

## HIGHLIGHTS OF PRESCRIBING INFORMATION

These highlights do not include all the information needed to use PREVNAR 20 safely and effectively. See full prescribing information for PREVNAR 20.

**PREVNAR 20 (Pneumococcal 20-valent Conjugate Vaccine), suspension for intramuscular injection**  
Initial U.S. Approval: 2021

### INDICATIONS AND USAGE

Prevnar 20 is a vaccine indicated for active immunization for the prevention of pneumonia and invasive disease caused by *Streptococcus pneumoniae* serotypes 1, 3, 4, 5, 6A, 6B, 7F, 8, 9V, 10A, 11A, 12F, 14, 15B, 18C, 19A, 19F, 22F, 23F, and 33F in adults 18 years of age and older. (1)

This indication for the prevention of pneumonia caused by *S. pneumoniae* serotypes 8, 10A, 11A, 12F, 15B, 22F, and 33F is approved under accelerated approval based on immune responses as measured by opsonophagocytic activity (OPA) assay. Continued approval for this indication may be contingent upon verification and description of clinical benefit in a confirmatory trial. (1)

### DOSAGE AND ADMINISTRATION

Adults 18 years of age and older: a single dose (2.3)

### DOSAGE FORMS AND STRENGTHS

0.5 mL suspension for intramuscular injection, supplied in a single-dose pre-filled syringe. (3)

### CONTRAINDICATIONS

Severe allergic reaction (e.g., anaphylaxis) to any component of Prevnar 20 or to diphtheria toxoid. (4)

### ADVERSE REACTIONS

In adults 18 through 59 years of age, the most commonly reported solicited adverse reactions >10% were pain at the injection site (>70%), muscle pain (>50%), fatigue (>40%), headache (>30%), and arthralgia and injection site swelling (>10%). (6)

In adults 60 years of age and older, the most commonly reported solicited adverse reactions >10% were pain at the injection site (>50%), muscle pain and fatigue (>30%), headache (>20%), and arthralgia (>10%). (6)

To report SUSPECTED ADVERSE REACTIONS, contact Pfizer Inc. at 1-800-438-1985 or VAERS at 1-800-822-7967 or <http://vaers.hhs.gov>.

See 17 for PATIENT COUNSELING INFORMATION.

Revised: 6/2021

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## FULL PRESCRIBING INFORMATION

### 1 INDICATIONS AND USAGE

Prevnar 20™ is a vaccine indicated for active immunization for the prevention of pneumonia and invasive disease caused by *Streptococcus pneumoniae* serotypes 1, 3, 4, 5, 6A, 6B, 7F, 8, 9V, 10A, 11A, 12F, 14, 15B, 18C, 19A, 19F, 22F, 23F, and 33F in adults 18 years of age and older.

This indication for the prevention of pneumonia caused by *S. pneumoniae* serotypes 8, 10A, 11A, 12F, 15B, 22F, and 33F is approved under accelerated approval based on immune responses as measured by opsonophagocytic activity (OPA) assay [see *Clinical Studies (14.2)*]. Continued approval for this indication may be contingent upon verification and description of clinical benefit in a confirmatory trial.

### 2 DOSAGE AND ADMINISTRATION

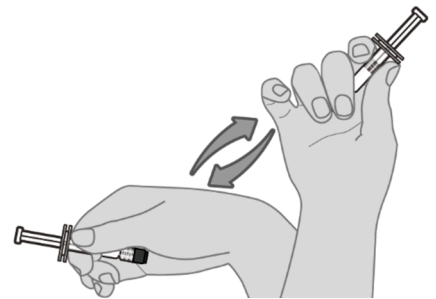
**For intramuscular administration only.**

#### 2.1 Preparation

Do not mix Pevnar 20 with other vaccines/products in the same syringe.

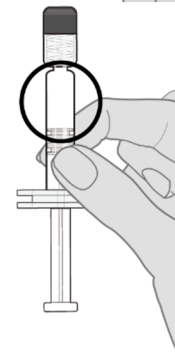
##### Step 1. Resuspend drug product

Hold the pre-filled syringe horizontally between the thumb and the forefinger and shake vigorously until the vaccine is a homogeneous white suspension. Do not use the vaccine if it cannot be re-suspended.



##### Step 2. Visual inspection

Visually inspect the vaccine for large particulate matter and discoloration prior to administration. Do not use if large particulate matter or discoloration is found. If the vaccine is not a homogeneous suspension, repeat Steps 1 and 2.



##### Step 3. Remove syringe cap

Remove the syringe cap by slowly turning the cap counterclockwise while holding the Luer lock adapter.



Avoid pressing the syringe plunger rod while removing the syringe cap.

##### Step 4. Attach a sterile needle

Hold the Luer lock adapter and attach a needle appropriate for intramuscular administration to the pre-filled syringe by turning clockwise.

## **2.2 Administration**

For intramuscular injection only.

Each 0.5 mL dose is to be injected intramuscularly using a sterile needle attached to the supplied pre-filled syringe.

## **2.3 Vaccination Schedule**

Pevnar 20 is administered as a single dose.

## **3 DOSAGE FORMS AND STRENGTHS**

Pevnar 20 is a suspension for intramuscular injection available in a 0.5 mL single-dose pre-filled syringe.

## **4 CONTRAINDICATIONS**

Severe allergic reaction (e.g., anaphylaxis) to any component of Pevnar 20 or to diphtheria toxoid [*see Description (11)*].

## **5 WARNINGS AND PRECAUTIONS**

### **5.1 Management of Acute Allergic Reactions**

Appropriate medical treatment and supervision used to manage immediate allergic reactions must be immediately available should an acute anaphylactic reaction occur following administration of Pevnar 20.

### **5.2 Altered Immunocompetence**

Safety and immunogenicity data on Pevnar 20 are not available for individuals in immunocompromised groups and vaccination should be considered on an individual basis.

Based on experience with pneumococcal vaccines, individuals with altered immunocompetence may have reduced immune responses to Pevnar 20.

## **6 ADVERSE REACTIONS**

In adults 18 through 59 years of age, the most commonly reported solicited adverse reactions >10% were pain at the injection site (>70%), muscle pain (>50%), fatigue (>40%), headache (>30%), and arthralgia and injection site swelling (>10%).

In adults 60 years of age and older, the most commonly reported solicited adverse reactions >10% were pain at the injection site (>50%), muscle pain and fatigue (>30%), headache (>20%), and arthralgia (>10%).

### **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 to rates in the clinical trials of another vaccine and may not reflect the rates observed in practice.

The safety of a single dose of Prevnar 20 in adults 18 years of age and older was evaluated in five randomized, active-controlled, multicenter clinical trials and one open-label, multicenter clinical trial. All of the trials were conducted in the United States and 2 of the trials also enrolled participants (N=172) in Sweden. Across the 6 trials, 4552 adults received Prevnar 20 and 2496 received active control vaccine.

