Note: Reactions were collected in an electronic diary (e-diary) from Day 1 to Day 7 after vaccination.

	Pfizer-BioNTech COVID-19 Vaccine± Dose 1 N[a]=1159 to 1173 n[b] (%)	Placebo Dose 1 N[a]=591 to 595 n[b] (%)	Pfizer-BioNTech COVID-19 Vaccine± Dose 2 N[a]=1137 to 1147 n[b] (%)	Placebo Dose 2 N[a]=590 to 591 n[b] (%)	Pfizer-BioNTech COVID-19 Vaccine± Dose 3 N[a]=362 to 365 n[b] (%)	Placebo Dose 3 N[a]=170 n[b] (%)

a. N = Number of participants reporting at least 1 yes or no response for the specified reaction after the specified dose.
b. n = Number of participants with the specified reaction.
c. Mild: ≥0.5 to ≤2.0 cm; Moderate: >2.0 to ≤7.0 cm; Severe: >7.0 cm.
d. Mild: hurts if gently touched; Moderate: hurts if gently touched with crying; Severe: causes limitation of limb movement.

Table 7: Study 3 – Frequency and Percentages of Participants with Solicited Systemic Reactions, by Maximum Severity, Within 7 Days After Each Dose – Participants 6 Through 23 Months of Age – Safety Population*

	Pfizer-BioNTech COVID-19 Vaccine± Dose 1 N[a]=1159 to 1173 n[b] (%)	Placebo Dose 1 N[a]=591 to 595 n[b] (%)	Pfizer-BioNTech COVID-19 Vaccine± Dose 2 N[a]=1137 to 1147 n[b] (%)	Placebo Dose 2 N[a]=590 to 591 n[b] (%)	Pfizer-BioNTech COVID-19 Vaccine± Dose 3 N[a]=362 to 365 n[b] (%)	Placebo Dose 3 N[a]=170 n[b] (%)
Fever						
≥38.0°C	85 (7.2)	43 (7.2)	85 (7.4)	36 (6.1)	25 (6.8)	10 (5.9)
≥38.0°C to 38.4°C	42 (3.6)	22 (3.7)	41 (3.6)	18 (3.0)	14 (3.8)	7 (4.1)
>38.4°C to 38.9°C	23 (2.0)	14 (2.4)	20 (1.7)	11 (1.9)	5 (1.4)	2 (1.2)
>38.9°C to 40.0°C	19 (1.6)	6 (1.0)	23 (2.0)	7 (1.2)	5 (1.4)	1 (0.6)
>40.0°C	1 (0.1)	1 (0.2)	1 (0.1)	0	1 (0.3)	0
Decreased appetite[c]						
Any	257 (22.2)	125 (21.2)	252 (22.2)	106 (18.0)	73 (20.2)	23 (13.5)
Mild	138 (11.9)	73 (12.4)	157 (13.8)	63 (10.7)	42 (11.6)	13 (7.6)
Moderate	116 (10.0)	51 (8.6)	91 (8.0)	42 (7.1)	27 (7.5)	10 (5.9)
Severe	3 (0.3)	1 (0.2)	4 (0.4)	1 (0.2)	4 (1.1)	0
Drowsiness[d]						
Any	313 (27.0)	173 (29.3)	271 (23.8)	125 (21.2)	72 (19.9)	22 (12.9)
Mild	251 (21.7)	130 (22.0)	201 (17.7)	98 (16.6)	50 (13.8)	15 (8.8)
Moderate	60 (5.2)	41 (6.9)	66 (5.8)	26 (4.4)	21 (5.8)	6 (3.5)
Severe	2 (0.2)	2 (0.3)	4 (0.4)	1 (0.2)	1 (0.3)	1 (0.6)

	Pfizer-BioNTech COVID-19 Vaccine± Dose 1 Na=1159 to 1173 nb (%)	Placebo Dose 1 Na=591 to 595 nb (%)	Pfizer-BioNTech COVID-19 Vaccine± Dose 2 Na=1137 to 1147 nb (%)	Placebo Dose 2 Na=590 to 591 nb (%)	Pfizer-BioNTech COVID-19 Vaccine± Dose 3 Na=362 to 365 nb (%)	Placebo Dose 3 Na=170 nb (%)
Irritability[e]						
Any	593 (51.2)	279 (47.2)	539 (47.4)	240 (40.7)	158 (43.6)	64 (37.6)
Mild	245 (21.1)	106 (17.9)	213 (18.7)	89 (15.1)	56 (15.5)	27 (15.9)
Moderate	341 (29.4)	173 (29.3)	319 (28.1)	146 (24.7)	101 (27.9)	37 (21.8)
Severe	7 (0.6)	0	7 (0.6)	5 (0.8)	1 (0.3)	0
Use of antipyretic or pain medication[f]	281 (24.0)	117 (19.7)	243 (21.2)	111 (18.8)	70 (19.2)	28 (16.5)

* Randomized participants who received at least 1 dose of the study intervention.
± Pfizer-BioNTech COVID-19 Vaccine (Original monovalent, 3 mcg modRNA).
Note: Events and use of antipyretic or pain medication were collected in an electronic diary (e-diary) from Day 1 to Day 7 after each dose.
a. N = Number of participants reporting at least 1 yes or no response for the specified event after the specified dose.
b. n = Number of participants with the specified reaction.
c. Mild: decreased interest in eating; Moderate: decreased oral intake; Severe: refusal to feed.
d. Mild: increased or prolonged sleeping bouts; Moderate: slightly subdued interfering with daily activity; Severe: disabling; not interested in usual daily activity.
e. Mild: easily consolable; Moderate: requiring increased attention; Severe: inconsolable; crying cannot be comforted.
f. Severity was not collected for use of antipyretic or pain medication.

Unsolicited Adverse Events

In the following analyses of Study 3 in participants 6 through 23 months of age (386 of whom received Pfizer-BioNTech COVID-19 Vaccine and 184 of whom received placebo), 83.7% of participants had at least 30 days of follow-up after Dose 3.

Serious Adverse Events
Serious adverse events from Dose 1 through 1 month after Dose 3, with an overall median of 1.3 months follow-up after Dose 3 were reported by 1.4% of Pfizer-BioNTech COVID-19 Vaccine recipients and by 2.3% of placebo recipients. No serious adverse events were reported that were considered related to vaccination.

Non-Serious Adverse Events
Non-serious adverse events from Dose 1 through up to 1 month after Dose 3, in ongoing follow-up were reported by 29.1% of Pfizer-BioNTech COVID-19 Vaccine recipients and by 26.3% of placebo recipients.

From Dose 1 through 30 days after Dose 3, lymphadenopathy was reported in 2 (0.2%) participants in the Pfizer-BioNTech COVID-19 Vaccine group vs. 0 (0%) in the placebo group. There were no other notable patterns between treatment groups for specific categories of non-serious adverse events that would suggest a causal relationship to Pfizer-BioNTech COVID-19 Vaccine.

Pfizer-BioNTech COVID-19 Vaccine (Original Monovalent) Administered as a First Booster Dose Following a Primary Series of Pfizer-BioNTech COVID-19 Vaccine (Original Monovalent) or COMIRNATY (COVID-19 Vaccine, mRNA) in Participants 18 through 55 Years of Age

A subset of Study 2 Phase 2/3 participants of 306 participants 18 through 55 years of age received a first booster dose of Pfizer-BioNTech COVID-19 Vaccine (30 mcg modRNA) approximately 6 months (range of 4.8 to 8.0 months) after completing the primary series. Additionally, a total of 23 Study 2 (Phase 1) participants (11 participants 18 through 55 years of age and 12 participants 65 through 85 years of age) received a first booster dose of Pfizer-BioNTech COVID-19 Vaccine approximately 8 months (range 7.9 to 8.8 months) after completing the primary series. Participants are being monitored for unsolicited adverse events through 1 month after vaccination and for serious adverse events for 6 months after the last vaccination.

Among the 306 Phase 2/3 participants, the median age was 42 years (range 19 through 55 years of age), 45.8% were male and 54.2% were female, 81.4% were White, 27.8% were Hispanic/Latino, 9.2% were Black or African American, 5.2% were Asian, and 0.7% were American Indian/Alaska Native. Among the 12 Phase 1 participants 65 through 85 years of age, the median age was 69 years (range 65 through 75 years of age), 6 were male and all were White and Not Hispanic/Latino. Following the booster dose, the median follow-up time was 2.6 months (range 2.1 to 2.9 months) for Phase 1 participants and 2.6 months (range 1.1 to 2.8 months) for Phase 2/3 participants.

Unsolicited Adverse Events

Overall, the 306 participants who received a first booster dose, had a median follow-up time of 2.6 months after the booster dose to the cutoff date (June 17, 2021).

In an analysis of all unsolicited adverse events reported following the first booster dose, through 1 month after the booster dose, in participants 18 through 55 years of age (N=306), those assessed as adverse reactions not already captured by solicited local and systemic reactions were lymphadenopathy (n=16, 5.2%), nausea (n=2, 0.7%), decreased appetite (n=1, 0.3%), rash (n=1, 0.3%), and pain in extremity (n=1, 0.3%).

Serious Adverse Events

Of the 306 participants who received a first booster dose of Pfizer-BioNTech COVID-19 Vaccine, there were no serious adverse events reported from the booster dose through 30 days after the booster dose. One participant reported a serious adverse event 61 days after the booster dose that was assessed as unrelated to vaccination.

First Booster Dose Following a Primary Series of Pfizer-BioNTech COVID-19 Vaccine (Original Monovalent) in Participants 5 Through 11 Years of Age

A subset of Study 3 Phase 2/3 participants 5 through 11 years of age received a first booster dose of Pfizer-BioNTech COVID-19 Vaccine (10 mcg modRNA) at least 5 months after completing the primary series (range 5 to 9 months, 86.8% of participants received a booster dose at least 8 months after Dose 2). Those participants vaccinated prior to February 22, 2022, provided the safety database

(n=401), and had a median safety follow-up of 1.3 months from vaccination through the data cutoff date of March 22, 2022.

The median age of these 401 participants was 8.0 years (range 5 through 11 years of age), 52.4% were male and 47.6% were female, 70.1% were White, 7.2% were Black or African American, 22.9% were Hispanic/Latino, 7.7% were Asian, and 2.0% were American Indian/Alaska Native.

Solicited Local and Systemic Adverse Reactions

Table 8 and Table 9 present the frequency and severity of reported solicited local and systemic reactions, respectively, within 7 days of a booster dose of Pfizer-BioNTech COVID-19 Vaccine for Phase 2/3 participants 5 through 11 years of age.

In participants who received a booster dose, the mean duration of pain at the injection site after the booster dose was 2.4 days (range 1 to 35 days), for redness 2.3 days (range 1 to 12 days), and for swelling 2.3 days (range 1 to 9 days).

Table 8: Study 3 – Frequency and Percentages of Participants With Solicited Local Reactions, By Maximum Severity, Within 7 Days After the Booster Dose – Participants 5 Through 11 Years of Age – Safety Population*

	Pfizer-BioNTech COVID-19 Vaccine± Booster N[a]=371 n[b] (%)
Redness[c]	
Any (≥0.5 cm)	58 (15.6)
Mild	38 (10.2)
Moderate	19 (5.1)
Severe	1 (0.3)
Swelling[c]	
Any (≥0.5 cm)	61 (16.4)
Mild	30 (8.1)
Moderate	31 (8.4)
Severe	0
Pain at the injection site[d]	
Any	274 (73.9)
Mild	177 (47.7)
Moderate	95 (25.6)
Severe	2 (0.5)

* Randomized participants who received at least 1 dose of the study intervention.
± Pfizer-BioNTech COVID-19 Vaccine (Original monovalent, 10 mcg modRNA).
Note: Reactions were collected in the e-diary and unscheduled clinical assessments from Day 1 through Day 7 after vaccination.
a. N = Number of participants reporting at least 1 yes or no response for the specified reaction after the specified dose.
b. n = Number of participants with the specified characteristic.
c. Mild: ≥0.5 to 2.0 cm; moderate: >2.0 to 7.0 cm; severe: >7.0 cm.
d. Mild: does not interfere with activity; moderate: interferes with activity; severe: prevents daily activity.

Table 9: Study 3 – Frequency and Percentages of Participants With Solicited Systemic Reactions, by Maximum Severity, Within 7 Days After the Booster Dose – Participants 5 Through 11 Years of Age – Safety Population*

Solicited Systemic Reaction	Pfizer-BioNTech COVID-19 Vaccine± Booster N[a]=371 n[b] (%)
Fever	
≥38.0°C	25 (6.7)
≥38.0°C to 38.4°C	17 (4.6)
>38.4°C to 38.9°C	5 (1.3)
>38.9°C to 40.0°C	3 (0.8)
>40.0°C	0
Fatigue[c]	
Any	169 (45.6)
Mild	99 (26.7)
Moderate	63 (17.0)
Severe	7 (1.9)
Headache[c]	
Any	126 (34.0)
Mild	76 (20.5)
Moderate	47 (12.7)
Severe	0
Chills[c]	
Any	39 (10.5)
Mild	23 (6.2)
Moderate	15 (4.0)
Severe	1 (0.3)
Vomiting[d]	
Any	9 (2.4)
Mild	6 (1.6)
Moderate	3 (0.8)
Severe	0
Diarrhea[e]	
Any	18 (4.9)
Mild	15 (4.0)
Moderate	2 (0.5)
Severe	1 (0.3)
New or worsened muscle pain[c]	
Any	68 (18.3)
Mild	40 (10.8)
Moderate	28 (7.5)
Severe	0

Solicited Systemic Reaction	Pfizer-BioNTech COVID-19 Vaccine± Booster Na=371 nb (%)
New or worsened joint pain[c]	
Any	25 (6.7)
Mild	14 (3.8)
Moderate	11 (3.0)
Severe	0
Use of antipyretic or pain medication[f]	114 (30.7)

* Randomized participants who received at least 1 dose of the study intervention.
± Pfizer-BioNTech COVID-19 Vaccine (Original monovalent, 10 mcg modRNA).
Note: Events and use of antipyretic or pain medication were collected in the e-diary and unscheduled clinical assessments from Day 1 through Day 7 after vaccination.
a. N = number of participants reporting at least 1 yes or no response for the specified event after the specified dose.
b. n = Number of participants with the specified characteristic.
c. Mild: does not interfere with activity; moderate: some interference with activity; severe: prevents daily activity.
d. Mild: 1 to 2 times in 24 hours; moderate: >2 times in 24 hours; severe: requires intravenous hydration.
e. Mild: 2 to 3 loose stools in 24 hours; moderate: 4 to 5 loose stools in 24 hours; severe: 6 or more loose stools in 24 hours.
f. Severity was not collected for use of antipyretic or pain medication.

Unsolicited Adverse Events

Overall, the 401 participants who received a first booster dose of Pfizer-BioNTech COVID-19 Vaccine had a median follow-up time of 1.3 months after the booster dose through the cutoff date.

In an analysis of all unsolicited adverse events reported in participants 5 through 11 years of age (N=401) through up to 1 month after a first booster dose, lymphadenopathy (n=10, 2.5%) was an adverse reaction not already captured by solicited local and systemic reactions.

Serious Adverse Events

No serious adverse events were reported after the first booster dose through the cutoff date.