### Pneumococcal Vaccine Naïve Adults 18 Years of Age and Older

The safety of Prevnar 20 in adults 18 years of age and older with no history of pneumococcal vaccination was evaluated in five studies (Studies 1-5). In the main cohort of Study 1 (NCT03760146) and in Study 2 (NCT03313037), participants  $\geq 60$  years of age and participants 60 through 64 years of age, respectively, received a single dose of Prevnar 20 followed 1 month later with administration of saline placebo or received a single dose of Prevnar 13 followed 1 month later with a dose of PNEUMOVAX® 23 (PPSV23). The 2 other cohorts of Study 1, participants 50 through 59 years of age and participants 18 through 49 years of age, received a single vaccination with Prevnar 20 or Prevnar 13. In Study 3 (NCT03828617), participants 18 through 49 years of age received a single vaccination with Prevnar 20 or Prevnar 13. In Studies 4 (NCT02955160) and 5 (NCT03642847), which were smaller studies conducted early in the clinical development of Prevnar 20, participants 18 through 49 years of age received a single dose of Prevnar 20 or an active control (Tdap or Prevnar 13).

### Adults $\geq 65$ Years of Age Previously Immunized with a Pneumococcal Vaccine

The safety of Prevnar 20 in adults 65 years of age and older with pneumococcal vaccination given as routine care prior to enrollment was assessed in Study 6 (NCT03835975). Participants were enrolled into 1 of 3 cohorts based on their prior pneumococcal vaccination history (PPSV23 only  $\geq 1$  to  $\leq 5$  years prior to enrollment, Prevnar 13 only  $\geq 6$  months prior to enrollment, or Prevnar 13 followed by PPSV23 [with PPSV23 given  $\geq 1$  year prior to enrollment]). Participants in 2 of the cohorts received a single vaccination with Prevnar 20 or control pneumococcal vaccine (Prevnar 13), and the other cohort received a single vaccination with Prevnar 20 only.

### Demographics of Trial Participants

In the three main trials (Studies 1, 3, and 6), participants were predominantly female (52.0% to 65.9%) across groups defined by age and prior pneumococcal vaccination status within the Prevnar 20 and control vaccine groups. Across all 3 trials combined, 59.8% of participants were 60 years of age and older, 6.9% were 50 through 59 years of age, and 33.3% were 18 through 49 years of age. In Studies 1 and 3, participants were 80.7% White, 14.2% Black, 2.1% Asian, and 10.3% Hispanic. In Study 6, participants were predominantly White (92.4%). Participants were primarily from the United States; however a portion of participants 65 years of age and older were enrolled from Sweden in Study 1 (5.7% of participants 60 years of age and older in that study) and also in Study 6 (35.5% of participants with prior PPSV23 only).

In the three main trials, participants with pre-existing underlying diseases were enrolled if the medical condition was stable (did not require a significant change in therapy in the 6 weeks before receipt of study vaccine or any hospitalization for worsening disease within 12 weeks before receipt of study vaccine). In Study 1, approximately one-third of all participants had risk factors that placed them at increased risk for serious pneumococcal disease, including smoking (12.9%), stable medical conditions of chronic cardiovascular disease (5.5%), chronic pulmonary disease including asthma (8.7%), chronic liver disease (0.4%), and diabetes mellitus (13.9%).

## Safety Monitoring

Solicited adverse reactions for Prevnar 20 in the three main trials were monitored in participants recording daily into an electronic diary their local adverse reactions for 10 consecutive days and systemic reactions for 7 consecutive days following vaccination. Across all trials, serious and nonserious adverse events were collected for 1 month after each vaccination. Safety follow-up of serious adverse events (SAEs) continued through 6 months after vaccination with Prevnar 20 or Prevnar 13 (or other appropriate control vaccine), as applicable. Newly diagnosed chronic medical conditions occurring within 6 months after vaccination were also collected via telephone contact.

### Serious Adverse Events

Across all 6 clinical trials combined, performed in adults of all ages, naïve to and with prior pneumococcal vaccination, the proportion of participants reporting 1 or more SAEs within 6 months after vaccination with Prevnar 20 was 1.5% (67 of 4552 participants). This was similar to the proportion of participants with SAEs after vaccination with Prevnar 13 or other applicable control vaccine (1.8%, 44 of 2496). The proportions of participants with SAEs occurring within 1 month after vaccination with Prevnar 20 or with Prevnar 13 or other applicable control vaccine were both 0.4% (19 of 4552 participants and 11 of 2496 participants, respectively). There were no notable patterns or imbalances between vaccine groups for specific categories of serious adverse events that would suggest a causal relationship to Prevnar 20.

### Solicited Adverse Reactions

The frequency and severity of the local adverse reactions (redness, swelling, and pain at the injection site) prompted daily in the 10 days after Prevnar 20 vaccination in adults naïve to pneumococcal vaccination (Study 1) and in adults with prior pneumococcal vaccination (Study 6) are shown in Table 1 and Table 2, respectively. The frequency and severity of the systemic adverse reactions (fever, fatigue, headache, muscle pain, and joint pain) prompted daily in the 7 days after Prevnar 20 vaccination in adults naïve to pneumococcal vaccination (Study 1) and in adults with prior pneumococcal vaccination (Study 6) are shown in Table 3 and Table 4, respectively.

**Table 1. Percentage of Participants With Solicited Local Adverse Reactions, by Maximum Severity, Within 10 Days After Vaccination in Pneumococcal Vaccine-Naïve Adults - Study 1<sup>a</sup>**

|                                     | 18-49 Years of Age                       |  | 50-59 Years of Age                       |  | ≥60 Years of Age                                    |  |
|-------------------------------------|--|--|--|--|---|--|
|                                     | Vaccine Group                            |  |  |  |   |  |
|                                     | Prevnar 20<br>(N <sup>b</sup> =335)<br>% | Prevnar 13<br>(N <sup>b</sup> =112)<br>% | Prevnar 20<br>(N <sup>b</sup> =331)<br>% | Prevnar 13<br>(N <sup>b</sup> =111)<br>% | Prevnar<br>20/Saline<br>(N <sup>b</sup> =1505)<br>% | Prevnar 13/<br>PPSV23<br>(N <sup>b</sup> =1483)<br>% |
| <b>Local Reaction</b>               |  |  |  |  |   |  |
| Pain at injection site <sup>c</sup> |  |  |  |  |   |  |
| Any <sup>d</sup>                    | 81.2                                     | 82.1                                     | 72.5                                     | 69.4                                     | 55.4  | 54.1   |
| Mild                                | 42.7                                     | 52.7                                     | 53.5                                     | 52.3                                     | 45.3  | 44.6   |
| Moderate                            | 38.2                                     | 28.6                                     | 17.8                                     | 16.2                                     | 9.9   | 9.2  |
| Severe                              | 0.3                                      | 0.9                                      | 1.2                                      | 0.9                                      | 0.2   | 0.3  |
| Swelling <sup>c</sup>               |  |  |  |  |   |  |
| Any (>2.0 cm) <sup>d</sup>          | 11.6                                     | 12.5                                     | 8.8                                      | 10.8                                     | 7.5   | 8.0  |
| Mild                                | 7.2                                      | 8.9                                      | 5.7                                      | 7.2                                      | 4.8   | 4.9  |
| Moderate                            | 4.5                                      | 3.6                                      | 3.0                                      | 3.6                                      | 2.4   | 2.8  |
| Severe                              | 0  | 0  | 0  | 0  | 0.3   | 0.3  |

**Table 1. Percentage of Participants With Solicited Local Adverse Reactions, by Maximum Severity, Within 10 Days After Vaccination in Pneumococcal Vaccine-Naïve Adults - Study 1<sup>a</sup>**

|                                 | 18-49 Years of Age                       |  | 50-59 Years of Age                       |  | ≥60 Years of Age                                 |  |
|---------------------------------|--|--|--|--|--|--|
|                                 | Vaccine Group                            |  |  |  |  |  |
|                                 | Prevnar 20<br>(N <sup>b</sup> =335)<br>% | Prevnar 13<br>(N <sup>b</sup> =112)<br>% | Prevnar 20<br>(N <sup>b</sup> =331)<br>% | Prevnar 13<br>(N <sup>b</sup> =111)<br>% | Prevnar 20/Saline<br>(N <sup>b</sup> =1505)<br>% | Prevnar 13/<br>PPSV23<br>(N <sup>b</sup> =1483)<br>% |
| Redness <sup>c</sup>            |  |  |  |  |  |  |
| Any (>2.0 cm) <sup>d</sup>      | 9.0                                      | 9.8                                      | 8.2                                      | 5.4                                      | 7.3  | 6.2  |
| Mild                            | 3.0                                      | 5.4                                      | 5.1                                      | 2.7                                      | 3.7  | 3.8  |
| Moderate                        | 5.4                                      | 4.5                                      | 2.7                                      | 2.7                                      | 2.8  | 2.2  |
| Severe                          | 0.6                                      | 0  | 0.3                                      | 0  | 0.8  | 0.2  |
| Any local reaction <sup>f</sup> | 81.2                                     | 82.1                                     | 72.8                                     | 70.3                                     | 57.4   | 56.0   |

- a. Study 1 was conducted in the United States and in Sweden (NCT03760146).
- b. N = number of participants with any e-diary data reported after vaccination (after Vaccination 1 [Prevnar 20 or Prevnar 13] for Study 1 participants 60 years of age and older). This value is the denominator for the percentage calculations.
- c. Diameters were measured in caliper units of whole numbers from 1 to 21 or 21+. One caliper unit = 0.5 cm. Measurements were rounded up to the nearest whole number. Intensity of redness and swelling were then characterized as follows: mild is >2.0 to 5.0 cm; moderate is >5.0 to 10.0 cm; severe is >10.0 cm.
- d. “Any” includes all participants who reported a reaction as “mild”, “moderate”, or “severe” during Day 1 to Day 10 after vaccination.
- e. Mild = does not interfere with activity; moderate = interferes with activity; severe = prevents daily activity.
- f. “Any local reaction” includes all participants who reported any injection site reaction (pain, swelling, or redness) as “mild”, “moderate”, or “severe” during Day 1 to Day 10 after vaccination.

**Table 2. Percentage of Participants With Solicited Local Adverse Reactions, by Maximum Severity, Within 10 Days After Vaccination in Adults 65 Years of Age and Older With Prior Pneumococcal Vaccination – Study 6<sup>a,b</sup>**

|   | Prior Pneumococcal Vaccination Status <sup>c</sup> |  |  |                                      |  |
|---|--|--|--|--------------------------------------|--|
|   | PPSV23   |  | Prevnar 13                               |                                      | Prevnar 13 and PPSV23                    |
|   | Vaccine Group                                      |  |  |                                      |  |
|   | Prevnar 20<br>(N <sup>d</sup> =253)<br>%           | Prevnar 13<br>(N <sup>d</sup> =121)<br>% | Prevnar 20<br>(N <sup>d</sup> =245)<br>% | PPSV23<br>(N <sup>d</sup> =126)<br>% | Prevnar 20<br>(N <sup>d</sup> =125)<br>% |
| <b>Local Reaction</b>                   |  |  |  |                                      |  |
| Pain at the injection site <sup>g</sup> |  |  |  |                                      |  |
| Any <sup>f</sup>                        | 50.2   | 43.0                                     | 61.2                                     | 56.3                                 | 52.8                                     |
| Mild                                    | 45.8   | 38.8                                     | 54.7                                     | 40.5                                 | 47.2                                     |
| Moderate                                | 4.3  | 3.3                                      | 6.1                                      | 14.3                                 | 5.6                                      |
| Severe                                  | 0  | 0.8                                      | 0.4                                      | 1.6                                  | 0  |
| Swelling <sup>e</sup>                   |  |  |  |                                      |  |
| Any (>2.0 cm) <sup>f</sup>              | 9.9  | 6.6                                      | 9.4                                      | 14.3                                 | 4.0                                      |
| Mild                                    | 5.1  | 6.6                                      | 5.7                                      | 6.3                                  | 1.6                                      |
| Moderate                                | 3.6  | 0  | 3.7                                      | 7.1                                  | 2.4                                      |
| Severe                                  | 1.2  | 0  | 0  | 0.8                                  | 0  |
| Redness <sup>e</sup>                    |  |  |  |                                      |  |
| Any (>2.0 cm) <sup>f</sup>              | 7.9  | 2.5                                      | 8.6                                      | 12.7                                 | 4.8                                      |
| Mild                                    | 3.6  | 1.7                                      | 2.9                                      | 4.8                                  | 1.6                                      |
| Moderate                                | 3.2  | 0.8                                      | 5.3                                      | 7.1                                  | 3.2                                      |
| Severe                                  | 1.2  | 0  | 0.4                                      | 0.8                                  | 0  |
| Any local reaction <sup>h</sup>         | 53.0   | 43.8                                     | 64.1                                     | 57.9                                 | 54.4                                     |

**Table 2. Percentage of Participants With Solicited Local Adverse Reactions, by Maximum Severity, Within 10 Days After Vaccination in Adults 65 Years of Age and Older With Prior Pneumococcal Vaccination – Study 6<sup>a,b</sup>**

|  | Prior Pneumococcal Vaccination Status <sup>c</sup> |   |   |                                      |   |
|--|--|---|---|--------------------------------------|---|
|  | PPSV23   |   | Pevnar 13                               |                                      | Pevnar 13 and PPSV23                    |
|  | Vaccine Group                                      |   |   |                                      |   |
|  | Pevnar 20<br>(N <sup>d</sup> =253)<br>%            | Pevnar 13<br>(N <sup>d</sup> =121)<br>% | Pevnar 20<br>(N <sup>d</sup> =245)<br>% | PPSV23<br>(N <sup>d</sup> =126)<br>% | Pevnar 20<br>(N <sup>d</sup> =125)<br>% |

- Study 6 was conducted in the United States and in Sweden (NCT03835975)
- Open-label administration of Pevnar 20.
- Includes participants who previously received either PPSV23  $\geq 1$  to  $\leq 5$  years before enrollment (PPSV23), Pevnar 13  $\geq 6$  months before enrollment (Pevnar 13), or Pevnar 13 followed by PPSV23  $\geq 1$  year before enrollment (Pevnar 13 and PPSV23) in the study.
- N = number of participants with any e-diary data reported after vaccination. This value is the denominator for the percentage calculations.
- Diameters were measured in caliper units of whole numbers from 1 to 21 or 21+. One caliper unit = 0.5 cm. Measurements were rounded up to the nearest whole number. Intensity of redness and swelling were then characterized as follows: mild is  $>2.0$  to 5.0 cm; moderate is  $>5.0$  to 10.0 cm; severe is  $>10.0$  cm.
- “Any” includes all participants who reported a reaction as “mild”, “moderate”, or “severe” during Day 1 to Day 10 after vaccination.
- Mild = does not interfere with activity; moderate = interferes with activity; severe = prevents daily activity.
- “Any local reaction” includes all participants who reported any injection site reaction (pain, swelling, or redness) as “mild”, “moderate”, or “severe” during Day 1 to Day 10 after vaccination.