Pfizer-BioNTech COVID-19 Vaccine (Original Monovalent) Administered as a First Booster Dose Following Vaccination with Another Authorized or Approved COVID-19 Vaccine

The safety of a Pfizer-BioNTech COVID-19 Vaccine booster dose in individuals who completed primary vaccination with another authorized or approved COVID-19 Vaccine (heterologous booster dose) is inferred from the safety of a Pfizer-BioNTech COVID-19 Vaccine (30 mcg modRNA) booster dose administered following completion of Pfizer-BioNTech COVID-19 Vaccine primary series (homologous booster dose) and from data from an independent National Institutes of Health (NIH) study Phase 1/2 open-label clinical trial (NCT04889209) conducted in the United States that evaluated a heterologous booster dose of the Pfizer-BioNTech COVID-19 Vaccine. In this study, participants who had completed primary vaccination with a Moderna COVID-19 Vaccine 2-dose series (N=151), a Janssen COVID-19 Vaccine single dose (N=156), or a Pfizer-BioNTech COVID-19 Vaccine 2-dose series (N=151) at least 12 weeks prior to enrollment and who reported no history of SARS-CoV-2 infection were randomized 1:1:1 to receive a booster dose of 1 of 3 vaccines: Moderna

COVID-19 Vaccine, Janssen COVID-19 Vaccine, or Pfizer-BioNTech COVID-19 Vaccine. Adverse events were assessed through 28 days after the booster dose. An overall review of adverse reactions reported in the study following the Pfizer-BioNTech COVID-19 Vaccine heterologous booster dose did not identify any new safety concerns, as compared with adverse reactions reported following Pfizer-BioNTech COVID-19 Vaccine primary series doses or a homologous booster dose.

Pfizer-BioNTech COVID-19 Vaccine (Original Monovalent) Administered as a Second Booster Dose Following Primary and Booster Vaccination with Another Authorized or Approved COVID-19 Vaccine

Safety surveillance data from the Ministry of Health of Israel on the administration of approximately 700,000 fourth doses of the Pfizer-BioNTech COVID-19 Vaccine (30 mcg modRNA) given at least 4 months after the third dose in participants 18 years of age and older (approximately 600,000 of whom were 60 years of age and older) revealed no new safety concerns.

Pfizer-BioNTech COVID-19 Vaccine, Bivalent (Original and Omicron BA.4/BA.5)

Study 5 (NCT05472038) enrolled participants 12 years of age and older to receive a booster (fourth dose) of Pfizer-BioNTech COVID-19 Vaccine, Bivalent (30 mcg modRNA). In Study 5, all participants 12 years of age and older are being monitored for safety throughout the study [through 6 months after the booster (fourth dose)].

Study 6 (NCT05543616) enrolled participants 6 months through 11 years of age to receive a booster (fourth dose) of Pfizer-BioNTech COVID-19 Vaccine, Bivalent.

In Study 6, all participants 6 months through 4 years of age were monitored for solicited local and systemic reactions and use of antipyretic medication after the vaccination in an electronic diary. Participants are being monitored for safety throughout the study [through 6 months after the booster (fourth dose)]. Tables 10 through 13 present the frequency and severity of solicited local and systemic reactions, within 7 days following a booster (fourth dose) of Pfizer-BioNTech COVID-19 Vaccine, Bivalent in participants 6 through 23 months of age and 2 through 4 years of age who were previously vaccinated with a 3-dose primary series of Pfizer-BioNTech COVID-19 Vaccine (Original monovalent).

Participants 12 Years of Age and Older Who Received a Booster Dose with Pfizer-BioNTech COVID-19 Vaccine, Bivalent (Original and Omicron BA.4/BA.5)

A subset of Study 5 Phase 2/3 participants 12 through 17 years of age (n=107), 18 through 55 years of age (n=103) and 56 years of age and older (n=106) previously vaccinated with a 2-dose primary series and 1 booster dose of Pfizer-BioNTech COVID-19 Vaccine (Original monovalent, 30 mcg modRNA), received a second booster dose with Pfizer-BioNTech COVID-19 Vaccine, Bivalent (Original and Omicron BA.4/BA.5) (30 mcg modRNA).

The participants received the second booster dose a median of 9.9 months (range 5.5 to 14.3 months) after receiving the first booster dose and had a median follow-up time of 1.6 months up to a data cutoff date of October 12, 2022. The median age was 40.0 years, 53.2% were male, 46.8% were female, 81.3% were White, 9.2% were Hispanic/Latino, 5.1% were Asian, and 10.8% were Black or African American.

Unsolicited Adverse Events

In the following analysis of Study 5, 316 participants 12 years of age and older who received a second booster of Pfizer-BioNTech COVID-19 Vaccine, Bivalent had a median follow-up time of 1.6 months (range 1.3 to 1.8 months) to the cutoff date October 12, 2022.

Serious Adverse Events
Serious adverse events were reported in the 1 participant (considered unrelated to the vaccine) from the study vaccination through 1 month post vaccination.

Non-Serious Adverse Events
Lymphadenopathy 2 days post-vaccination, considered related to vaccination, was reported in 1 (0.3%) participant 12 years of age and older.

Participants 5 Through 11 Years of Age Who Received a Booster Dose with Pfizer-BioNTech COVID-19 Vaccine, Bivalent (Original and Omicron BA.4/BA.5)

In Study 6, 113 participants 5 through 11 years of age previously vaccinated with a 2-dose primary series and 1 booster dose of Pfizer-BioNTech COVID-19 Vaccine (Original monovalent, 10 mcg modRNA) received a booster (fourth dose) with Pfizer-BioNTech COVID-19 Vaccine, Bivalent (Original and Omicron BA.4/BA.5) (10 mcg modRNA).

Participants received a booster (fourth dose) with Pfizer-BioNTech COVID-19, Bivalent 2.6 to 8.5 months after receiving their third dose with Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) and had a median follow-up time of 1.6 months (range 1.1 to 2.3 months) up to a data cutoff date of November 25, 2022. Their median age was 9 years (range 5 through 11 years of age), 50.4% were male and 49.6% were female, 58.4% were White, 20.4% were Hispanic/Latino, 19.5% were multi-racial, 11.5% were Asian, and 8.0% were Black or African American.

Unsolicited Adverse Events

In the following analysis of Study 6, 113 participants 5 through 11 years of age who received a booster (fourth dose) with the Pfizer-BioNTech COVID-19 Vaccine, Bivalent had a median follow-up time of 1.6 months (range 1.1 to 2.3 months) to the cutoff date (November 25, 2022).

Serious Adverse Events
No serious adverse events were reported in the 113 participants 5 through 11 years of age from the study vaccination through 1 month post vaccination.

Non-Serious Adverse Events
Lymphadenopathy 2 days post-vaccination, considered related to vaccination, was reported in 1 (0.9%) participant 5 through 11 years of age.

Participants 2 Through 4 Years of Age Who Received a Booster Dose with Pfizer-BioNTech COVID-19 Vaccine, Bivalent (Original and Omicron BA.4/BA.5)

In a subset of Study 6, 36 participants 2 through 4 years of age previously vaccinated with a 3-dose primary series of Pfizer-BioNTech COVID-19 Vaccine (Original monovalent, 3 mcg modRNA)

received a booster (fourth dose) with Pfizer-BioNTech COVID-19 Vaccine, Bivalent (Original and Omicron BA.4/BA.5) (3 mcg modRNA).

Participants received a booster (fourth dose) with Pfizer-BioNTech COVID-19 Vaccine, Bivalent 2.2 to 8.5 months after receiving their third dose with Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) and had a median follow-up time of 1.9 months (range 1.6 to 2.3 months) up to a data cutoff date of November 25, 2022. Their median age was 2 years (range 2 through 4 years of age), 55.6% were male and 44.4% were female, 61.1% were White, 30.6% were Hispanic/Latino, 22.2% were multi-racial, 11.1% were Asian, and 5.6% were Black or African American.

Solicited Local and Systemic Adverse Reactions

Table 10 and Table 11 present the frequency and severity of reported solicited local reactions and systemic reactions, respectively, within 7 days of a booster (fourth dose) of Pfizer-BioNTech COVID-19 Vaccine, Bivalent.

The mean duration of pain at the injection site was 1.1 days (range 1 to 2 days), for redness 1.3 days (range 1 to 2 days), and for swelling 3 days for participants 2 through 4 years of age.

Table 10: Local Adverse Reactions, by Maximum Severity, Within 7 Days After a Booster (Fourth Dose) – Participants 2 through 4 Years of Age – Safety Population

	Pfizer-BioNTech COVID-19 Vaccine, Bivalent (Original and Omicron BA.4/BA.5) 3 mcg modRNA N[a]=36 n[b] (%)
Redness[c]	
Any (≥0.5 cm)	3 (8.3)
Mild	2 (5.6)
Moderate	1 (2.8)
Swelling[c]	
Any (≥0.5 cm)	1 (2.8)
Mild	0
Moderate	1 (2.8)
Pain at the injection site[d]	
Any	10 (27.8)
Mild	8 (22.2)
Moderate	2 (5.6)

Note: Reactions were collected in the electronic diary (e-diary) and at unscheduled clinical assessments from Day 1 through Day 7 after the study vaccination. Reactions reported as adverse events in the case report form within 7 days after the study vaccination were also included in the analysis; the severity of these events is based on the grading scale in the adverse event section of the case report form.

a. N = Number of participants reporting at least 1 yes or no response for the specified reaction after the specified dose.
b. n = Number of participants with the specified characteristic.
c. Mild: ≥0.5 to 2.0 cm; Moderate: >2.0 to 7.0 cm; Severe: >7.0 cm. There were no reports of severe redness or swelling.
d. Mild: does not interfere with activity; Moderate: interferes with activity; Severe: prevents daily activity. There were no reports of severe pain at injection site.

Table 11: Frequency and Percentages of Participants with Solicited Systemic Reactions, by Maximum Severity, Within 7 Days After a Booster (Fourth Dose) – Participants 2 Through 4 Years of Age – Safety Population

	Pfizer-BioNTech COVID-19 Vaccine, Bivalent (Original and Omicron BA.4/BA.5) 3 mcg modRNA N[a]=36 n[b] (%)
Fever	
≥38.0°C	0
Fatigue[c]	
Any	11 (30.6)
Mild	6 (16.7)
Moderate	5 (13.9)
Headache[c]	
Any	1 (2.8)
Mild	1 (2.8)
Chills[c]	
Any	1 (2.8)
Mild	1 (2.8)
Vomiting[d]	
Any	1 (2.8)
Mild	1 (2.8)
Diarrhea[e]	
Any	2 (5.6)
Mild	1 (2.8)
Moderate	1 (2.8)
New or worsened muscle pain[c]	
Any	0
New or worsened joint pain[c]	
Any	1 (2.8)
Mild	1 (2.8)
Use of antipyretic or pain medication[f]	1 (2.8)

Note: Events and use of antipyretic or pain medication were collected in the electronic diary (e-diary) and at unscheduled clinical assessments from Day 1 through Day 7 after the study vaccination. Events reported as adverse events in the case report form within 7 days after the study vaccination were also included in the analysis; the severity of these events is based on the grading scale in the adverse event section of the case report form.

a. N = Number of participants reporting at least 1 yes or no response for the specified event after the study vaccination.
b. n = Number of participants with the specified characteristic.
c. Mild: does not interfere with activity; moderate: some interference with activity; severe: prevents daily activity. There were no reports of severe fatigue or reports of moderate or severe headaches, chills, or new or worsened joint pain.
d. Mild: 1 to 2 times in 24 hours; Moderate: >2 times in 24 hours; Severe: requires intravenous hydration. There were no reports of moderate or severe vomiting.
e. Mild: 2 to 3 loose stools in 24 hours; moderate: 4 to 5 loose stools in 24 hours; severe: 6 or more loose stools in 24 hours. There were no reports of severe diarrhea.
f. Severity was not collected for use of antipyretic or pain medication.

Unsolicited Adverse Events

Participants 2 through 4 years of age who received a booster (fourth dose) with the Pfizer-BioNTech COVID-19 Vaccine, Bivalent had a median follow-up time of 1.9 months (range 1.6 to 2.3 months) to the cutoff date (November 25, 2022).

Serious Adverse Events
No serious adverse events were reported in the 36 participants 2 through 4 years of age from the study vaccination through 1 month post vaccination.

Participants 6 Through 23 Months of Age Who Received a Booster Dose with Pfizer-BioNTech COVID-19 Vaccine, Bivalent (Original and Omicron BA.4/BA.5)

In a subset of Study 6, 24 participants 6 through 23 months previously vaccinated with a 3-dose primary series of Pfizer-BioNTech COVID-19 Vaccine (Original monovalent, 3 mcg modRNA) received a booster (fourth dose) of Pfizer-BioNTech COVID-19 Vaccine, Bivalent (Original and Omicron BA.4/BA.5) (3 mcg modRNA).

Participants received a booster dose with Pfizer-BioNTech COVID-19 Vaccine, Bivalent 2.1 to 8.6 months after receiving their third dose with Pfizer-BioNTech COVID-19 and had a median follow-up time of 1.6 months (range 1.5 to 2.3 months) up to a data cutoff date of November 25, 2022. Their median age was 19 months (range 12 through 23 months), 58.3% were female and 41.7% were male, 54.2% were White, 20.8% were Asian, 20.8% were multi-racial, 16.7% were Hispanic/Latino, and 4.2% were Black or African American.

Solicited Local and Systemic Adverse Reactions

Table 12 and Table 13 present the frequency and severity of reported solicited local reactions and systemic reactions, respectively, within 7 days of a booster (fourth dose) of Pfizer-BioNTech COVID-19 Vaccine, Bivalent.

The duration of injection site tenderness, swelling and redness for all events observed was 1 day.

Table 12: Local Adverse Reactions, by Maximum Severity, Within 7 Days After a Booster (Fourth Dose) – Participants 6 Through 23 Months of Age – Safety Population

	Pfizer-BioNTech COVID-19 Vaccine, Bivalent (Original and Omicron BA.4/BA.5) 3 mcg modRNA N[a]=24* n[b] (%)
Redness[c]	
Any (≥0.5 cm)	2 (8.3)
Mild	2 (8.3)
Swelling[c]	
Any (≥0.5 cm)	1 (4.2)
Mild	1 (4.2)
Tenderness at the injection site[d]	
Any	1 (4.3)
Mild	1 (4.3)

Note: Reactions were collected in the electronic diary (e-diary) and at unscheduled clinical assessments from Day 1 through Day 7 after the study vaccination. Reactions reported as adverse events in the case report form within 7 days after the study vaccination were also included in the analysis; the severity of these events is based on the grading scale in the adverse event section of the case report form.

* N = 23 for tenderness at the injection site.

a. N = Number of participants reporting at least 1 yes or no response for the specified reaction after the specified dose.

b. n = Number of participants with the specified characteristic.

c. Mild: ≥0.5 to 2.0 cm; Moderate: >2.0 to 7.0 cm; Severe: >7.0 cm. There were no reports of moderate or severe redness or swelling.

d. Mild: hurts if gently touched; Moderate: hurts if gently touched with crying; Severe: causes limitation of limb movement. There were no reports of moderate or severe tenderness at the injection site.