**Table 3. Percentage of Participants With Solicited Systemic Reactions, by Maximum Severity, Within 7 Days After Vaccination in Pneumococcal Vaccine-Naïve Adults – Study 1<sup>a</sup>**

|   | 18 through 49 Years of Age              |   | 50 through 59 Years of Age              |   | $\geq 60$ Years of Age                          |   |
|---|---|---|---|---|---|---|
|   | Vaccine Group                           |   |   |   |   |   |
|   | Pevnar 20<br>(N <sup>b</sup> =335)<br>% | Pevnar 13<br>(N <sup>b</sup> =112)<br>% | Pevnar 20<br>(N <sup>b</sup> =331)<br>% | Pevnar 13<br>(N <sup>b</sup> =111)<br>% | Pevnar 20/Saline<br>(N <sup>b</sup> =1505)<br>% | Pevnar 13/PPSV23<br>(N <sup>b</sup> =1483)<br>% |
| <b>Systemic Reaction</b>                              |   |   |   |   |   |   |
| Muscle pain <sup>c</sup>                              |   |   |   |   |   |   |
| Any <sup>d</sup>                                      | 66.6                                    | 74.1                                    | 49.8                                    | 49.5                                    | 39.1  | 37.3  |
| Mild  | 36.4                                    | 42.0                                    | 33.8                                    | 31.5                                    | 28.9  | 26.8  |
| Moderate  | 29.0                                    | 31.3                                    | 15.4                                    | 17.1                                    | 9.8   | 10.0  |
| Severe  | 1.2                                     | 0.9                                     | 0.6                                     | 0.9                                     | 0.4   | 0.5   |
| Fatigue <sup>c</sup>                                  |   |   |   |   |   |   |
| Any <sup>d</sup>                                      | 42.7                                    | 43.8                                    | 39.3                                    | 36.0                                    | 30.2  | 30.7  |
| Mild  | 18.8                                    | 20.5                                    | 21.1                                    | 18.0                                    | 16.1  | 17.5  |
| Moderate  | 22.1                                    | 19.6                                    | 17.2                                    | 15.3                                    | 12.8  | 11.9  |
| Severe  | 1.8                                     | 3.6                                     | 0.9                                     | 2.7                                     | 1.2   | 1.2   |
| Headache <sup>c</sup>                                 |   |   |   |   |   |   |
| Any <sup>d</sup>                                      | 38.8                                    | 33.9                                    | 32.3                                    | 36.0                                    | 21.5  | 23.3  |
| Mild  | 21.5                                    | 16.1                                    | 20.5                                    | 21.6                                    | 15.5  | 17.0  |
| Moderate  | 14.6                                    | 17.0                                    | 10.9                                    | 13.5                                    | 5.4   | 5.9   |
| Severe  | 2.7                                     | 0.9                                     | 0.9                                     | 0.9                                     | 0.7   | 0.3   |
| Joint pain <sup>c</sup>                               |   |   |   |   |   |   |
| Any <sup>d</sup>                                      | 13.4                                    | 17.9                                    | 15.4                                    | 20.7                                    | 12.6  | 13.7  |
| Mild  | 6.3                                     | 8.9                                     | 10.6                                    | 12.6                                    | 6.9   | 7.1   |
| Moderate  | 7.2                                     | 8.0                                     | 4.8                                     | 7.2                                     | 5.4   | 6.3   |
| Severe  | 0                                       | 0.9                                     | 0                                       | 0.9                                     | 0.3   | 0.2   |
| Fever   |   |   |   |   |   |   |
| $\geq 38.0^{\circ}\text{C}$                           | 1.2                                     | 1.8                                     | 1.5                                     | 0.9                                     | 0.9   | 0.8   |
| $\geq 38.0^{\circ}\text{C}$ to $38.4^{\circ}\text{C}$ | 0.6                                     | 0                                       | 0.6                                     | 0.9                                     | 0.3   | 0.4   |
| $>38.4^{\circ}\text{C}$ to $38.9^{\circ}\text{C}$     | 0.3                                     | 0                                       | 0.3                                     | 0                                       | 0.3   | 0.2   |
| $>38.9^{\circ}\text{C}$ to $40.0^{\circ}\text{C}$     | 0.3                                     | 1.8                                     | 0.3                                     | 0                                       | 0   | 0   |
| $>40.0^{\circ}\text{C}$                               | 0                                       | 0                                       | 0.3                                     | 0                                       | 0.3   | 0.2   |
| Any systemic reaction <sup>e</sup>                    | 79.4                                    | 83.0                                    | 69.5                                    | 67.6                                    | 55.2  | 55.4  |

**Table 3. Percentage of Participants With Solicited Systemic Reactions, by Maximum Severity, Within 7 Days After Vaccination in Pneumococcal Vaccine-Naïve Adults – Study 1<sup>a</sup>**

|  | 18 through 49 Years of Age               |  | 50 through 59 Years of Age               |  | ≥60 Years of Age                                 |  |
|--|--|--|--|--|--|--|
|  | Vaccine Group                            |  |  |  |  |  |
|  | Prevnar 20<br>(N <sup>b</sup> =335)<br>% | Prevnar 13<br>(N <sup>b</sup> =112)<br>% | Prevnar 20<br>(N <sup>b</sup> =331)<br>% | Prevnar 13<br>(N <sup>b</sup> =111)<br>% | Prevnar 20/Saline<br>(N <sup>b</sup> =1505)<br>% | Prevnar 13/PPSV23<br>(N <sup>b</sup> =1483)<br>% |
| Use of antipyretic or pain medication <sup>f</sup> | 25.7                                     | 23.2                                     | 24.5                                     | 27.9                                     | 18.5   | 20.4   |

- a. Study 1 was conducted in the United States and in Sweden (NCT03760146).
- b. N = number of participants with any e-diary data reported after vaccination (after Vaccination 1 [Prevnar 20 or Prevnar 13] for Study 1 participants 60 years of age and older). This value is the denominator for the percentage calculations.
- c. Mild = does not interfere with activity; moderate = some interference with activity; severe = prevents daily activity.
- d. “Any” includes all participants who reported a reaction as “mild”, “moderate”, or “severe” during Day 1 to Day 7 after vaccination.
- e. “Any systemic reaction” includes all participants who reported any fever ≥38.0°C or any other systemic reaction (fatigue, headache, joint pain, or muscle pain) as “mild”, “moderate”, or “severe” during Day 1 to Day 7 after vaccination.
- f. Severity was not collected for use of antipyretic or pain medication. The numbers listed reflect “yes” responses (i.e., number of reactions reported).