Table 13: Frequency and Percentages of Participants with Solicited Systemic Reactions, by Maximum Severity, Within 7 Days After a Booster (Fourth Dose) – Participants 6 Through 23 Months of Age – Safety Population

	Pfizer-BioNTech COVID-19 Vaccine, Bivalent (Original and Omicron BA.4/BA.5) 3 mcg modRNA N[a]=24* n[b] (%)
Fever[c]	
≥38.0°C	1 (4.2)
≥38.0°C to 38.4°C	1 (4.2)
Decreased appetite[d]	
Any	1 (4.5)
Mild	1 (4.5)
Drowsiness[e]	
Any	2 (9.1)
Mild	2 (9.1)
Irritability[f]	
Any	4 (18.2)
Mild	3 (13.6)
Moderate	1 (4.5)
Use of antipyretic or pain medication[g]	2 (8.3)

Note: Events and use of antipyretic or pain medication were collected in the electronic diary (e-diary) and at unscheduled clinical assessments from Day 1 through Day 7 after the study vaccination. Events reported as adverse events in the case report form within 7 days after the study vaccination were also included in the analysis; the severity of these events is based on the grading scale in the adverse event section of the case report form.

* N = 22 for decreased appetite, drowsiness, and irritability.

a. N = Number of participants reporting at least 1 yes or no response for the specified event after the study vaccination.

b. n = Number of participants with the specified characteristic.

c. There were no reports of fever >38.4°C.

d. Mild: decreased interest in eating; Moderate: decreased oral intake; Severe: refusal to feed. There were no reports of moderate or severe decreased appetite.

e. Mild: increased or prolonged sleeping bouts; Moderate: slightly subdued interfering with daily activity; Severe: disabling; not interested in usual daily activity. There were no reports of moderate or severe drowsiness.

f. Mild: easily consolable; Moderate: requiring increased attention; Severe: inconsolable; crying cannot be comforted. There were no reports of severe irritability.

g. Severity was not collected for use of antipyretic or pain medication.

Unsolicited Adverse Events

Participants 6 through 23 months of age who received a booster (fourth dose) with the Pfizer-BioNTech COVID-19 Vaccine, Bivalent had a median follow-up time of 1.6 months (range 1.5 to 2.3 months) to the cutoff date (November 25, 2022). In an analysis of all unsolicited adverse events reported following the booster dose through 1 month after the booster dose, the adverse reaction not already captured by solicited local and systemic reactions was injection site pain (n=1; 4.2%).

Serious Adverse Events
No serious adverse events were reported in the 24 participants 6 through 23 months of age from the study vaccination through 1 month post vaccination.

Non-Serious Adverse Events
Non-serious adverse events in participants 6 through 23 months of age from the study vaccination through 1 month post vaccination were reported in 3 (12.5%) Pfizer-BioNTech COVID-19 Vaccine, Bivalent recipients. Non-serious adverse events considered related to vaccination by the study investigator were fatigue (n=1; 4.2%) and injection site pain (n=1; 4.2%).

Bivalent Vaccine (Original and Omicron BA.1)

Bivalent Vaccine (Original and Omicron BA.1) Administered as a Second Booster Dose

In Study 4, a total of 610 participants greater than 55 years of age previously vaccinated with a 2-dose primary series and 1 booster dose of Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) went on to receive a second booster dose with either Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) or the bivalent vaccine (Original and Omicron BA.1).

The 305 participants greater than 55 years who received a second booster dose with Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) received it 5.3 to 13.1 months after receiving the first booster dose and had a median follow-up time of 1.8 months up to a data cutoff date of May 16, 2022. Their median age was 66 years (range 56 through 87 years of age), 47.5% were male and 52.5% were female, 87.9% were White, 18.7% were Hispanic/Latino, 4.3% were Asian, and 6.2% were Black or African American.

The 305 participants greater than 55 years who received a second booster dose with the bivalent vaccine (Original and Omicron BA.1) received it 4.7 to 11.5 months after receiving the first booster dose and had a median follow-up time of 1.7 months up to a data cutoff date of May 16, 2022. Their median age was 67 years (range 56 through 85 years of age), 53.1% were male and 46.9% were female, 89.8% were White, 14.8% were Hispanic/Latino, 5.2% were Asian, and 4.3% were Black or African American.

Unsolicited Adverse Events

Overall, the participants who received a second booster dose with the bivalent vaccine (Original and Omicron BA.1) had a median follow-up time of 1.7 months (range 1.0 to 2.0 months) to the cutoff date (May 16, 2022).

In an analysis of all unsolicited adverse events reported following the second booster dose, through 1 month after the booster dose, those assessed as adverse reactions not already captured by

solicited local and systemic reactions were lymphadenopathy (n=1, 0.3%) for the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) and (n=1, 0.3%) for the bivalent vaccine (Original and Omicron BA.1), nausea (n=1, 0.3%) for the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) and (n=1, 0.3%) for the bivalent vaccine (Original and Omicron BA.1), and malaise (n=0) for the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) and (n=1, 0.3%) for the bivalent vaccine (Original and Omicron BA.1).

Serious Adverse Events
Serious adverse events up to 1 month after the second booster dose in ongoing follow-up were reported by no Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) recipients and by 1 bivalent vaccine (Original and Omicron BA.1) recipient (1 serious adverse event considered unrelated to the vaccine).

6.2 Postmarketing Experience

The following adverse reactions have been identified during postmarketing use of COMIRNATY, Pfizer-BioNTech COVID-19 Vaccine and Pfizer-BioNTech COVID-19 Vaccine, Bivalent. Because these reactions are reported voluntarily, it is not always possible to reliably estimate their frequency or establish a causal relationship to vaccine exposure.

Cardiac Disorders: myocarditis, pericarditis
Gastrointestinal Disorders: diarrhea, vomiting
Immune System Disorders: severe allergic reactions, including anaphylaxis, and other hypersensitivity reactions (e.g., rash, pruritus, urticaria, angioedema)
Musculoskeletal and Connective Tissue Disorders: pain in extremity (arm)
Nervous System Disorders: syncope, dizziness, febrile seizures

6.3 Required Reporting for Adverse Events and Vaccine Administration Errors

Vaccination providers must report the listed events following administration of the Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula)[9] to the Vaccine Adverse Event Reporting System (VAERS)

- Vaccine administration errors whether or not associated with an adverse event
- Serious adverse events* (irrespective of attribution to vaccination)
- Cases of myocarditis
- Cases of pericarditis
- Cases of Multisystem Inflammatory Syndrome (MIS)
- Cases of COVID-19 that results in hospitalization or death

*Serious Adverse Events are defined as:

- Death;
- A life-threatening adverse event;
- Inpatient hospitalization or prolongation of existing hospitalization;
- A persistent or significant incapacity or substantial disruption of the ability to conduct normal life functions;
- A congenital anomaly/birth defect;

[9] Vaccination providers administering COMIRNATY (COVID-19 Vaccine, mRNA) (2024-2025 Formula) under EUA must adhere to the same reporting requirements.

- An important medical event that based on appropriate medical judgement may jeopardize the individual and may require medical or surgical intervention to prevent one of the outcomes listed above.

Instructions for Reporting to VAERS

Vaccination providers should complete and submit a VAERS form to FDA using one of the following methods:

- Complete and submit the report online: https://vaers.hhs.gov/reportevent.html or
- If you are unable to submit this form electronically, you may fax it to VAERS at 1-877-721-0366. If you need additional help submitting a report, you may call the VAERS toll-free information line at 1-800-822-7967 or send an email to info@vaers.org.

IMPORTANT: When reporting adverse events or vaccine administration errors to VAERS, please complete the entire form with detailed information. It is important that the information reported to FDA be as detailed and complete as possible. Information to include:

- Patient demographics (e.g., patient name, date of birth)
- Pertinent medical history
- Pertinent details regarding admission and course of illness
- Concomitant medications
- Timing of adverse event(s) in relationship to administration of Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula)
- Pertinent laboratory and virology information
- Outcome of the event and any additional follow-up information if it is available at the time of the VAERS report. Subsequent reporting of follow-up information should be completed if additional details become available.

The following steps are highlighted to provide the necessary information for safety tracking:

1. In Box 17, provide information on Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) and any other vaccines administered on the same day; and in Box 22, provide information on any other vaccines received within one month prior.
2. In Box 18, description of the event:
   a. Write “Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) EUA” as the first line
   b. Provide a detailed report of vaccine administration error and/or adverse event. It is important to provide detailed information regarding the patient and adverse event/medication error for ongoing safety evaluation of this unapproved vaccine. Please see information to include listed above.
3. Contact information:
   a. In Box 13, provide the name and contact information of the prescribing healthcare provider or institutional designee who is responsible for the report.
   b. In Box 14, provide the name and contact information of the best doctor/healthcare professional to contact about the adverse event.
   c. In Box 15, provide the address of the facility where vaccine was given (NOT the healthcare provider’s office address).

Other Reporting Instructions

Vaccination providers may report to VAERS other adverse events that are not required to be reported using the contact information above.

To the extent feasible, report adverse events to Pfizer Inc. using the contact information below or by providing a copy of the VAERS form to Pfizer Inc.

Website	Fax number	Telephone number
https://www.pfizersafetyreporting.com	1-866-635-8337	1-800-438-1985

7 DRUG INTERACTIONS

There are no data to assess the concomitant administration of Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) with other vaccines.

8 USE IN SPECIFIC POPULATIONS

8.1 Pregnancy

Risk Summary

All pregnancies have a risk of birth defect, loss, or other adverse outcomes. In the U.S. general population, the estimated background risk of major birth defects and miscarriage in clinically recognized pregnancies is 2% to 4% and 15% to 20%, respectively. Available data on COMIRNATY, Pfizer-BioNTech COVID-19 Vaccine, Bivalent or Pfizer-BioNTech COVID-19 Vaccine administered to pregnant women are insufficient to inform vaccine-associated risks in pregnancy.

A developmental toxicity study has been performed in female rats administered the equivalent of a single human dose of Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) on 4 occasions, twice prior to mating and twice during gestation. These studies revealed no evidence of harm to the fetus due to the vaccine (*see Animal Data*).

Clinical Considerations

Disease-Associated Maternal and/or Embryo/Fetal Risk

Pregnant individuals infected with SARS-CoV-2 are at increased risk of severe COVID-19 compared with non-pregnant individuals.

Data

Animal Data

In a developmental toxicity study, 0.06 mL of a vaccine formulation containing the same quantity of nucleoside-modified messenger ribonucleic acid (modRNA) (30 mcg) and other ingredients included in a single human dose of Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) was administered to female rats by the intramuscular route on 4 occasions: 21 and 14 days prior to

mating, and on gestation days 9 and 20. No vaccine−related adverse effects on female fertility, fetal development, or postnatal development were reported in the study.

8.2 Lactation

Risk Summary

It is not known whether Pfizer-BioNTech COVID-19 Vaccine is excreted in human milk. Data are not available to assess the effects of Pfizer-BioNTech COVID-19 Vaccine on the breastfed infant or on milk production/excretion. The developmental and health benefits of breastfeeding should be considered along with the mother's clinical need for Pfizer-BioNTech COVID-19 Vaccine and any potential adverse effects on the breastfed child from Pfizer-BioNTech COVID-19 Vaccine or from the underlying maternal condition. For preventive vaccines, the underlying maternal condition is susceptibility to disease prevented by the vaccine.

8.4 Pediatric Use

Pfizer-BioNTech COVID-19 Vaccine is authorized for use in individuals 6 months through 11 years of age.

Pfizer-BioNTech COVID-19 Vaccine is not authorized for use in individuals younger than 6 months of age or individuals 12 years of age and older.

8.6 Use in Immunocompromised Individuals

As reported in an independent publication (*Kamar N, Abravanel F, Marion O, et al. Three doses of an mRNA Covid-19 vaccine in solid-organ transplant recipients. N Engl J Med*), a single arm study has been conducted in 101 individuals who had undergone various solid organ transplant procedures (heart, kidney, liver, lung, pancreas) 97±8 months previously. A third dose of the Original monovalent Pfizer-BioNTech COVID-19 Vaccine was administered to 99 of these individuals approximately 2 months after they had received a second dose. Following the third dose, the adverse event profile was similar to that after the second dose and no grade 3 or grade 4 events were reported in recipients who were followed for 1 month following post Dose 3. Among the 59 patients who had been seronegative before the third dose, 26 (44%) were seropositive at 4 weeks after the third dose. All 40 patients who had been seropositive before the third dose were still seropositive 4 weeks later. The prevalence of anti-SARS-CoV-2 antibodies was 68% (67 of 99 patients) 4 weeks after the third dose.

Patients should still be counseled to maintain physical precautions to help prevent COVID-19. In addition, close contacts of immunocompromised persons should be vaccinated as appropriate for their health status.

11 DESCRIPTION

The Pfizer-BioNTech COVID-19 Vaccine does not contain preservative. The vial stoppers are not made with natural rubber latex.

Multiple Dose Vials with Yellow Caps and Labels with Yellow Borders

The Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) in multiple dose vials with yellow caps and labels with yellow borders is supplied as a frozen suspension; each vial must be diluted with 1.1 mL of sterile 0.9% Sodium Chloride Injection, USP prior to use to form the vaccine.

After dilution, each 0.3 mL dose is formulated to contain 3 mcg of nucleoside-modified messenger RNA (modRNA) encoding the viral spike (S) glycoprotein of SARS-CoV-2 Omicron variant lineage KP.2.

Each 0.3 mL dose also includes the following ingredients: lipids (0.04 mg ((4-hydroxybutyl)azanediyl)bis(hexane-6,1-diyl)bis(2-hexyldecanoate), 0.005 mg 2[(polyethylene glycol)-2000]-N,N-ditetradecylacetamide, 0.01 mg 1,2-distearoyl-sn-glycero-3-phosphocholine, and 0.02 mg cholesterol), 9.4 mg sucrose, 0.02 mg tromethamine, and 0.12 mg tromethamine hydrochloride. The diluent (sterile 0.9% Sodium Chloride Injection, USP) contributes 1.88 mg sodium chloride per dose.

Single Dose Vials with Blue Caps and Labels with Blue Borders

The Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) in single dose vials with blue caps and labels with blue borders is supplied as a frozen suspension. This presentation does not need to be diluted.

Each 0.3 mL dose is formulated to contain 10 mcg of a modRNA encoding the viral spike (S) glycoprotein of SARS-CoV-2 Omicron variant lineage KP.2.

Each 0.3 mL dose also includes the following ingredients: lipids (0.14 mg ((4-hydroxybutyl)azanediyl)bis(hexane-6,1-diyl)bis(2-hexyldecanoate), 0.02 mg 2[(polyethylene glycol)-2000]-N,N-ditetradecylacetamide, 0.03 mg 1,2-distearoyl-sn-glycero-3-phosphocholine, and 0.06 mg cholesterol), 31 mg sucrose, 0.06 mg tromethamine, and 0.4 mg tromethamine hydrochloride.

12 CLINICAL PHARMACOLOGY

The modRNA in the Pfizer-BioNTech COVID-19 Vaccine is formulated in lipid particles, which enable delivery of the RNA into host cells to allow expression of the SARS-CoV-2 S antigen. The vaccine elicits an immune response to the S antigen, which protects against COVID-19.

14 CLINICAL STUDIES

The effectiveness of Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) for individuals 6 months through 11 years of age is based on:

- effectiveness of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) in individuals 6 months of age and older, and
- immunogenicity of Pfizer-BioNTech COVID-19 Vaccine, Bivalent in individuals 6 months through 4 years of age.

14.1 Efficacy of 2-Dose Primary Series of Pfizer-BioNTech COVID-19 Vaccine (Original Monovalent) in Participants 16 Years of Age and Older

Study 2 is a multicenter, multinational, Phase 1/2/3, randomized, placebo-controlled, observer-blind, dose-finding, vaccine candidate-selection, and efficacy study in participants 12 years of age and older. Randomization was stratified by age: 12 through 15 years of age, 16 through 55 years of age, or 56 years of age and older, with a minimum of 40% of participants in the ≥56-year stratum. The study excluded participants who were immunocompromised and those who had previous clinical or microbiological diagnosis of COVID-19. Participants with preexisting stable disease, defined as disease not requiring significant change in therapy or hospitalization for worsening disease during the 6 weeks before enrollment, were included as were participants with known stable infection with human immunodeficiency virus (HIV), hepatitis C virus (HCV), or hepatitis B virus (HBV).

In the Phase 2/3 portion of Study 2, based on data accrued through November 14, 2020, approximately 44,000 participants 12 years of age and older were randomized equally and received 2 doses of Pfizer-BioNTech COVID-19 Vaccine (30 mcg modRNA) or placebo separated by 21 days. Participants are planned to be followed for up to 24 months, for assessments of safety and efficacy against COVID-19.

The population for the analysis of the primary efficacy endpoint included 36,621 participants 12 years of age and older (18,242 in the Pfizer-BioNTech COVID-19 Vaccine group and 18,379 in the placebo group) who did not have evidence of prior infection with SARS-CoV-2 through 7 days after the second dose. Table 14 presents the specific demographic characteristics in the studied population.

Table 14: Demographics (population for the primary efficacy endpoint)[a]

	Pfizer-BioNTech COVID-19 Vaccine* (N=18,242) n (%)	**Placebo (N=18,379) n (%)**
Sex		
Male	9318 (51.1)	9225 (50.2)
Female	8924 (48.9)	9154 (49.8)
Age (years)		
Mean (SD)	50.6 (15.70)	50.4 (15.81)
Median	52.0	52.0
Min, max	(12, 89)	(12, 91)
Age group		
≥12 through 15 years[b]	46 (0.3)	42 (0.2)
≥16 through 17 years	66 (0.4)	68 (0.4)
≥16 through 64 years	14,216 (77.9)	14,299 (77.8)
≥65 through 74 years	3176 (17.4)	3226 (17.6)
≥75 years	804 (4.4)	812 (4.4)
Race		
White	15,110 (82.8)	15,301 (83.3)
Black or African American	1617 (8.9)	1617 (8.8)
American Indian or Alaska Native	118 (0.6)	106 (0.6)
Asian	815 (4.5)	810 (4.4)

	Pfizer-BioNTech COVID-19 Vaccine* (N=18,242) n (%)	Placebo (N=18,379) n (%)
Native Hawaiian or other Pacific Islander	48 (0.3)	29 (0.2)
Other[c]	534 (2.9)	516 (2.8)
Ethnicity		
Hispanic or Latino	4886 (26.8)	4857 (26.4)
Not Hispanic or Latino	13,253 (72.7)	13,412 (73.0)
Not reported	103 (0.6)	110 (0.6)
Comorbidities[d]		
Yes	8432 (46.2)	8450 (46.0)
No	9810 (53.8)	9929 (54.0)

* Pfizer-BioNTech COVID-19 Vaccine (Original monovalent, 30 mcg modRNA).

a. All eligible randomized participants who receive all vaccination(s) as randomized within the predefined window, have no other important protocol deviations as determined by the clinician, and have no evidence of SARS-CoV-2 infection prior to 7 days after Dose 2.

b. 100 participants 12 through 15 years of age with limited follow-up in the randomized population received at least 1 dose (49 in the vaccine group and 51 in the placebo group). Some of these participants were included in the efficacy evaluation depending on the population analyzed. They contributed to exposure information but with no confirmed COVID-19 cases, and did not affect efficacy conclusions.

c. Includes multi-racial and not reported.

d. Number of participants who have 1 or more comorbidities that increase the risk of severe COVID-19 disease
   - Chronic lung disease (e.g., emphysema and chronic bronchitis, idiopathic pulmonary fibrosis, and cystic fibrosis) or moderate to severe asthma
   - Significant cardiac disease (e.g., heart failure, coronary artery disease, congenital heart disease, cardiomyopathies, and pulmonary hypertension)
   - Obesity (body mass index ≥30 kg/m^2)
   - Diabetes (Type 1, Type 2 or gestational)
   - Liver disease
   - Human Immunodeficiency Virus (HIV) infection (not included in the efficacy evaluation)

The population in the primary efficacy analysis included all participants 12 years of age and older who had been enrolled from July 27, 2020, and followed for the development of COVID-19 through November 14, 2020. Participants 18 through 55 years of age and 56 years of age and older began enrollment from July 27, 2020, 16 through 17 years of age began enrollment from September 16, 2020, and 12 through 15 years of age began enrollment from October 15, 2020.

The vaccine efficacy information is presented in Table 15.

Table 15: Vaccine Efficacy – First COVID-19 Occurrence From 7 Days After Dose 2, by Age Subgroup – Participants Without Evidence of Infection and Participants With or Without Evidence of Infection Prior to 7 Days After Dose 2 – Evaluable Efficacy (7 Days) Population

First COVID-19 occurrence from 7 days after Dose 2 in participants without evidence of prior SARS-CoV-2 infection*			
Subgroup	**Pfizer-BioNTech COVID-19 Vaccine± Na=18,198 Cases n1b Surveillance Timec (n2d)**	**Placebo Na=18,325 Cases n1b Surveillance Timec (n2d)**	**Vaccine Efficacy % (95% CI)**
All subjects[e]	8 2.214 (17,411)	162 2.222 (17,511)	95.0 (90.3, 97.6)[f]
16 through 64 years	7 1.706 (13,549)	143 1.710 (13,618)	95.1 (89.6, 98.1)[g]
65 years and older	1 0.508 (3848)	19 0.511 (3880)	94.7 (66.7, 99.9)[g]
First COVID-19 occurrence from 7 days after Dose 2 in participants with or without evidence of prior SARS-CoV-2 infection			
Subgroup	**Pfizer-BioNTech COVID-19 Vaccine± Na=19,965 Cases n1b Surveillance Timec (n2d)**	**Placebo Na=20,172 Cases n1b Surveillance Timec (n2d)**	**Vaccine Efficacy % (95% CI)**
All subjects[e]	9 2.332 (18,559)	169 2.345 (18,708)	94.6 (89.9, 97.3)[f]
16 through 64 years	8 1.802 (14,501)	150 1.814 (14,627)	94.6 (89.1, 97.7)[g]
65 years and older	1 0.530 (4044)	19 0.532 (4067)	94.7 (66.8, 99.9)[g]

Note: Confirmed cases were determined by Reverse Transcription-Polymerase Chain Reaction (RT-PCR) and at least 1 symptom consistent with COVID-19 (symptoms included: fever; new or increased cough; new or increased shortness of breath; chills; new or increased muscle pain; new loss of taste or smell; sore throat; diarrhea; vomiting).

* Participants who had no evidence of past SARS-CoV-2 infection (i.e., N-binding antibody [serum] negative at Visit 1 and SARS-CoV-2 not detected by NAAT [nasal swab] at Visits 1 and 2), and had negative NAAT (nasal swab) at any unscheduled visit prior to 7 days after Dose 2 were included in the analysis.

± Pfizer-BioNTech COVID-19 Vaccine (Original monovalent, 30 mcg modRNA).

a. N = Number of participants in the specified group.

b. n1 = Number of participants meeting the endpoint definition.

c. Total surveillance time in 1000 person-years for the given endpoint across all participants within each group at risk for the endpoint. Time period for COVID-19 case accrual is from 7 days after Dose 2 to the end of the surveillance period.

d. n2 = Number of participants at risk for the endpoint.

e. No confirmed cases were identified in participants 12 through 15 years of age.

f. Credible interval for vaccine efficacy (VE) was calculated using a beta-binomial model with a beta (0.700102, 1) prior for θ=r(1-VE)/(1+r(1-VE)), where r is the ratio of surveillance time in the active vaccine group over that in the placebo group.

g. Confidence interval (CI) for vaccine efficacy is derived based on the Clopper and Pearson method adjusted to the surveillance time.

14.2 Efficacy of 2-Dose Primary Series of Pfizer-BioNTech COVID-19 Vaccine (Original Monovalent) in Participants 12 Through 15 Years of Age

A descriptive efficacy analysis of Study 2 has been performed in approximately 2,200 participants 12 through 15 years of age evaluating confirmed COVID-19 cases accrued up to a data cutoff date of March 13, 2021.

The efficacy information in participants 12 through 15 years of age is presented in Table 16.

Table 16: Vaccine Efficacy – First COVID-19 Occurrence From 7 Days After Dose 2: Without Evidence of Infection and With or Without Evidence of Infection Prior to 7 Days After Dose 2 – Blinded Placebo-Controlled Follow-up Period, Participants 12 Through 15 Years of Age Evaluable Efficacy (7 Days) Population

First COVID-19 occurrence from 7 days after Dose 2 in participants 12 through 15 years of age without evidence of prior SARS-CoV-2 infection*			
	Pfizer-BioNTech COVID-19 Vaccine± N[a]=1005 Cases n1[b] Surveillance Time[c] (n2[d])	**Placebo N[a]=978 Cases n1[b] Surveillance Time[c] (n2[d])**	**Vaccine Efficacy % (95% CI[e])**
Participants 12 through 15 years of age	0 0.154 (1001)	16 0.147 (972)	100.0 (75.3, 100.0)
First COVID-19 occurrence from 7 days after Dose 2 in participants 12 through 15 years of age with or without evidence of prior SARS-CoV-2 infection			
	Pfizer-BioNTech COVID-19 Vaccine± N[a]=1119 Cases n1[b] Surveillance Time[c] (n2[d])	**Placebo N[a]=1110 Cases n1[b] Surveillance Time[c] (n2[d])**	**Vaccine Efficacy % (95% CI[e])**
Participants 12 through 15 years of age	0 0.170 (1109)	18 0.163 (1094)	100.0 (78.1, 100.0)

Note: Confirmed cases were determined by Reverse Transcription-Polymerase Chain Reaction (RT-PCR) and at least 1 symptom consistent with COVID-19 (symptoms included: fever; new or increased cough; new or increased shortness of breath; chills; new or increased muscle pain; new loss of taste or smell; sore throat; diarrhea; vomiting).

* Participants who had no evidence of past SARS-CoV-2 infection (i.e., N-binding antibody [serum] negative at Visit 1 and SARS-CoV-2 not detected by NAAT [nasal swab] at Visits 1 and 2), and had negative NAAT (nasal swab) at any unscheduled visit prior to 7 days after Dose 2 were included in the analysis.

± Pfizer-BioNTech COVID-19 Vaccine (Original monovalent, 30 mcg modRNA).

a. N = Number of participants in the specified group.

b. n1 = Number of participants meeting the endpoint definition.

c. Total surveillance time in 1000 person-years for the given endpoint across all participants within each group at risk for the endpoint. Time period for COVID-19 case accrual is from 7 days after Dose 2 to the end of the surveillance period.
d. n2 = Number of participants at risk for the endpoint.
e. Confidence interval (CI) for vaccine efficacy is derived based on the Clopper and Pearson method adjusted for surveillance time.

14.3 Efficacy of 2-Dose Primary Series of Pfizer-BioNTech COVID-19 Vaccine (Original Monovalent) in Participants 5 Through 11 Years of Age

A descriptive efficacy analysis of Study 3 has been performed in 1,968 participants 5 through 11 years of age without evidence of infection prior to 7 days after Dose 2. This analysis evaluated confirmed symptomatic COVID-19 cases accrued up to a data cutoff date of October 8, 2021.

Table 17 presents the specific demographic characteristics in participants who did not have evidence of prior infection with SARS-CoV-2 through 7 days after the second dose.

Table 17: Demographics Characteristics – Participants Without Evidence of Infection Prior to 7 Days After Dose 2 – Phase 2/3 – 5 Through 11 Years of Age – Evaluable Efficacy Population

	Pfizer-BioNTech COVID-19 Vaccine* 10 mcg/Dose (N^a=1305) n^b (%)	**Placebo (N^a=663) n^b (%)**
Sex		
Male	679 (52.0)	343 (51.7)
Female	626 (48.0)	320 (48.3)
Age at Vaccination		
Mean (SD)	8.2 (1.93)	8.1 (1.98)
Median	8.0	8.0
Min, max	(5, 11)	(5, 11)
Race		
White	1018 (78.0)	514 (77.5)
Black or African American	76 (5.8)	48 (7.2)
American Indian or Alaska Native	<1.0%	<1.0%
Asian	86 (6.6)	46 (6.9)
Native Hawaiian or other Pacific Islander	<1.0%	<1.0%
Other[c]	110 (8.4)	52 (7.8)
Ethnicity		
Hispanic or Latino	243 (18.6)	130 (19.6)
Not Hispanic or Latino	1059 (81.1)	533 (80.4)
Not reported	<1.0%	<1.0%
Comorbidities[d]		
Yes	262 (20.1)	133 (20.1)
No	1043 (79.9)	530 (79.9)

* Pfizer-BioNTech COVID-19 Vaccine (Original monovalent, 10 mcg modRNA).

	Pfizer-BioNTech COVID-19 Vaccine* 10 mcg/Dose (N[a]=1305) n[b] (%)	Placebo (N[a]=663) n[b] (%)

a. N = number of participants in the specified group from the evaluable efficacy population with no evidence of SARS-CoV-2 infection prior to 7 days after Dose 2. This value is the denominator for the percentage calculations. Evaluable efficacy population included all eligible randomized participants who received all vaccination(s) as randomized within the predefined window, had no other important protocol deviations as determined by the clinician.
b. n = Number of participants with the specified characteristic.
c. Includes multi-racial and not reported.
d. Number of participants who have 1 or more comorbidities that increase the risk of severe COVID-19 disease: defined as participants who had at least 1 of the prespecified comorbidities based on MMWR 69(32);1081-1088 and/or obesity (BMI ≥ 95th percentile).

The descriptive vaccine efficacy results in participants 5 through 11 years of age without evidence of prior SARS-CoV-2 infection are presented in Table 18. None of the cases accrued met criteria for severe COVID-19 or multisystem inflammatory syndrome in children (MIS-C). No cases of COVID-19 were observed in either the vaccine group or the placebo group in participants with evidence of prior SARS-CoV-2 infection.

Table 18: Vaccine Efficacy – First COVID-19 Occurrence From 7 Days After Dose 2: Without Evidence of Infection Prior to 7 Days After Dose 2 – Phase 2/3 – Participants 5 Through 11 Years of Age Evaluable Efficacy Population

First COVID-19 occurrence from 7 days after Dose 2 in participants 5 through 11 years of age without evidence of prior SARS-CoV-2 infection*			
	Pfizer-BioNTech COVID-19 Vaccine± 10 mcg/dose N[a]=1305 Cases n1[b] Surveillance Time[c] (n2[d])	Placebo N[a]=663 Cases n1[b] Surveillance Time[c] (n2[d])	Vaccine Efficacy % (95% CI)
Participants 5 through 11 years of age	3 0.322 (1273)	16 0.159 (637)	90.7 (67.7, 98.3)

Note: Confirmed cases were determined by Reverse Transcription-Polymerase Chain Reaction (RT-PCR) and at least 1 symptom consistent with COVID-19 (symptoms included: fever; new or increased cough; new or increased shortness of breath; chills; new or increased muscle pain; new loss of taste or smell; sore throat; diarrhea; vomiting).