**Table 4. Percentage of Participants With Solicited Systemic Reactions, by Maximum Severity, Within 7 Days After Vaccination in Adults 65 Years of Age and Older With Prior Pneumococcal Vaccination – Study 6<sup>a,b</sup>**

|                                    | Prior Pneumococcal Vaccination Status <sup>c</sup> |  |  |                                      |  |
|------------------------------------|--|--|--|--------------------------------------|--|
|                                    | PPSV23   |  | Prevnar 13                               |                                      | Prevnar 13 and PPSV23                    |
|                                    | Vaccine Group                                      |  |  |                                      |  |
|                                    | Prevnar 20<br>(N <sup>d</sup> =253)<br>%           | Prevnar 13<br>(N <sup>d</sup> =121)<br>% | Prevnar 20<br>(N <sup>d</sup> =245)<br>% | PPSV23<br>(N <sup>d</sup> =126)<br>% | Prevnar 20<br>(N <sup>d</sup> =125)<br>% |
| <b>Systemic Reaction</b>           |  |  |  |                                      |  |
| Muscle pain <sup>e</sup>           |  |  |  |                                      |  |
| Any <sup>f</sup>                   | 32.0   | 31.4                                     | 33.9                                     | 46.0                                 | 37.6                                     |
| Mild                               | 26.1   | 24.0                                     | 25.3                                     | 31.7                                 | 28.0                                     |
| Moderate                           | 5.5  | 5.0                                      | 8.6                                      | 11.9                                 | 8.8                                      |
| Severe                             | 0.4  | 2.5                                      | 0  | 2.4                                  | 0.8                                      |
| Fatigue <sup>e</sup>               |  |  |  |                                      |  |
| Any <sup>f</sup>                   | 28.9   | 22.3                                     | 31.0                                     | 33.3                                 | 32.8                                     |
| Mild                               | 17.8   | 9.9                                      | 19.6                                     | 19.8                                 | 19.2                                     |
| Moderate                           | 11.1   | 9.9                                      | 10.2                                     | 13.5                                 | 12.0                                     |
| Severe                             | 0  | 2.5                                      | 1.2                                      | 0                                    | 1.6                                      |
| Headache <sup>e</sup>              |  |  |  |                                      |  |
| Any <sup>f</sup>                   | 17.8   | 18.2                                     | 13.5                                     | 21.4                                 | 19.2                                     |
| Mild                               | 12.6   | 12.4                                     | 9.8                                      | 20.6                                 | 12.8                                     |
| Moderate                           | 4.7  | 5.8                                      | 3.7                                      | 0.8                                  | 5.6                                      |
| Severe                             | 0.4  | 0  | 0  | 0                                    | 0.8                                      |
| Joint pain <sup>e</sup>            |  |  |  |                                      |  |
| Any <sup>f</sup>                   | 6.7  | 10.7                                     | 11.8                                     | 15.9                                 | 16.8                                     |
| Mild                               | 4.7  | 5.0                                      | 7.8                                      | 10.3                                 | 12.8                                     |
| Moderate                           | 2.0  | 5.0                                      | 4.1                                      | 5.6                                  | 4.0                                      |
| Severe                             | 0  | 0.8                                      | 0  | 0                                    | 0  |
| Fever                              |  |  |  |                                      |  |
| ≥38.0°C                            | 0.8  | 0  | 0  | 1.6                                  | 0  |
| ≥38.0°C to 38.4°C                  | 0.8  | 0  | 0  | 0.8                                  | 0  |
| >38.4°C to 38.9°C                  | 0  | 0  | 0  | 0.8                                  | 0  |
| >38.9°C to 40.0°C                  | 0  | 0  | 0  | 0                                    | 0  |
| >40.0°C                            | 0  | 0  | 0  | 0                                    | 0  |
| Any systemic reaction <sup>g</sup> | 51.8   | 43.8                                     | 50.2                                     | 59.5                                 | 52.8                                     |



**Table 4. Percentage of Participants With Solicited Systemic Reactions, by Maximum Severity, Within 7 Days After Vaccination in Adults 65 Years of Age and Older With Prior Pneumococcal Vaccination – Study 6<sup>a,b</sup>**

|  | Prior Pneumococcal Vaccination Status <sup>c</sup> |  |  |                                   |  |
|--|--|--|--|-----------------------------------|--|
|  | PPSV23   |  | Pprevnar 13                            |                                   | Pprevnar 13 and PPSV23                 |
|  | Vaccine Group                                      |  |  |                                   |  |
|  | Pprevnar 20 (N <sup>d</sup> =253)<br>%             | Pprevnar 13 (N <sup>d</sup> =121)<br>% | Pprevnar 20 (N <sup>d</sup> =245)<br>% | PPSV23 (N <sup>d</sup> =126)<br>% | Pprevnar 20 (N <sup>d</sup> =125)<br>% |
| <b>Systemic Reaction</b>                           |  |  |  |                                   |  |
| Use of antipyretic or pain medication <sup>h</sup> | 15.8   | 14.9                                   | 17.1                                   | 19.8                              | 17.6                                   |

- a. Study 6 was conducted in the United States and in Sweden (NCT03835975).
- b. Open-label administration of Pprevnar 20.
- c. Includes participants who previously received either PPSV23  $\geq 1$  to  $\leq 5$  years before enrollment (PPSV23), Pprevnar 13  $\geq 6$  months before enrollment (Pprevnar 13), or Pprevnar 13 followed by PPSV23  $\geq 1$  year before enrollment (Pprevnar 13 and PPSV23) in the study.
- d. N = number of participants with any e-diary data reported after vaccination. This value is the denominator for the percentage calculations.
- e. Mild = does not interfere with activity; moderate = interferes with activity; severe = prevents daily activity.
- f. “Any” includes all participants who reported a reaction as “mild”, “moderate”, or “severe” during Day 1 to Day 7 after vaccination.
- g. “Any systemic reaction” includes all participants who reported any fever  $\geq 38.0^{\circ}\text{C}$  or any other systemic reaction (fatigue, headache, joint pain, or muscle pain) as “mild”, “moderate”, or “severe” during Day 1 to Day 7 after vaccination.
- h. Severity was not collected for use of antipyretic or pain medication. The numbers listed reflect “yes” responses (i.e., number of reactions reported).

## 6.2 Postmarketing Experience With Pprevnar 13

The postmarketing safety experience with Pprevnar 13 is relevant to Pprevnar 20 since the vaccines are manufactured and formulated similarly and contain 13 of the same polysaccharide conjugates. These adverse reactions are included based on one or more of the following factors: severity, frequency of reporting, or strength of evidence for a causal relationship to Pprevnar 13 vaccine in adults. Because these reactions are reported voluntarily from a population of uncertain size, it is not always possible to reliably estimate their frequency or establish a causal relationship to product exposure. The following adverse reactions have been spontaneously reported during postapproval use of Pprevnar 13 and may also be seen in postmarketing experience with Pprevnar 20. Reactions reported in the postmarketing experience and which pertain only to pediatric populations are not included in this listing.

- Immune System Disorders: Anaphylactic/anaphylactoid reaction, including shock
- Skin and Subcutaneous Tissue Disorders: Angioneurotic edema, Erythema multiforme
- Blood and lymphatic system disorders: Lymphadenopathy localized to the region of the injection site
- General Disorders and Administration Site Conditions: Vaccination-site dermatitis, vaccination-site pruritus, vaccination-site urticaria

## 7 DRUG INTERACTIONS

### 7.1 Prior Vaccination with PNEUMOVAX 23

Receipt of PPSV23 1 to 5 years prior to Pprevnar 20 resulted in diminished OPA geometric mean titers (GMTs) to Pprevnar 20 compared to OPA GMTs in recipients who received Pprevnar 13 at least 6 months previously, and compared to OPA GMTs in recipients who received Pprevnar 13 followed by PPSV23, with the last dose of PPSV23 given at least 1 year prior to Pprevnar 20 [see *Clinical Studies (14.2)*].

## 7.2 Immunosuppressive Therapies

Individuals with impaired immune responsiveness due to the use of immunosuppressive therapy (including irradiation, corticosteroids, antimetabolites, alkylating agents, and cytotoxic agents) may not respond optimally to Prevnar 20.

## 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 US 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. There are no adequate and well-controlled studies of Prevnar 20 in pregnant women. Available data on Prevnar 20 administered to pregnant women are insufficient to inform vaccine-associated risks in pregnancy.