* Participants who had no evidence of past SARS-CoV-2 infection (i.e., N-binding antibody [serum] negative at Visit 1 and SARS-CoV-2 not detected by NAAT [nasal swab] at Visits 1 and 2), and had negative NAAT (nasal swab) at any unscheduled visit prior to 7 days after Dose 2 were included in the analysis.
± Pfizer-BioNTech COVID-19 Vaccine (Original monovalent, 10 mcg modRNA).
a. N = Number of participants in the specified group.
b. n1 = Number of participants meeting the endpoint definition.
c. Total surveillance time in 1000 person-years for the given endpoint across all participants within each group at risk for the endpoint. Time period for COVID-19 case accrual is from 7 days after Dose 2 to the end of the surveillance period.
d. n2 = Number of participants at risk for the endpoint.

14.4 Immunogenicity of 2-Dose Primary Series of Pfizer-BioNTech COVID-19 Vaccine (Original Monovalent) in Participants 5 Through 11 Years of Age

SARS-CoV-2 50% neutralizing antibody titers (NT50) 1 month after the primary series were compared between randomly selected subsets of Phase 2/3 participants 5 through 11 years of age from study C4591007 and the efficacy study C4591001 Phase 2/3 participants 16 through 25 years of age, using a microneutralization assay against the reference strain (USA_WA1/2020). The primary immunobridging analyses compared the geometric mean titers (using a geometric mean ratio [GMR]) and the seroresponse (defined as achieving at least 4-fold rise in SARS-CoV-2 NT50 from before Dose 1) rates in the evaluable immunogenicity population of participants without evidence of prior SARS-CoV-2 infection up to 1 month after Dose 2 in each group. The prespecified immunobridging criteria were met for both the GMR and the seroresponse difference (Table 19 and Table 20).

Table 19: SARS-CoV-2 GMTs (NT50) at 1 Month After Primary Series – Immunobridging Subset – Participants 5 Through 11 Years of Age (Study 3) and Participants 16 Through 25 Years of Age (Study 2) – Without Evidence of SARS-CoV-2 Infection up to 1 Month After Dose 2 – Evaluable Immunogenicity Population

		Pfizer-BioNTech COVID-19 Vaccine		GMT Ratio (95%CI) (5 Through 11 Years of Age/ 16 Through 25 Years of Age)[d,e]
		10 mcg/Dose* 5 Through 11 Years of Age n[a]=264	30 mcg/Dose± 16 Through 25 Years of Age n[a]=253	
Assay	Time Point[b]	GMT[c] (95% CI[c])	GMT[c] (95% CI[c])	
SARS-CoV-2 neutralization assay – NT50 (titer)[f]	1 month after Dose 2	1197.6 (1106.1, 1296.6)	1146.5 (1045.5, 1257.2)	1.04 (0.93, 1.18)

Abbreviations: CI = confidence interval; GMR = geometric mean ratio; GMT = geometric mean titer; LLOQ = lower limit of quantitation; NAAT = nucleic acid amplification test; NT50 = 50% neutralizing titer; SARS-CoV-2 = severe acute respiratory syndrome coronavirus 2.

Note: Participants who had no serological or virological evidence (up to 1 month post-Dose 2 blood sample collection) of past SARS-CoV-2 infection (i.e., N-binding antibody [serum] negative at pre-Dose 1 and 1 month after Dose 2, SARS-CoV-2 not detected by NAAT [nasal swab] at pre-Dose 1 and pre-Dose 2, and negative NAAT (nasal swab) at any unscheduled visit up to 1 month after Dose 2 blood collection) and had no medical history of COVID-19 were included in the analysis.

* Pfizer-BioNTech COVID-19 Vaccine (Original monovalent,10 mcg modRNA).

± Pfizer-BioNTech COVID-19 Vaccine (Original monovalent, 30 mcg modRNA).

a. n = Number of participants with valid and determinate assay results for the specified assay at the given dose/sampling time point.

b. Protocol-specified timing for blood sample collection.

c. GMTs and 2-sided 95% CIs were calculated by exponentiating the mean logarithm of the titers and the corresponding CIs (based on the Student t distribution). Assay results below the LLOQ were set to 0.5 × LLOQ.

d. GMT ratio and 2-sided 95% CIs were calculated by exponentiating the mean difference of the logarithms of the titers (5 through 11 years of age minus 16 through 25 years of age) and the corresponding CI (based on the Student t distribution).

e. Immunobridging is declared if the lower bound of the 2-sided 95% CI for the GMT ratio is greater than 0.67 and the point estimate of the GMR is ≥0.8.

f. SARS-CoV-2 NT50 were determined using the SARS-CoV-2 mNeonGreen Virus Microneutralization Assay. The assay uses a fluorescent reporter virus derived from the USA_WA1/2020 strain and virus neutralization is read on Vero cell monolayers. The sample NT50 is defined as the reciprocal serum dilution at which 50% of the virus is neutralized.

Table 20: Difference in Percentages of Participants with Seroresponse at 1 Month After Primary Series – Immunobridging Subset – Participants 5 Through 11 Years of Age (Study 3) and Participants 16 Through 25 Years of Age (Study 2) Without Evidence of Infection up to 1 Month After Dose 2 – Evaluable Immunogenicity Population

		Pfizer-BioNTech COVID-19 Vaccine		Difference in Seroresponse Rates %[e] (95% CI[f]) (5 Through 11 Years of Age minus 16 Through 25 Years of Age)[g]
		10 mcg/Dose* 5 Through 11 Years of Age N[a]=264	30 mcg/Dose± 16 Through 25 Years of Age N[a]=253	
Assay	Time Point[b]	n[c] (%) (95% CI[d])	n[c] (%) (95% CI[d])	
SARS-CoV-2 neutralization assay – NT50 (titer)[h]	1 month after Dose 2	262 (99.2) (97.3, 99.9)	251 (99.2) (97.2, 99.9)	0.0 (-2.0, 2.2)

Abbreviations: LLOQ = lower limit of quantitation; NAAT = nucleic acid amplification test; N-binding = SARS-CoV-2 nucleoprotein–binding; NT50 = 50% neutralizing titer 50; SARS-CoV-2 = severe acute respiratory syndrome coronavirus 2.

Note: Seroresponse is defined as achieving a ≥4-fold rise from baseline (before Dose 1). If the baseline measurement is below the LLOQ, a post-vaccination assay result ≥4 × LLOQ is considered a seroresponse

Note: Participants who had no serological or virological evidence (up to 1 month post-Dose 2 blood sample collection) of past SARS-CoV-2 infection (i.e., N-binding antibody [serum] negative at pre-Dose 1 and 1 month after Dose 2, SARS-CoV-2 not detected by NAAT [nasal swab] at pre-Dose 1 and pre-Dose 2, and negative NAAT (nasal swab) at any unscheduled visit up to 1 month after Dose 2 blood collection) and had no medical history of COVID-19 were included in the analysis.

* Pfizer-BioNTech COVID-19 Vaccine (Original monovalent, 10 mcg modRNA).

± Pfizer-BioNTech COVID-19 Vaccine (Original monovalent, 30 mcg modRNA).

a. N = number of participants with valid and determinate assay results both before vaccination and at 1 month after Dose 2. These values are the denominators for the percentage calculations.

b. Protocol-specified timing for blood sample collection.

c. n = Number of participants with seroresponse for the given assay at the given dose/sampling time point.

d. Exact 2-sided CI based on the Clopper and Pearson method.

e. Difference in proportions, expressed as a percentage (5 through 11 years of age minus 16 through 25 years of age).

f. 2-Sided CI, based on the Miettinen and Nurminen method for the difference in proportions, expressed as a percentage.

g. Immunobridging is declared if the lower bound of the 2-sided 95% CI for the difference in proportions is greater than -10.0% provided that the immunobridging criteria based on GMR were met.

h. SARS-CoV-2 NT50 were determined using the SARS-CoV-2 mNeonGreen Virus Microneutralization Assay. The assay uses a fluorescent reporter virus derived from the USA_WA1/2020 strain and virus neutralization is read on Vero cell monolayers. The sample NT50 is defined as the reciprocal serum dilution at which 50% of the virus is neutralized.

14.5 Effectiveness of 3-Dose Primary Series of Pfizer-BioNTech COVID-19 Vaccine (Original Monovalent) in Participants 6 Months Through 4 Years of Age

Study 3 is an ongoing Phase 1/2/3 multicenter, randomized, dose finding, open-label (Phase 1) and multinational, saline placebo-controlled, observer-blind, immunogenicity and efficacy (Phase 2/3) study to evaluate the safety and effectiveness of Pfizer-BioNTech COVID-19 Vaccine in individuals 6 months through 11 years of age. Randomization was stratified by age: 6 through 23 months of age, 2 through 4 years of age, or 5 through 11 years of age. The study excluded participants who were

immunocompromised and those who had previous clinical or microbiological diagnosis of COVID-19. Results from participants 6 months through 4 years of age are presented in this subsection. In Phase 2/3, a total of 1,776 participants 6 through 23 months of age and 2,750 participants 2 through 4 years of age were randomized 2:1 and received 3 doses of the Pfizer-BioNTech COVID-19 Vaccine or saline placebo.

Effectiveness in individuals 6 months through 4 years of age is based on a comparison of immune responses in this age group to individuals 16 through 25 years of age.

Immunogenicity in Participants 2 Through 4 Years of Age After a 3-Dose Primary Series

Immunogenicity analyses have been performed in the immunobridging subset of 143 Study 3 participants 2 through 4 years of age without evidence of infection up to 1 month after Dose 3 based on a data cutoff date of April 29, 2022.

The evaluable immunogenicity population without prior evidence of SARS-CoV-2 infection up to 1 month after Dose 3 of Pfizer-BioNTech COVID-19 Vaccine was comprised of 143 participants 2 through 4 years of age. Most participants in this analysis population were White 69.2%, with 5.6% Black or African American participants, 11.2% Asian participants, and 11.9% multi-racial participants. There were 11.2% Hispanic/Latino participants. The median age was 3.0 years and 44.1% of participants were male. There were 6.3% of participants reported as obese. In the evaluable immunogenicity population (regardless of evidence of prior infection), 11/204 participants (5.4%) were baseline positive for prior SARS-CoV-2 infection.

SARS-CoV-2 NT50 were compared between an immunogenicity subset of Phase 2/3 participants 2 through 4 years of age from Study 3 at 1 month after the 3-dose primary series and a randomly selected subset from Study 2 Phase 2/3 participants 16 through 25 years of age at 1 month after the 2-dose primary series, using a microneutralization assay against the reference strain (USA_WA1/2020). The primary immunobridging analyses compared the geometric mean titers (using a GMR) and the seroresponse (defined as achieving at least 4-fold rise in SARS-CoV-2 NT50 from before Dose 1) rates in the evaluable immunogenicity population of participants without evidence of prior SARS-CoV-2 infection up to 1 month after Dose 3 in participants 2 through 4 years of age and up to 1 month after Dose 2 in participants 16 through 25 years of age. The prespecified immunobridging criteria were met for both the GMR and the seroresponse difference (Table 21 and Table 22, respectively).

Table 21: SARS-CoV-2 GMTs (NT50) at 1 Month After Completion of Primary Vaccination – Immunobridging Subset – Participants 2 Through 4 Years of Age (Study 3) 1 Month After Dose 3 and Participants 16 Through 25 Years of Age (Study 2) 1 Month After Dose 2 – Without Evidence of SARS-CoV-2 Infection – Evaluable Immunogenicity Population

	Pfizer-BioNTech COVID-19 Vaccine		GMR (95%CI) (2 Through 4 Years of Age/16 Through 25 Years of Age)[c,d]
	3 mcg modRNA/Dose 2 Through 4 Years of Age (1 Month After Dose 3) n[a]=143	30 mcg modRNA/Dose 16 Through 25 Years of Age (1 Month After Dose 2) n[a]=170	
Assay	**GMT[b] (95% CI[b])**	**GMT[b] (95% CI[b])**	
SARS-CoV-2 neutralization assay – NT50 (titer)[e]	1535.2 (1388.2, 1697.8)	1180.0 (1066.6, 1305.4)	1.30 (1.13, 1.50)

Abbreviations: CI = confidence interval; GMR = geometric mean ratio; GMT = geometric mean titer; LLOQ = lower limit of quantitation; NAAT = nucleic acid amplification test; NT50 = 50% neutralizing titer; SARS-CoV-2 = severe acute respiratory syndrome coronavirus 2.

Note: Participants who had no serological or virological evidence [(up to 1 month after Dose 2 (Study 2) or 1 month after Dose 3 (Study 3) blood sample collection)] of past SARS-CoV-2 infection [(i.e., N-binding antibody [serum] negative at Dose 1, Dose 3 (Study 3) and 1 month after Dose 2 (Study 2) or 1 month after Dose 3 (Study 3), SARS-CoV-2 not detected by NAAT [nasal swab] at Dose 1, Dose 2, and Dose 3 (Study 3) study visits, and negative NAAT (nasal swab) at any unscheduled visit up to 1 month after Dose 2 (Study 2) or 1 month after Dose 3 (Study 3) blood collection)] and had no medical history of COVID-19 were included in the analysis.

a. n = Number of participants with valid and determinate assay results for the specified assay at the given dose/sampling time point.
b. GMTs and 2-sided 95% CIs were calculated by exponentiating the mean logarithm of the titers and the corresponding CIs (based on the Student t distribution). Assay results below the LLOQ were set to 0.5 ×LLOQ.
c. GMRs and 2-sided 95% CIs were calculated by exponentiating the mean difference of the logarithms of the titers ([2 through 4 years of age] – [16 through 25 years of age]) and the corresponding CI (based on the Student t distribution).
d. Immunobridging is declared if the lower bound of the 2-sided 95% CI for the GMR ratio is greater than 0.67 and the point estimate of the GMR is ≥0.8.
e. SARS-CoV-2 NT50 were determined using the SARS-CoV-2 mNeonGreen Virus Microneutralization Assay. The assay uses a fluorescent reporter virus derived from the USA_WA1/2020 strain and virus neutralization is read on Vero cell monolayers. The sample NT50 is defined as the reciprocal serum dilution at which 50% of the virus is neutralized.

Table 22: Difference in Percentages of Participants with Seroresponse at 1 Month After Completion of Primary Vaccination – Immunobridging Subset – Participants 2 Through 4 Years of Age (Study 3) 1 Month after Dose 3 and Participants 16 Through 25 Years of Age (Study 2) 1 Month after Dose 2 Without Evidence of Infection – Evaluable Immunogenicity Population

	Pfizer-BioNTech COVID-19 Vaccine		
	3 mcg modRNA/Dose 2 Through 4 Years of Age (1 Month After Dose 3)	30 mcg modRNA/Dose 16 Through 25 Years of Age (1 Month After Dose 2)	Difference in Seroresponse Rates %[d] (95% CI[e]) (2 Through 4 Years of Age minus 16 Through 25 Years of Age)[f]
Assay	**n[b] (%) (95% CI[c])**	**n[b] (%) (95% CI[c])**	
SARS-CoV-2 neutralization assay – NT50 (titer)[g]	141 (100.0) (97.4, 100.0)	168 (98.8) (95.8, 99.9)	1.2 (-1.5, 4.2)

Abbreviations: LLOQ = lower limit of quantitation; NAAT = nucleic acid amplification test; N-binding = SARS-CoV-2 nucleoprotein–binding; NT50 = 50% neutralizing titer 50; SARS-CoV-2 = severe acute respiratory syndrome coronavirus 2.

Note: Seroresponse is defined as achieving a ≥4-fold rise from baseline (before Dose 1). If the baseline measurement is below the LLOQ, a post-vaccination assay result ≥4 × LLOQ is considered a seroresponse.

Note: Participants who had no serological or virological evidence (up to 1 month after Dose 2 [(Study 2) or 1 month after Dose 3 (Study 3) blood sample collection)[of past SARS-CoV-2 infection [(i.e., N-binding antibody [serum] negative at pre-Dose 1, pre-Dose 3 (Study 3) and 1 month after Dose 2 (Study 2) or 1 month after Dose 3 (Study 3), SARS-CoV-2 not detected by NAAT [nasal swab] at pre-Dose 1, pre-Dose 2, and pre-Dose 3 (Study 3) study visits, and negative NAAT (nasal swab) at any unscheduled visit up to 1 month after Dose 2 (Study 2) or 1 month after Dose 3 (Study 3) blood collection)] and had no medical history of COVID-19 were included in the analysis.

a. N = number of participants with valid and determinate assay results both before vaccination and at 1 month after Dose 2. These values are the denominators for the percentage calculations.
b. n = Number of participants with seroresponse for the given assay at the given dose/sampling time point.
c. Exact 2-sided CI based on the Clopper and Pearson method.
d. Difference in proportions, expressed as a percentage ([2 through 4 years of age] – [16 through 25 years of age]).
e. 2-sided CI, based on the Miettinen and Nurminen method for the difference in proportions, expressed as a percentage.
f. Immunobridging is declared if the lower bound of the 2-sided 95% CI for the difference in proportions is greater than -10.0% provided that the immunobridging criteria based on GMR were met.
g. SARS-CoV-2 NT50 were determined using the SARS-CoV-2 mNeonGreen Virus Microneutralization Assay. The assay uses a fluorescent reporter virus derived from the USA_WA1/2020 strain and virus neutralization is read on Vero cell monolayers. The sample NT50 is defined as the reciprocal serum dilution at which 50% of the virus is neutralized.

Using a non-validated fluorescence focus reduction neutralization test assay against the Omicron variant of SARS-CoV-2 (BA.1), the NT50 GMT at 1 month after Dose 3 among a subset of 34 study participants without evidence of prior SARS-CoV-2 infection (82.5 [95% CI: 55.4, 122.9]) was increased compared to the NT50 GMT before Dose 3 (14.0 [95% CI: 10.6, 18.5]).

Immunogenicity in Participants 6 Through 23 Months of Age After a 3-Dose Primary Series

Immunogenicity analyses have been performed in the immunobridging subset of 82 Study 3 participants 6 through 23 months of age without evidence of infection up to 1 month after Dose 3 based on a data cutoff date of April 29, 2022.

The evaluable immunogenicity population without prior evidence of SARS-CoV-2 infection up to 1 month after Dose 3 of Pfizer-BioNTech COVID-19 Vaccine was comprised of 82 participants 6 through 23 months of age. Most participants in this analysis population were White (72.0%), with 1.2% Black or African American participants, 13.4% Asian participants, and 12.2% multi-racial participants. There were 15.9% Hispanic/Latino participants. The median age was 16.0 months and 62.2% of participants were male. In the evaluable immunogenicity population (regardless of evidence of prior infection), 6/132 participants (4.5%) were baseline positive for prior SARS-CoV-2 infection.

SARS-CoV-2 NT50 1 month after the vaccination series were compared between an immunogenicity subset of Phase 2/3 participants 6 through 23 months of age from Study 3 and a randomly selected subset from Study 2 Phase 2/3 participants 16 through 25 years of age, using a microneutralization assay against the reference strain (USA_WA1/2020). The primary immunobridging analyses compared the geometric mean titers (using a GMR) and the seroresponse (defined as achieving at least 4-fold rise in SARS-CoV-2 NT50 from before Dose 1) rates in the evaluable immunogenicity population of participants without evidence of prior SARS-CoV-2 infection up to 1 month after Dose 3 in participants 6 through 23 months of age and up to 1 month after Dose 2 in participants 16 through 25 years of age. The prespecified immunobridging criteria were met for both the GMR and the seroresponse difference (Table 23 and Table 24, respectively).

Table 23: SARS-CoV-2 GMTs (NT50) at 1 Month After Completion of Primary Vaccination – Immunobridging Subset – Participants 6 Through 23 Months of Age (Study 3) 1 Month After Dose 3 and Participants 16 Through 25 Years of Age (Study 2) 1 Month After Dose 2 – Without Evidence of SARS-CoV-2– Evaluable Immunogenicity Population

	Pfizer-BioNTech COVID-19 Vaccine		
	3 mcg modRNA/Dose 6 Through 23 months of Age (1 Month After Dose 3) n[a]=82	30 mcg modRNA/Dose 16 Through 25 Years of Age (1 Month After Dose 2) n[a]=170	GMR (95%CI) (6 Through 23 months of Age/16 Through 25 Years of Age)[c,d]
Assay	**GMT[b] (95% CI[b])**	**GMT[b] (95% CI[b])**	
SARS-CoV-2 neutralization assay – NT50 (titer)[e]	1406.5 (1211.3, 1633.1)	1180.0 (1066.6, 1305.4)	1.19 (1.00, 1.42)

Abbreviations: CI = confidence interval; GMR = geometric mean ratio; GMT = geometric mean titer; LLOQ = lower limit of quantitation; NAAT = nucleic acid amplification test; NT50 = 50% neutralizing titer; SARS-CoV-2 = severe acute respiratory syndrome coronavirus 2.

Note: Participants who had no serological or virological evidence [(up to 1 month after Dose 2 (Study 2) or 1 month after Dose 3 (Study 3) blood sample collection)] of past SARS-CoV-2 infection (i.e., N-binding antibody [serum] negative at Dose 1, Dose 3 (Study 3) and 1 month after Dose 2 (Study 2) or 1 month after Dose 3 (Study 3), SARS-CoV-2 not detected by NAAT [nasal swab] at Dose 1, Dose 2, and Dose 3 (Study 3) study visits, and negative NAAT (nasal swab) at any unscheduled visit up to 1 month after Dose 2 (Study 2) or 1 month after Dose 3 (Study 3) blood collection)] and had no medical history of COVID-19 were included in the analysis.

a. n = Number of participants with valid and determinate assay results for the specified assay at the given dose/sampling time point.

b. GMTs and 2-sided 95% CIs were calculated by exponentiating the mean logarithm of the titers and the corresponding CIs (based on the Student t distribution). Assay results below the LLOQ were set to 0.5 × LLOQ.
c. GMRs and 2-sided 95% CIs were calculated by exponentiating the mean difference of the logarithms of the titers ([6 through 23 months of age] – [16 through 25 years of age]) and the corresponding CI (based on the Student t distribution).
d. Immunobridging is declared if the lower bound of the 2-sided 95% CI for the GMR ratio is greater than 0.67 and the point estimate of the GMR is ≥0.8.
e. SARS-CoV-2 NT50 were determined using the SARS-CoV-2 mNeonGreen Virus Microneutralization Assay. The assay uses a fluorescent reporter virus derived from the USA_WA1/2020 strain and virus neutralization is read on Vero cell monolayers. The sample NT50 is defined as the reciprocal serum dilution at which 50% of the virus is neutralized.

Table 24: Difference in Percentages of Participants with Seroresponse at 1 Month After Completion of Primary Vaccination – Immunobridging Subset – Participants 6 Through 23 months of Age (Study 3) 1 Month After Dose 3 and Participants 16 Through 25 Years of Age (Study 2) to 1 Month After Dose 2 Without Evidence of Infection – Evaluable Immunogenicity Population

	Pfizer-BioNTech COVID-19 Vaccine		
	3 mcg modRNA/Dose 6 Through 23 months of Age (1 Month After Dose 3) N[a]=80	30 mcg modRNA/Dose 16 Through 25 Years of Age (1 Month After Dose 2) N[a]=170	Difference in Seroresponse Rates %[d] (95% CI[e]) (6 Through 23 months of Age minus 16 Through 25 Years of Age)[f]
Assay	**n[b] (%) (95% CI[c])**	**n[b] (%) (95% CI[c])**	
SARS-CoV-2 neutralization assay – NT50 (titer)[g]	80 (100.0) (95.5, 100.0)	168 (98.8) (95.8, 99.9)	1.2 (-3.4, 4.2)

Abbreviations: LLOQ = lower limit of quantitation; NAAT = nucleic acid amplification test; N-binding = SARS-CoV-2 nucleoprotein–binding; NT50 = 50% neutralizing titer 50; SARS-CoV-2 = severe acute respiratory syndrome coronavirus 2.
Note: Seroresponse is defined as achieving a ≥4-fold rise from baseline (before Dose 1). If the baseline measurement is below the LLOQ, a post-vaccination assay result ≥4 × LLOQ is considered a seroresponse.
Note: Participants who had no serological or virological evidence [(up to 1 month after Dose 2 (Study 2) or 1 month after Dose 3 (Study 3) blood sample collection) of past SARS-CoV-2 infection (i.e., N-binding antibody [serum] negative at pre-Dose 1, Dose 3 (Study 3) and 1 month after Dose 2 (Study 2) or 1 month after Dose 3 (Study 3), SARS-CoV-2 not detected by NAAT [nasal swab] at pre-Dose 1, pre-Dose 2, and pre-Dose 3 (Study 3) study visits, and negative NAAT (nasal swab) at any unscheduled visit up to 1 month after Dose 2 (Study 2) or 1 month after Dose 3 (Study 3) blood collection)] and had no medical history of COVID-19 were included in the analysis.
a. N = number of participants with valid and determinate assay results both before vaccination and at 1 month after Dose 2. These values are the denominators for the percentage calculations.
b. n = Number of participants with seroresponse for the given assay at the given dose/sampling time point.
c. Exact 2-sided CI based on the Clopper and Pearson method.
d. Difference in proportions, expressed as a percentage ([6 through 23 months of age] – [16 through 25 years of age]).
e. 2-sided CI, based on the Miettinen and Nurminen method for the difference in proportions, expressed as a percentage.
f. Immunobridging is declared if the lower bound of the 2-sided 95% CI for the difference in proportions is greater than -10.0% provided that the immunobridging criteria based on GMR were met.
g. SARS-CoV-2 NT50 were determined using the SARS-CoV-2 mNeonGreen Virus Microneutralization Assay. The assay uses a fluorescent reporter virus derived from the USA_WA1/2020 strain and virus neutralization is read on Vero cell monolayers. The sample NT50 is defined as the reciprocal serum dilution at which 50% of the virus is neutralized.

Using a non-validated fluorescence focus reduction neutralization test assay against the Omicron variant of SARS-CoV-2 (BA.1), the NT50 GMT at 1 month after Dose 3 among a subset of 32 study participants without evidence of prior SARS-CoV-2 infection (127.5 [95% CI: 90.2, 180.1]) was increased compared to the NT50 GMT before Dose 3 (16.3 [95% CI: 12.8, 20.8]).

Efficacy in Participants 6 Months Through 4 Years of Age After a 3-Dose Primary Series

A descriptive efficacy analysis of Study 3 was performed across the combined population of participants 6 months through 4 years of age based on PCR-confirmed COVID-19 cases among 873 participants in the Pfizer-BioNTech COVID-19 Vaccine group and 381 participants in the placebo group (2:1 randomization) who received 3 doses of study intervention during the blinded follow-up period when the Omicron variant of SARS-CoV-2 (BA.2) was the predominant variant in circulation (data cutoff date of June 17, 2022).

The evaluable efficacy population without prior evidence of SARS-CoV-2 infection up to 7 days after Dose 3 of Pfizer-BioNTech COVID-19 Vaccine was comprised of 873 vaccine recipients and 381 placebo recipients 6 months through 4 years of age. Most vaccine recipients in this analysis population were White (76.3%), with 3.4% Black or African American participants, 10.0% Asian participants, and 10.1% who identified as multi-racial, other or not reported. There were 11.2% Hispanic/Latino vaccine recipients. Among the vaccine recipients, 51.1% were female. The median age was 16.0 months in vaccine recipients 6 through 23 months of age and the median age was 3.0 years in vaccine recipients 2 through 4 years of age. In the evaluable efficacy population, 8.7% of vaccine recipients had one or more comorbidities that increase the risk of severe COVID-19 as described in the Morbidity and Mortality Weekly Report (MMWR) 69(32);1081-8 and/or obesity (BMI ≥95th percentile) for participants 2 through 4 years of age. Between participants who received Pfizer-BioNTech COVID-19 Vaccine and those who received placebo, there were no notable differences in demographics.

The median dose interval between Dose 2 and Dose 3 was 13.4 weeks (range 8 to 33 weeks) among participants 6 through 23 months of age and 10 weeks (range 8 to 34 weeks) among participants 2 through 4 years of age who received Pfizer-BioNTech COVID-19 Vaccine. The median length of blinded follow-up for efficacy after Dose 3 was 1.7 months for participants 6 through 23 months of age and 2.1 months for participants 2 through 4 years of age in the Dose 3 Evaluable Efficacy Population who received Pfizer-BioNTech COVID-19 Vaccine or placebo.

The vaccine efficacy results after Dose 3 in participants 6 months through 4 years of age are presented in Table 25.

Table 25: Vaccine Efficacy – First COVID-19 Occurrence From 7 Days After Dose 3 – Blinded Follow-Up Period – Participants Without Evidence of Infection and Participants With or Without Evidence of Infection Prior to 7 Days After Dose 3 – Phase 2/3 – 6 Months Through 4 Years of Age – Evaluable Efficacy (3-Dose) Population

First COVID-19 occurrence from 7 days after Dose 3 in participants without evidence of prior SARS-CoV-2 infection*			
Subgroup	**Pfizer-BioNTech COVID-19 Vaccine 3 mcg modRNA/Dose Na=873 Cases n1b Surveillance Timec (n2d)**	**Placebo Na=381 Cases n1b Surveillance Timec (n2d)**	**Vaccine Efficacy % (95% CIe)**
6 months through 4 years[e]	13 0.124 (794)	21 0.054 (351)	73.2 (43.8, 87.6)
2 through 4 years	9 0.081 (498)	13 0.033 (204)	71.8 (28.6, 89.4)
6 through 23 months	4 0.042 (296)	8 0.020 (147)	75.8 (9.7, 94.7)
First COVID-19 occurrence from 7 days after Dose 3 in participants with or without evidence of prior SARS-CoV-2 infection			
Subgroup	**Pfizer-BioNTech COVID-19 Vaccine 3 mcg modRNA/Dose Na=1294 Cases n1b Surveillance Timec (n2d)**	**Placebo Na=612 Cases n1b Surveillance Timec (n2d)**	**Vaccine Efficacy % (95% CIe)**
6 months through 4 years[e]	14 0.149 (981)	23 0.067 (459)	72.5 (44.3, 86.9)
2 through 4 years	10 0.100 (639)	15 0.044 (286)	70.7 (30.3, 88.2)
6 through 23 months	4 0.048 (342)	8 0.023 (173)	76.2 (11.1, 94.8)

Abbreviations: NAAT = nucleic acid amplification test; N-binding = SARS-CoV-2 nucleoprotein–binding; SARS-CoV-2 = severe acute respiratory syndrome coronavirus 2; VE = vaccine efficacy.