A developmental toxicity study was performed in female rabbits administered Prevnar 20 prior to mating and during gestation. The dose was 0.5 mL at each occasion (a single human dose is 0.5 mL). This study revealed no evidence of harm to the fetus due to Prevnar 20 (*see Data*).

#### Data

##### *Animal Data*

In a developmental toxicity study, female rabbits were administered Prevnar 20 by intramuscular injection twice prior to mating (17 days and 4 days prior to mating) and twice during gestation (Gestation Days 10 and 24), 0.5 mL/rabbit/occasion (a single human dose). No adverse effects on pre-weaning development were observed. There were no vaccine-related fetal malformations or variations.

### 8.2 Lactation

#### Risk Summary

It is not known whether Prevnar 20 is excreted in human milk. Data are not available to assess the effects of Prevnar 20 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 Prevnar 20 and any potential adverse effects on the breastfed child from Prevnar 20 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

The safety and effectiveness of Prevnar 20 in individuals younger than 18 years of age have not been established.

### 8.5 Geriatric Use

Of the total number of Prevnar 20 recipients 18 years of age and older evaluated for safety in the 3 main clinical trials (N=4263), 26.7% (n=1138) were 65 years of age and older and 1.7% (n=72) were 80 years of age and older [*see Clinical Studies (14.2)*].

Pevnar 20 recipients 70 through 79 years of age and  $\geq 80$  years of age had lower OPA GMTs for all pneumococcal serotypes compared to Pevnar 20 recipients 18 through 49 years, 50 through 59, and 60 through 64 years of age [see *Clinical Studies (14.1)*].

## 11 DESCRIPTION

Pevnar 20, Pneumococcal 20-valent Conjugate Vaccine is a sterile suspension of saccharides of the capsular antigens of *S. pneumoniae* serotypes 1, 3, 4, 5, 6A, 6B, 7F, 8, 9V, 10A, 11A, 12F, 14, 15B, 18C, 19A, 19F, 22F, 23F, and 33F, individually linked to non-toxic diphtheria CRM<sub>197</sub> protein. Each serotype is grown in soy peptone broth. The individual polysaccharides are purified by a series of chemical and physical methods. The polysaccharides are chemically activated and then directly conjugated to the carrier protein CRM<sub>197</sub>, to form the glycoconjugate. CRM<sub>197</sub> is a non-toxic variant of diphtheria toxin isolated from cultures of *Corynebacterium diphtheriae* strain C7 ( $\beta$ 197) grown in a casamino acids and yeast extract-based medium or in a chemically-defined medium. CRM<sub>197</sub> is purified by a series of chemical and physical methods. The individual glycoconjugates are purified by a series of chemical and physical methods and analyzed for saccharide to protein ratios, molecular size, free saccharide, and free protein.

The individual glycoconjugates are compounded to formulate Pevnar 20. Potency of the formulated vaccine is determined by quantification of each of the saccharide antigens and by the saccharide to protein ratios in the individual glycoconjugates. Each 0.5 mL dose of the vaccine is formulated to contain approximately 2.2  $\mu$ g of each of *S. pneumoniae* serotypes 1, 3, 4, 5, 6A, 7F, 8, 9V, 10A, 11A, 12F, 14, 15B, 18C, 19A, 19F, 22F, 23F, 33F saccharides, 4.4  $\mu$ g of 6B saccharides, 51  $\mu$ g CRM<sub>197</sub> carrier protein, 100  $\mu$ g polysorbate 80, 295  $\mu$ g succinate buffer, 4.4 mg sodium chloride, and 125  $\mu$ g aluminum as aluminum phosphate adjuvant.

## 12 CLINICAL PHARMACOLOGY

### 12.1 Mechanism of Action

Protection against pneumococcal disease is conferred mainly by opsonophagocytic killing of *S. pneumoniae*. Pevnar 20 generates functional antibodies as measured by opsonophagocytic activity (OPA).

The effectiveness of Pevnar 20 was assessed by measuring serotype-specific serum OPA of antibodies at 1-month post vaccination.

An opsonic antibody titer that is predictive of protection against invasive pneumococcal disease or pneumococcal pneumonia has not been established.

## 13 NONCLINICAL TOXICOLOGY

### 13.1 Carcinogenesis, Mutagenesis, Impairment of Fertility

Pevnar 20 has not been evaluated for the potential to cause carcinogenicity, genotoxicity, or impairment of male fertility. Vaccination of female rabbits with Pevnar 20 had no effect on female fertility [see *Use in Specific Populations (8.1)*].

## 14 CLINICAL STUDIES

### 14.1 Prevnar 13 Adult Efficacy Data

Efficacy and effectiveness of Prevnar 13 are relevant to Prevnar 20, since the vaccines are manufactured similarly and contain 13 of the same polysaccharide conjugates.

The efficacy of Prevnar 13 against vaccine-type (VT) pneumococcal community-acquired pneumonia (CAP) and invasive pneumococcal disease (IPD) was assessed in a randomized, double-blind, placebo-controlled study (Community-Acquired Pneumonia Immunization Trial in Adults [CAPiTA]) conducted over ~4 years in the Netherlands. A total of 84,496 participants 65 years of age and older received a single dose of either Prevnar 13 or placebo in a 1:1 randomization; 42,240 participants were vaccinated with Prevnar 13 and 42,256 participants were vaccinated with placebo. Chronic medical conditions (asthma, diabetes, heart, liver, and/or lung diseases) were reported in 42.3% of study participants at baseline.

The primary objective was to demonstrate the efficacy of Prevnar 13 in the prevention of a first episode of confirmed VT-CAP (defined as presence of  $\geq 2$  specified clinical criteria, chest X-ray consistent with CAP as determined by a central committee of radiologists, and positive VT-specific urinary antigen detection assay [UAD] or isolation of VT *S. pneumoniae* from blood or other sterile site). The secondary objectives were to demonstrate the efficacy of Prevnar 13 in the prevention of a first episode of 1) confirmed nonbacteremic/noninvasive (NB/NI) VT-CAP (an episode of VT-CAP for which the blood culture result and any other sterile site culture results were negative for *S. pneumoniae*) and 2) VT-IPD (the presence of *S. pneumoniae* in a sterile site).

Surveillance for suspected pneumonia and IPD began immediately after vaccination and continued through identification of a prespecified number of cases. Participants who had a CAP or IPD episode with symptom onset less than 14 days after vaccination were excluded from all analyses.

The median duration of follow-up per participant was 3.93 years. Prevnar 13 demonstrated statistically significant vaccine efficacy (VE) in preventing first episodes of VT pneumococcal CAP, NB/NI VT pneumococcal CAP, and VT-IPD (see Table 5).

**Table 5. Vaccine Efficacy for the Primary and Secondary Efficacy Endpoints – Per-Protocol Population**

| Efficacy Endpoint  | Total Number of Episodes | Vaccine Group |          | VE (%) | (95.2% CI)   |
|--|--------------------------|---------------|----------|--------|--------------|
|  |                          | Prevnar 13    | Placebo  |        |              |
|  |                          | N=42,240      | N=42,256 |        |              |
| <b>Primary endpoint:</b><br>First case of confirmed VT pneumococcal CAP            | 139                      | 49            | 90       | 45.6   | (21.8, 62.5) |
| <b>Secondary endpoint:</b><br>First episode of confirmed NB/NI VT pneumococcal CAP | 93                       | 33            | 60       | 45     | (14.2, 65.3) |
| <b>Secondary endpoint:</b><br>First episode of VT-IPD                              | 35                       | 7             | 28       | 75     | (41.1, 90.9) |

Abbreviations: CAP = community-acquired pneumonia; CI = confidence interval; NB/NI = nonbacteremic/noninvasive; IPD = invasive pneumococcal disease; VE = vaccine efficacy; VT = vaccine-type.

## 14.2 Prevnar 20 Clinical Trials

### Immunogenicity of Prevnar 20 in Pneumococcal Vaccine Naïve Adults

Prevnar 20 effectiveness against invasive pneumococcal disease caused by the 20 vaccine serotypes and against pneumonia caused by the 13 serotypes in Prevnar 13 was inferred from comparative immunogenicity to US-licensed pneumococcal vaccines (Prevnar 13 and PPSV23). Study 1, conducted in the United States and Sweden, was designed to evaluate immunologic noninferiority of Prevnar 20 to Prevnar 13 (for the 13 original *S. pneumoniae* serotypes) and PPSV23 (for the 7 new *S. pneumoniae* serotypes) in pneumococcal vaccine naïve adults ≥60 years of age. Immune responses elicited by Prevnar 20 and the control pneumococcal vaccines were measured by an OPA assay. OPA assays were used to measure functional antibodies to *S. pneumoniae*.

Study 1 included healthy adults and immunocompetent adults with stable underlying conditions, including chronic cardiovascular disease, chronic pulmonary disease, renal disorders, diabetes mellitus, chronic liver disease, and medical risk conditions and behaviors (e.g., smoking) that are known to increase the risk of serious pneumococcal pneumonia and IPD. A stable medical condition was defined as a medical condition not requiring significant change in therapy in the previous 6 weeks (i.e., change to new therapy category due to worsening disease) or any hospitalization for worsening disease within 12 weeks before receipt of the study vaccine.

### Comparison of Immune Responses of Prevnar 20 to Prevnar 13 and PPSV23 in Pneumococcal Vaccine Naïve Adults ≥60 Years of Age

In a randomized, active-controlled, double-blind noninferiority clinical trial (Study 1) of Prevnar 20 in the United States and Sweden, pneumococcal vaccine -naïve adults 18 years of age and older were enrolled into 1 of 3 cohorts based on their age at enrollment and randomized to receive either Prevnar 20 or control. Participants 60 years of age and older were randomly assigned (1:1 ratio) to Prevnar 20 followed 1 month later with saline placebo or to Prevnar 13 followed 1 month later with PPSV23.

Serotype-specific OPA GMTs were measured before the first vaccination and 1 month after each vaccination. Noninferiority of immune responses, OPA GMTs 1 month after vaccination, with Prevnar 20 to a control

vaccine for a serotype was declared if the lower bound of the 2 sided 95% CI for the GMT ratio (Prevnar 20/Prevnar 13; Prevnar 20/PPSV23) for that serotype was greater than 0.5.

In adults 60 years of age and older, immune responses to all 13 matched serotypes elicited by Prevnar 20 were noninferior to the immune responses to the serotypes elicited by Prevnar 13 one month after vaccination. Immune responses to 6 out of the 7 additional serotypes induced by Prevnar 20 were noninferior to the immune responses to these same serotypes induced by PPSV23 one month after vaccination. The response to serotype 8 missed the prespecified statistical noninferiority criterion by a small margin (the lower bound of the 2-sided 95% CI for the GMT ratio being 0.49 versus >0.50) (Table 6).

In supportive analyses, 77.8% of participants in the Prevnar 20 group achieved a  $\geq 4$ -fold rise in serotype 8 OPA titers from before vaccination to 1 month post-vaccination.

**Table 6. OPA GMTs 1 Month After Vaccination in Adults 60 Years of Age and Older Given Prevnar 20 Compared to Prevnar 13 for the 13 Matched Serotypes and PPSV23 for the 7 Additional Serotypes (Study 1)<sup>a,b,c,d</sup>**

|                 | <b>Prevnar 20<br/>(N = 1157–1430)</b> | <b>Prevnar 13<br/>(N = 1390–1419)</b> | <b>PPSV23<br/>(N = 1201–1319)</b> | <b>Vaccine<br/>Comparison<br/>GMT Ratio<sup>e</sup><br/>(95% CI)<sup>e</sup></b> |
|-----------------|---------------------------------------|---------------------------------------|-----------------------------------|--|
|                 | <b>GMT<sup>e</sup></b>                | <b>GMT<sup>e</sup></b>                | <b>GMT<sup>e</sup></b>            |  |
| <b>Serotype</b> |                                       |                                       |                                   |  |
| 1               | 123                                   | 154                                   |                                   | 0.80<br>(0.71, 0.90)   |
| 3               | 41                                    | 48                                    |                                   | 0.85<br>(0.78, 0.93)   |
| 4               | 509                                   | 627                                   |                                   | 0.81<br>(0.71, 0.93)   |
| 5               | 92                                    | 110                                   |                                   | 0.83<br>(0.74, 0.94)   |
| 6A              | 889                                   | 1165                                  |                                   | 0.76<br>(0.66, 0.88)   |
| 6B              | 1115                                  | 1341                                  |                                   | 0.83<br>(0.73, 0.95)   |
| 7F              | 969                                   | 1129                                  |                                   | 0.86<br>(0.77, 0.96)   |
| 9V              | 1456                                  | 1568                                  |                                   | 0.93<br>(0.82, 1.05)   |
| 14              | 747                                   | 747                                   |                                   | 1.00<br>(0.89, 1.13)   |
| 18C             | 1253                                  | 1482                                  |                                   | 0.85<br>(0.74, 0.97)   |
| 19A             | 518                                   | 645                                   |                                   | 0.80<br>(0.71, 0.90)   |
| 19F             | 266                                   | 333                                   |                                   | 0.80<br>(0.70, 0.91)   |
| 23F             | 277                                   | 335                                   |                                   | 0.83<br>(0.70, 0.97)   |

**Table 6. OPA GMTs 1 Month After Vaccination in Adults 60 Years of Age and Older Given Pevnar 20 Compared to Pevnar 13 for the 13 Matched Serotypes and PPSV23 for the 7 Additional Serotypes (Study 1)<sup>a,b,c,d</sup>**

|                             | <b>Pevnar 20<br/>(N = 1157–1430)</b> | <b>Pevnar 13<br/>(N = 1390–1419)</b> | <b>PPSV23<br/>(N = 1201–1319)</b> | <b>Vaccine<br/>Comparison<br/>GMT Ratio<sup>e</sup><br/>(95% CI)<sup>e</sup></b> |
|-----------------------------|--------------------------------------|--------------------------------------|-----------------------------------|--|
|                             | <b>GMT<sup>e</sup></b>               | <b>GMT<sup>e</sup></b>               | <b>GMT<sup>e</sup></b>            |  |
| <b>Additional Serotypes</b> |                                      |                                      |                                   |  |
| 8                           | 466                                  |                                      | 848                               | 0.55<br>(0.49, 0.62)   |
| 10A                         | 2008                                 |                                      | 1080                              | 1.86<br>(1.63, 2.12)   |
| 11A                         | 4427                                 |                                      | 2535                              | 1.75<br>(1.52, 2.01)   |
| 12F                         | 2539                                 |                                      | 1717                              | 1.48<br>(1.27, 1.72)   |
| 15B                         | 2398                                 |                                      | 769                               | 3.12<br>(2.62, 3.71)   |
| 22F                         | 3666                                 |                                      | 1846                              | 1.99<br>(1.70, 2.32)   |
| 33F                         | 5126                                 |                                      | 3721                              | 1.38<br>(1.21, 1.57)   |