Note: Confirmed cases were determined by Reverse Transcription-Polymerase Chain Reaction (RT-PCR) and at least 1 symptom consistent with COVID-19 (symptoms included: fever; new or increased cough; new or increased shortness of breath; chills; new or increased muscle pain; new loss of taste or smell; sore throat; diarrhea; vomiting; inability to eat/poor feeding).

* Participants who had no serological or virological evidence (prior to 7 days after receipt of Dose 3) of past SARS-CoV-2 infection (i.e., negative N-binding antibody [serum] result at Dose 1, 1 month post-Dose 2 (if available), Dose 3 (if available) visits, SARS-CoV-2 not detected by NAAT [nasal swab] at Dose 1, Dose 2, and Dose 3 study visits, and a negative NAAT [nasal swab] result at any unscheduled visit prior to 7 days after receipt of Dose 3) and had no medical history of COVID-19 were included in the analysis.

a. N = number of participants in the specified group.

b. n1 = Number of participants meeting the endpoint definition.

c. Total surveillance time in 1000 person-years for the given endpoint across all participants within each group at risk for the endpoint. Time period for COVID-19 case accrual is from 7 days after Dose 3 to the end of the surveillance period.
d. n2 = Number of participants at risk for the endpoint.
e. Two-sided 95% confidence interval (CI) for VE is derived based on the Clopper and Pearson method adjusted for surveillance time.

Among participants 6 months through 4 years of age, severe COVID-19 case criteria were fulfilled after Dose 3 in 1 placebo recipient in the 6 through 23-month age group. This case occurred 44 days after Dose 3, based on a single criterion (increased heart rate) and did not require hospitalization. There were no cases of multisystem inflammatory syndrome in children reported through the June 17, 2022 data cutoff date.

14.6 Immunogenicity of Pfizer-BioNTech COVID-19 Vaccine (Original Monovalent) Booster Dose Following Pfizer-BioNTech COVID-19 Vaccine (Original Monovalent) Primary Series in Participants 5 Through 11 Years of Age

In Study 3, immunogenicity of a booster dose administered at 7 to 9 months after the second primary series dose was evaluated in 67 study participants 5 through 11 years of age who had no serological or virological evidence of past SARS-CoV-2 infection up to 1 month after the booster dose. Using a microneutralization assay against the reference strain of SARS-CoV-2 (USA_WA1/2020), the NT50 GMT at 1 month after the booster dose (2720.9 [95% CI: 2280.1, 3247.0]) was increased compared to before the booster dose (271.0 [95% CI: 229.1, 320.6]). Using a non-validated fluorescence focus reduction neutralization test assay against the Omicron variant of SARS-CoV-2 (B.1.1.529), the NT50 GMT at 1 month after the booster dose among a subset of 17 study participants (614.4 [95% CI: 410.7, 919.2]) was increased compared to the NT50 GMT at 1 month after dose 2 among a subset of 29 study participants (27.6 [95% CI: 22.1, 34.5]).

14.7 Immunogenicity of a Pfizer-BioNTech COVID-19 Vaccine (Original Monovalent) Booster Dose Following Primary Vaccination with Another Authorized or Approved COVID-19 Vaccine (Original Monovalent)

Effectiveness of a Pfizer-BioNTech COVID-19 Vaccine booster dose (30 mcg modRNA) in individuals who completed primary vaccination with another authorized or approved COVID-19 Vaccine (heterologous booster dose) is inferred from immunogenicity data supporting effectiveness of a Pfizer-BioNTech COVID-19 Vaccine booster dose administered following completion of Pfizer-BioNTech COVID-19 Vaccine primary series and from immunogenicity data from an independent NIH study Phase 1/2 open-label clinical trial (NCT04889209) conducted in the United States that evaluated a heterologous booster dose of the Pfizer-BioNTech COVID-19 Vaccine. In this study, participants who had completed primary vaccination with a Moderna COVID-19 Vaccine 2-dose series (N=151), a Janssen COVID-19 Vaccine single dose (N=156), or a Pfizer-BioNTech COVID-19 Vaccine 2-dose series (N=151) at least 12 weeks prior to enrollment and who reported no history of SARS-CoV-2 infection were randomized 1:1:1 to receive a booster dose of 1 of 3 vaccines: Moderna COVID-19 Vaccine, Janssen COVID-19 Vaccine, or Pfizer-BioNTech COVID-19 Vaccine (30 mcg modRNA). Neutralizing antibody titers, as measured by a pseudovirus neutralization assay using a lentivirus expressing the SARS-CoV-2 Spike protein with D614G mutation, were assessed on Day 1 prior to administration of the booster dose and on Day 15 after the booster dose. A booster response to the Pfizer-BioNTech COVID-19 Vaccine was demonstrated regardless of the vaccine used for primary vaccination.

14.8 Immunogenicity of Pfizer-BioNTech COVID-19 Vaccine, Bivalent (Original and Omicron BA.4/BA.5) Administered as a Booster (Fourth Dose) in Individuals 6 Months Through 4 Years of Age

In Study 6, a subset of 60 participants 6 months through 4 years of age received a booster dose (fourth dose) of Pfizer-BioNTech COVID-19 Vaccine, Bivalent (3 mcg modRNA) after receiving 3 prior doses of Pfizer-BioNTech COVID-19 Vaccine (Original monovalent, 3 mcg modRNA). Neutralizing antibody levels following the fourth dose are presented in Table 26. Data from a subset of participants 6 months through 4 years of age in Study 3 who received 3 doses of Pfizer-BioNTech COVID-19 Vaccine (Original monovalent, 3 mcg modRNA) are included as a reference. There were no formal statistical comparisons of the immune response between subsets from the two studies.

Table 26: Study 6 – Geometric Mean Titers – Participants With or Without Evidence of Infection* – 6 Months Through 4 Years of Age – Evaluable Immunogenicity Population

SARS-CoV-2 Neutralization Assay	Age Group	Sampling Time Point[a]	Study 6 Pfizer-BioNTech COVID-19 Vaccine, Bivalent (Original/Omicron BA.4/BA.5) 3 mcg modRNA Dose 4 and 1 Month After Dose 4		Study 3 Pfizer-BioNTech COVID-19 Vaccine (Original Monovalent) 3 mcg modRNA Dose 3 and 1 Month After Dose 3	
			n[b]	GMT[c] (95% CI[c])	n[b]	GMT[c] (95% CI[c])
Omicron BA.4/BA.5 – NT50 (titer)[f]	6 through 23 months	Pre-vaccination	21	243.9 (115.3, 516.1)	23	96.0 (55.3, 166.8)
		1 month	23	2011.4 (1141.3, 3544.9)	23	625.6 (365.7, 1070.5)
	2 through 4 years	Pre-vaccination	33	165.6 (88.3, 310.5)	31	56.1 (38.0, 82.7)
		1 month	35	1514.9 (882.2, 2601.5)	31	595.0 (370.5, 955.6)
Reference strain – NT50 (titer)[f]	6 through 23 months	Pre-vaccination	22	2491.2 (1432.0, 4333.8)	22	981.6 (503.5, 1913.7)
		1 month	23	8737.2 (5959.6, 12809.5)	23	9221.7 (6734.0, 12628.3)
	2 through 4 years	Pre-vaccination	35	2802.7 (1795.7, 4374.3)	31	657.9 (421.5, 1026.9)
		1 month	35	10448.3 (7685.1, 14205.1)	30	8933.3 (6388.0, 12492.9)

Abbreviations: GMT = geometric mean titer; LLOQ = lower limit of quantitation; N-binding = SARS-CoV-2 nucleoprotein-binding; NAAT = nucleic acid amplification test.
NT50 = 50% neutralizing titer; SARS-CoV-2 = severe acute respiratory syndrome coronavirus 2.
* Included all participants regardless of SARS-CoV-2 infection status prior to or after vaccination.
a. Protocol-specified timing for blood sample collection.
b. n = Number of participants with valid and determinate assay results for the specified assay at the given sampling time point.

c. GMTs and 2-sided 95% CIs were calculated by exponentiating the mean logarithm of the titers and the corresponding CIs (based on the Student t distribution). Assay results below the LLOQ were set to 0.5 × LLOQ.
d. For Study 6: positive N-binding antibody result at Dose 4 visit, positive NAAT result at Dose 4 visit, or medical history of COVID-19. For Study 3: positive N-binding antibody result at Dose 1, 1-month post-Dose 2 (if available), or Dose 3 visits, positive NAAT result at Dose 1, Dose 2, Dose 3, or any unscheduled illness visit up to Dose 3 visit, or medical history of COVID-19.
e. For Study 6: negative N-binding antibody result at Dose 4 visit, negative NAAT result at Dose 4 visit, and no medical history of COVID-19. For Study 3: negative N-binding antibody result at Dose 1, 1-month post-Dose 2 (if available), and Dose 3 visits, negative NAAT result at Dose 1, Dose 2, Dose 3, and any unscheduled illness visits up to Dose 3 visit, and no medical history of COVID-19.
f. SARS-CoV-2 NT50 were determined using a validated 384-well assay platform (original strain [USA-WA1/2020, isolated in January 2020] and Omicron B.1.1.529 subvariant BA.4/BA.5).

14.9 Effectiveness of a Single Dose of Pfizer-BioNTech COVID-19 Vaccine (Original Monovalent) in Individuals with Evidence of Prior SARS-CoV-2 Infection

Seroprevalence surveys estimate that almost all of the U.S. population 5 years of age and older now have antibodies (from vaccination and/or infection) against SARS-CoV-2 (*Centers for Disease Control and Prevention. COVID Data Tracker. Atlanta, GA: US Department of Health and Human Services, CDC; 2023, March 31.* https://covid.cdc.gov/covid-data-tracker#datatracker-home).

Powell et al. conducted an observational test-negative study including symptomatic individuals aged 12 to 17 years of age with SARS-CoV-2 polymerase chain reaction (PCR) testing results in England from August 9, 2021 to March 31, 2022 (Powell et al. *Protection against symptomatic infection with delta (B.1.617.2) and omicron (B.1.1.529) BA.1 and BA.2 SARS-CoV-2 variants after previous infection and vaccination in adolescents in England, August, 2021–March, 2022: a national, observational, test-negative, case-control study. Lancet Infectious Diseases. April 2023*). Among 1,161,704 SARS-CoV-2 PCR tests linked to COVID-19 vaccination status, there were 390,467 SARS-CoV-2 PCR-confirmed positive tests during Delta variant predominance and 212,433 SARS-CoV-2 positive tests during Omicron variants BA.1 and BA.2 predominance. Among adolescents who had received only 1 dose of the Pfizer-BioNTech COVID-19 Vaccine, those who had evidence of previous infection with Alpha, Delta, or Omicron variants had increased protection against symptomatic Omicron infection compared with those with no evidence of previous infection. At 2 to 14 weeks following 1 dose of the Pfizer-BioNTech COVID-19 Vaccine, the estimated effectiveness was 18.8% (95% CI: 17.2%, 20.3%), 81.5% (95% CI: 80.0%, 82.9%), 78.8% (95% CI: 77.9, 79.5%), and 79.6% (95% CI: 44.9%, 92.4%) for individuals with no evidence of prior infection, and evidence of prior Alpha, Delta, and Omicron infection, respectively.

16 HOW SUPPLIED/STORAGE AND HANDLING

How Supplied

Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula): multiple dose vials with yellow caps and labels with yellow borders

NDC 59267-4426-2	Carton of 10 multiple dose vials
NDC 59267-4426-1	Multiple dose vial containing 3 doses of 0.3 mL (after dilution)

Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula): single dose vials with blue caps and labels with blue borders

NDC 59267-4438-2	Carton of 10 single dose vials
NDC 59267-4438-1	One vial contains 1 dose of 0.3 mL (Do Not Dilute)

During storage, minimize exposure to room light, and avoid exposure to direct sunlight and ultraviolet light. Do not refreeze thawed vials.

Vial Storage Prior to Use

Cartons of Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) may arrive frozen at ultra-cold conditions in thermal containers with dry ice.

Once received, frozen vials may be immediately transferred to the refrigerator [2ºC to 8ºC (35ºF to 46ºF)], thawed and stored for up to 10 weeks, not to exceed the expiration date printed on the vial and cartons. The 10-week refrigerated expiry date should be recorded on the carton at the time of transfer. Cartons of multiple dose vials with yellow caps and labels with yellow borders and cartons of single dose vials with blue caps and labels with blue borders may take up to 2 hours to thaw at this temperature.

Alternatively, frozen vials may be stored in an ultra-low temperature freezer at -90ºC to -60ºC (-130ºF to -76ºF) until the expiration date printed on the vials and cartons. Do not store vials at -25°C to -15°C (-13°F to 5°F). Once vials are thawed, they should not be refrozen.

If cartons of Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) are received at 2°C to 8°C (35ºF to 46ºF), they should be stored at 2°C to 8°C (35ºF to 46ºF). Check that the carton has been updated to reflect the 10-week refrigerated expiry date, not to exceed the expiration date printed on the vial and cartons.

Vial Storage During Use

If not previously thawed at 2ºC to 8ºC (35ºF to 46ºF), allow Pfizer-BioNTech COVID-19 Vaccine (2024−2025 Formula) multiple dose vials or single dose vials to thaw at room temperature [up to25ºC (77ºF)] for 30 minutes.

Pfizer-BioNTech COVID-19 Vaccine (2024−2025 Formula) may be stored at room temperature [8°C to 25°C (46°F to 77°F)] for a total of 12 hours prior to the first puncture. After dilution, multiple dose vials should be held between 2ºC to 25°C (35°F to 77°F). Multiple dose vials should be discarded 12 hours after dilution.

Transportation of Vials

If local redistribution is needed, multiple dose vials and single dose vials may be transported at -90°C to -60°C (-130°F to -76°F) or 2°C to 8°C (35°F to 46°F).

17 PATIENT COUNSELING INFORMATION

Advise the recipient or caregiver to read the Fact Sheet for Recipients and Caregivers.

The vaccination provider must include vaccination information in the state/local jurisdiction's Immunization Information System (IIS) or other designated system. Advise recipient or caregiver that more information about IISs can be found at: https://www.cdc.gov/vaccines/programs/iis/about.html

18 MANUFACTURER INFORMATION

For general questions, visit the website or call the telephone number provided below.

Website	Telephone number
https://www.cvdvaccine.com	1-877-829-2619 (1-877-VAX-CO19)

This Full EUA Fact Sheet may have been updated. For the most recent Full EUA Fact Sheet, please see https://www.cvdvaccine.com.

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LAB-1571-5.6c

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EXHIBIT C

Fact Sheet for Recipients and Caregivers

(Starts on Following Page)

FACT SHEET FOR RECIPIENTS AND CAREGIVERS ABOUT PFIZER-BIONTECH COVID-19 VACCINE (2024-2025 FORMULA) WHICH HAS EMERGENCY USE AUTHORIZATION (EUA) TO PREVENT CORONAVIRUS DISEASE 2019 (COVID-19) IN INDIVIDUALS 6 MONTHS THROUGH 11 YEARS OF AGE

Your child is being offered the Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula)[1] to prevent coronavirus disease 2019 (COVID-19), which is caused by the virus SARS-CoV-2.[2] This Fact Sheet contains information to help you understand the risks and benefits of the Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula), hereafter referred to as Pfizer-BioNTech COVID-19 Vaccine, which your child may receive because there is currently a pandemic of COVID-19. Talk to your child's vaccination provider if you have questions.

This Fact Sheet may have been updated. For the most recent Fact Sheet, please see https://www.covidvaxoption.com/.

The U.S. Food and Drug Administration (FDA) has issued an Emergency Use Authorization (EUA) to make the Pfizer-BioNTech COVID-19 Vaccine available during the COVID-19 pandemic (for more details about an EUA please see "**WHAT IS AN EMERGENCY USE AUTHORIZATION?**" at the end of this document). The Pfizer-BioNTech COVID-19 Vaccine is not an FDA-approved vaccine in the United States. Read this Fact Sheet for information about the Pfizer-BioNTech COVID-19 Vaccine.

WHAT IS COVID-19?
COVID-19 is caused by a coronavirus called SARS-CoV-2. You can get COVID-19 through close contact with another person who has the virus.

It is predominantly a respiratory illness that can affect other organs. People with COVID-19 have had a wide range of symptoms reported, ranging from mild symptoms to severe illness leading to death. Symptoms may appear 2 to 14 days after exposure to the virus. Symptoms may include: fever or chills; cough; shortness of breath; fatigue;

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[1] The Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) encodes the spike protein of SARS-CoV-2 Omicron variant lineage KP.2.

[2] If your child is immunocompromised and turning from 11 to 12 years of age during the vaccination series for immunocompromised individuals, you may receive this Fact Sheet because your child is being offered COMIRNATY (COVID-19 Vaccine, mRNA) (2024-2025 Formula) (hereafter referred to as COMIRNATY). COMIRNATY is an FDA-approved vaccine for prevention of COVID-19 in individuals 12 years of age and older that is authorized under EUA to complete the dosing schedule for immunocompromised individuals who turn from 11 years to 12 years of age during the vaccination series. Under the authorized dosing schedule, these individuals receive the Pfizer-BioNTech COVID−19 Vaccine before they turn 12 years old, and complete the vaccination series with COMIRNATY on or after the date the individual turns 12 years old. The dosing schedule is: Dose 1: Week 0; Dose 2: Week 3; Dose 3: ≥4 weeks after Dose 2. The information in this Fact Sheet about the Pfizer-BioNTech COVID-19 Vaccine, including information about the benefits, risks, and ingredients of that vaccine, also applies to your child's use of COMIRNATY, except with respect to the dosing schedule and the ages authorized for use.

muscle or body aches; headache; new loss of taste or smell; sore throat; congestion or runny nose; nausea or vomiting; diarrhea.

WHAT IS THE PFIZER-BIONTECH COVID-19 VACCINE?
The Pfizer-BioNTech COVID-19 Vaccine is a vaccine for use in individuals 6 months through 11 years of age to prevent COVID-19. The FDA has authorized the emergency use of the Pfizer-BioNTech COVID-19 Vaccine under an EUA.

The Pfizer-BioNTech COVID-19 Vaccine may not protect everyone.

WHAT SHOULD YOU MENTION TO THE VACCINATION PROVIDER BEFORE YOUR CHILD GETS THE PFIZER-BIONTECH COVID-19 VACCINE?
Tell the vaccination provider about all of your child's medical conditions, including if your child:

- has any allergies
- has had myocarditis (inflammation of the heart muscle) or pericarditis (inflammation of the lining outside the heart)
- has a fever
- has a bleeding disorder or is on a blood thinner
- is immunocompromised or is on a medicine that affects the immune system
- is pregnant
- is breastfeeding
- has received another COVID-19 vaccine
- has ever fainted in association with an injection

HOW IS THE VACCINE GIVEN?
The Pfizer-BioNTech COVID-19 Vaccine is given as an injection into the muscle.

<u>Individuals 6 months through 4 years of age</u>

- **Unvaccinated individuals:** Three doses of Pfizer-BioNTech COVID-19 Vaccine are administered over at least 11 weeks. The first 2 doses are administered 3 weeks apart. The third dose is administered at least 8 weeks after the second dose.
- **Individuals who have received 1 previous dose of the Pfizer-BioNTech COVID-19 Vaccine[3]:** Two doses of Pfizer-BioNTech COVID-19 Vaccine are administered. The first dose of Pfizer-BioNTech COVID-19 Vaccine is administered 3 weeks after the previous dose of a Pfizer-BioNTech COVID-19 Vaccine and the second dose at least 8 weeks later.
- **Individuals who have received 2 or more previous doses of the Pfizer-BioNTech COVID-19 Vaccine[3]:** A single dose of Pfizer-BioNTech COVID-19 Vaccine is administered at least 8 weeks after the last previous dose of a Pfizer-BioNTech COVID-19 Vaccine.

[3] Previous dose refers to a dose of any prior Pfizer-BioNTech COVID-19 Vaccine that is no longer authorized for use in the United States.

Individuals 5 through 11 years of age
A single dose of Pfizer-BioNTech COVID-19 Vaccine is administered to individuals who have not received a COVID-19 vaccine (2024-2025 Formula). You must wait at least 2 months since your last dose of any COVID-19 vaccine.

Immunocompromised individuals 6 months through 11 years of age
Additional doses of Pfizer-BioNTech COVID-19 Vaccine may be administered. For more information, talk to your child's healthcare provider.

WHO SHOULD NOT GET PFIZER-BIONTECH COVID-19 VACCINE?

Your child should not get Pfizer-BioNTech COVID-19 Vaccine if they had:

- a severe allergic reaction after a previous dose of any Pfizer-BioNTech COVID-19 vaccine
- a severe allergic reaction to any ingredient in these vaccines.

WHAT ARE THE INGREDIENTS IN THIS VACCINE?

Pfizer-BioNTech COVID-19 Vaccine contains the following ingredients: messenger ribonucleic acid (mRNA), lipids (((4-hydroxybutyl)azanediyl)bis(hexane-6,1-diyl)bis(2-hexyldecanoate), 2 [(polyethylene glycol)-2000]-N,N-ditetradecylacetamide, 1,2-distearoyl-sn-glycero-3-phosphocholine, and cholesterol), tromethamine, tromethamine hydrochloride, and sucrose. Pfizer-BioNTech COVID-19 Vaccine for use in individuals 6 months through 4 years of age also contains sodium chloride.

HAS THIS VACCINE BEEN USED BEFORE?

Millions of individuals 6 months of age and older have received a Pfizer-BioNTech COVID-19 vaccine under EUA.

In a clinical trial, approximately 1,200 individuals 6 months through 23 months of age, approximately 1,800 individuals 2 through 4 years of age, and approximately 3,100 individuals 5 through 11 years of age have received at least 1 dose of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent[4]). In another clinical trial, approximately 23,000 individuals 12 years of age and older have received at least 1 dose of the Pfizer-BioNTech COVID-19 Vaccine (Original monovalent).

In clinical trials, 60 individuals 6 months through 4 years of age, 113 individuals 5 through 11 years of age, 107 individuals 12 through 17 years of age, 103 individuals 18 through 55 years of age, and 106 individuals greater than 55 years of age received a dose of Pfizer-BioNTech COVID-19 Vaccine, Bivalent[5].

[4] Pfizer-BioNTech COVID-19 Vaccine (Original monovalent) refers to Pfizer-BioNTech COVID-19 Vaccine that encodes the spike protein of only the Original SARS-CoV-2. This vaccine is no longer authorized for use in the United States.

[5] Pfizer-BioNTech COVID-19 Vaccine, Bivalent refers to Pfizer-BioNTech COVID-19 Vaccine that encodes the spike protein of the Original SARS-CoV-2 and the Omicron BA.4/BA.5 SARS-CoV-2. This vaccine is no longer authorized for use in the United States.

WHAT ARE THE BENEFITS OF PFIZER-BIONTECH COVID-19 VACCINE?
FDA has authorized the Pfizer-BioNTech COVID-19 Vaccine to provide protection against COVID-19.

The duration of protection against COVID-19 is currently unknown.

WHAT ARE THE RISKS OF PFIZER-BIONTECH COVID-19 VACCINE?
There is a remote chance that the vaccine could cause a severe allergic reaction. A severe allergic reaction would usually occur within a few minutes to one hour after getting a dose. For this reason, the vaccination provider may ask your child to stay at the place where your child received the vaccine for monitoring after vaccination. Signs of a severe allergic reaction can include:

- Difficulty breathing
- Swelling of the face and throat
- A fast heartbeat
- A bad rash all over the body
- Dizziness and weakness

Myocarditis (inflammation of the heart muscle) and pericarditis (inflammation of the lining outside the heart) have occurred in some people who have received mRNA COVID-19 vaccines. Myocarditis and pericarditis following Pfizer-BioNTech COVID-19 Vaccines have occurred most commonly in adolescent males 12 through 17 years of age. In most of these individuals, symptoms began within a few days following vaccination. The chance of having this occur is very low. You should seek medical attention right away if your child has any of the following symptoms after receiving the vaccine, particularly during the 2 weeks after your child receives a dose of the vaccine:

- Chest pain
- Shortness of breath or difficulty breathing
- Feelings of having a fast-beating, fluttering, or pounding heart

Additional symptoms, particularly in children, may include:

- Fainting
- Unusual and persistent irritability
- Unusual and persistent poor feeding
- Unusual and persistent fatigue or lack of energy
- Persistent vomiting
- Persistent pain in the abdomen
- Unusual and persistent cool, pale skin

Side effects that have been reported with Pfizer-BioNTech COVID-19 Vaccines include:

- Severe allergic reactions
- Non-severe allergic reactions such as rash, itching, hives, or swelling of the face
- Myocarditis (inflammation of the heart muscle)
- Pericarditis (inflammation of the lining outside the heart)
- Injection site pain/tenderness

- Tiredness
- Headache
- Muscle pain
- Chills
- Joint pain
- Fever
- Injection site swelling
- Injection site redness
- Nausea
- Feeling unwell
- Swollen lymph nodes (lymphadenopathy)
- Decreased appetite
- Diarrhea
- Vomiting
- Arm pain
- Fainting in association with injection of the vaccine
- Dizziness
- Irritability
- Febrile seizures (convulsions during a fever)

These may not be all the possible side effects. Serious and unexpected side effects may occur. The possible side effects are still being studied.

WHAT SHOULD I DO ABOUT SIDE EFFECTS?
If your child experiences a severe allergic reaction, call 9-1-1, or go to the nearest hospital.

Call the vaccination provider or your child's healthcare provider if your child has any side effects that bother your child or do not go away.

Report vaccine side effects to FDA/CDC Vaccine Adverse Event Reporting System (VAERS). The VAERS toll-free number is 1-800-822-7967 or report online to https://vaers.hhs.gov/reportevent.html. Please include "Pfizer-BioNTech COVID-19 Vaccine (2024-2025 Formula) EUA" in the first line of box #18 of the report form.

In addition, you can report side effects to Pfizer Inc. at the contact information provided below.

Website	Fax number	Telephone number
www.pfizersafetyreporting.com	1-866-635-8337	1-800-438-1985

WHAT IF I DECIDE NOT TO HAVE MY CHILD GET THE PFIZER-BIONTECH COVID-19 VACCINE?
Under the EUA, there is an option to accept or refuse receiving this vaccine. Should you decide for your child not to receive this vaccine, it will not change the standard medical care.

ARE THERE OTHER VACCINES FOR PREVENTING COVID-19 BESIDES THE PFIZER-BIONTECH COVID-19 VACCINE?
Other vaccines to prevent COVID-19 may be available under EUA, including vaccines that encode the spike protein of the SARS-CoV-2 Omicron variant lineage KP.2.

CAN MY CHILD RECEIVE PFIZER-BIONTECH COVID-19 VACCINE AT THE SAME TIME AS OTHER VACCINES?
If you are considering having your child receive Pfizer-BioNTech COVID-19 Vaccine with other vaccines, discuss the options with your child's healthcare provider.

WHAT IF MY CHILD IS IMMUNOCOMPROMISED?
Immunocompromised individuals 6 months through 11 years of age may receive additional doses of Pfizer-BioNTech COVID-19 Vaccine (see **HOW IS THE VACCINE GIVEN?** above).

Vaccinations may not provide full immunity to COVID-19 in people who are immunocompromised; therefore, your child should continue to maintain physical precautions to help prevent COVID-19. Your child's close contacts should be vaccinated as appropriate.

WHAT ABOUT PREGNANCY OR BREASTFEEDING?
If your child is pregnant or breastfeeding, discuss the options with your child's healthcare provider.

WILL THIS VACCINE GIVE MY CHILD COVID-19?
No. This vaccine does not contain SARS-CoV-2 and cannot give your child COVID-19.

ADDITIONAL INFORMATION
If you have questions, visit the website or call the telephone number provided below.

To access the most recent Fact Sheets, please scan the QR code provided below.

Global website	Telephone number
www.cvdvaccine.com	1-877-829-2619 (1-877-VAX-CO19)

HOW CAN I LEARN MORE?

- Ask the vaccination provider.
- Visit CDC at https://www.cdc.gov/coronavirus/2019-ncov/index.html.
- Visit FDA at https://www.fda.gov/emergency-preparedness-and-response/mcm-legal-regulatory-and-policy-framework/emergency-use-authorization.
- Contact your local or state public health department.

WHERE WILL VACCINATION INFORMATION BE RECORDED?

The vaccination provider may include your child's vaccination information in your state/local jurisdiction's Immunization Information System (IIS) or other designated system. For more information about IISs, visit: https://www.cdc.gov/vaccines/programs/iis/about.html.

WHAT IS THE COUNTERMEASURES INJURY COMPENSATION PROGRAM?

The Countermeasures Injury Compensation Program (CICP) is a federal program that may help pay for costs of medical care and other specific expenses of certain people who have been seriously injured by certain medicines or vaccines, including this vaccine. Generally, a claim must be submitted to the CICP within one (1) year from the date of receiving the vaccine. To learn more about this program, visit www.hrsa.gov/cicp/ or call 1-855-266-2427.

WHAT IS AN EMERGENCY USE AUTHORIZATION (EUA)?

The FDA has made Pfizer-BioNTech COVID-19 Vaccine available under an emergency access mechanism called an EUA. An EUA is supported by a Secretary of Health and Human Services (HHS) declaration that circumstances exist to justify the emergency use of drugs and biological products during the COVID-19 pandemic. A product authorized for emergency use has not undergone the same type of review by FDA as an FDA-approved product.

FDA may issue an EUA when certain criteria are met, which includes that there are no adequate, approved, and available alternatives. In addition, the FDA decision is based on the totality of the scientific evidence available showing that the product may be effective to prevent COVID-19 during the COVID-19 pandemic and that the known and potential benefits of the product outweigh the known and potential risks of the product. All of these criteria must be met to allow for the product to be used under EUA during the COVID-19 pandemic.

The EUA is in effect for the duration of the COVID-19 EUA declaration justifying emergency use of this product, unless terminated or revoked (after which the product may no longer be used under the EUA).

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