Abbreviations: CI = confidence interval; GMT = geometric mean titer; LLOQ = lower limit of quantitation; N = number of participants; OPA = opsonophagocytic activity; PPSV23 = pneumococcal polysaccharide vaccine (23-valent).

a. Study 1 was conducted in the United States and in Sweden (NCT03760146).

b. Noninferiority for a serotype was met if the lower bound of the 2-sided 95% CI for the GMT ratio (ratio of Pevnar 20/comparator) was greater than 0.5 (2-fold criterion for noninferiority).

c. Assay results below the LLOQ were set to  $0.5 \times$  LLOQ in the analysis.

d. Evaluable immunogenicity population.

e. GMTs, GMT ratios, and the associated 2-sided CIs were based on analysis of log-transformed OPA titers using a regression model with vaccine group, sex, smoking status, age at vaccination in years, and baseline log-transformed OPA titers.

### Immunobridging in Pneumococcal Vaccine Naïve Adults 18 Through 59 Years of Age

In Study 1 (described above), the effectiveness of Pevnar 20 in adults 50 through 59 years of age and in adults 18 through 49 years of age was inferred following comparison of the immune response to each of the 20 vaccine serotypes in each of these age groups to the corresponding serotype-specific immune responses in adults 60 through 64 years of age following Pevnar 20 (immunobridging). In Study 1, pneumococcal vaccine-naïve participants 50 through 59 years of age and 18 through 49 years of age were randomly assigned (3:1 ratio) to receive 1 vaccination with Pevnar 20 or Pevnar 13. Serotype-specific OPA GMTs were measured before vaccination and 1 month after vaccination. A comparative analysis of Pevnar 20 in the younger age group versus Pevnar 20 in adults 60 through 64 years of age for each vaccine serotype was performed to support the indication in adults 18 through 49 years of age and 50 through 59 years of age. Immunobridging was to be declared successful if the lower bound of the 2-sided 95% CI for the GMT ratio (Pevnar 20 in participants 18 through 49 years of age/60 through 64 years of age and in participants 50 through 59 years of age/60 through 64 years of age) for the 20 serotypes was  $>0.5$  (2-fold). Pevnar 20 elicited serotype-specific immune responses to each of the 20 vaccine serotypes in both of the younger age groups that were within 2-fold of the corresponding serotype-specific responses in adults 60 through 64 years of age, when measured 1 month after vaccination (Table 7).

**Table 7. Comparisons of OPA GMTs 1 Month After Prevnar 20 in Adults 18 Through 49 or 50 Through 59 Years of Age to Adults 60 Through 64 Years of Age (Study 1)<sup>a,b,c,d</sup>**

|                             | <b>18–49 Years<br/>(N = 251–317)</b> | <b>60–64 Years<br/>(N = 765–941)</b> | <b>18–49 Years<br/>Relative to<br/>60–64 Years</b>    | <b>50–59 Years<br/>(N = 266–320)</b> | <b>60–64 Years<br/>(N = 765–941)</b> | <b>50–59 Years<br/>Relative to<br/>60–64 Years</b>    |
|-----------------------------|--------------------------------------|--------------------------------------|---|--------------------------------------|--------------------------------------|---|
|                             | <b>GMT<sup>e</sup></b>               | <b>GMT<sup>e</sup></b>               | <b>GMT Ratio<sup>e</sup><br/>(95% CI)<sup>e</sup></b> | <b>GMT<sup>e</sup></b>               | <b>GMT<sup>e</sup></b>               | <b>GMT Ratio<sup>e</sup><br/>(95% CI)<sup>e</sup></b> |
| <b>Serotype</b>             |                                      |                                      |   |                                      |                                      |   |
| 1                           | 163                                  | 132                                  | 1.23<br>(1.01, 1.50)                                  | 136                                  | 132                                  | 1.03<br>(0.84, 1.26)                                  |
| 3                           | 42                                   | 42                                   | 1.00<br>(0.87, 1.16)                                  | 43                                   | 41                                   | 1.06<br>(0.92, 1.22)                                  |
| 4                           | 1967                                 | 594                                  | 3.31<br>(2.65, 4.13)                                  | 633                                  | 578                                  | 1.10<br>(0.87, 1.38)                                  |
| 5                           | 108                                  | 97                                   | 1.11<br>(0.91, 1.36)                                  | 85                                   | 97                                   | 0.88<br>(0.72, 1.07)                                  |
| 6A                          | 3931                                 | 1023                                 | 3.84<br>(3.06, 4.83)                                  | 1204                                 | 997                                  | 1.21<br>(0.95, 1.53)                                  |
| 6B                          | 4260                                 | 1250                                 | 3.41<br>(2.73, 4.26)                                  | 1503                                 | 1199                                 | 1.25<br>(1.00, 1.56)                                  |
| 7F                          | 1873                                 | 1187                                 | 1.58<br>(1.30, 1.91)                                  | 1047                                 | 1173                                 | 0.89<br>(0.74, 1.07)                                  |
| 9V                          | 6041                                 | 1727                                 | 3.50<br>(2.83, 4.33)                                  | 1726                                 | 1688                                 | 1.02<br>(0.83, 1.26)                                  |
| 14                          | 1848                                 | 773                                  | 2.39<br>(1.93, 2.96)                                  | 926                                  | 742                                  | 1.25<br>(1.01, 1.54)                                  |
| 18C                         | 4460                                 | 1395                                 | 3.20<br>(2.53, 4.04)                                  | 1805                                 | 1355                                 | 1.33<br>(1.06, 1.68)                                  |
| 19A                         | 1415                                 | 611                                  | 2.31<br>(1.91, 2.81)                                  | 618                                  | 600                                  | 1.03<br>(0.85, 1.25)                                  |
| 19F                         | 655                                  | 301                                  | 2.17<br>(1.76, 2.68)                                  | 287                                  | 290                                  | 0.99<br>(0.80, 1.22)                                  |
| 23F                         | 1559                                 | 325                                  | 4.80<br>(3.65, 6.32)                                  | 549                                  | 328                                  | 1.68<br>(1.27, 2.22)                                  |
| <b>Additional Serotypes</b> |                                      |                                      |   |                                      |                                      |   |
| 8                           | 867                                  | 508                                  | 1.71<br>(1.38, 2.12)                                  | 487                                  | 502                                  | 0.97<br>(0.78, 1.20)                                  |
| 10A                         | 4157                                 | 2570                                 | 1.62<br>(1.31, 2.00)                                  | 2520                                 | 2437                                 | 1.03<br>(0.84, 1.28)                                  |
| 11A                         | 7169                                 | 5420                                 | 1.32<br>(1.04, 1.68)                                  | 6417                                 | 5249                                 | 1.22<br>(0.96, 1.56)                                  |
| 12F                         | 5875                                 | 3075                                 | 1.91<br>(1.51, 2.41)                                  | 3445                                 | 3105                                 | 1.11<br>(0.88, 1.39)                                  |
| 15B                         | 4601                                 | 3019                                 | 1.52<br>(1.13, 2.05)                                  | 3356                                 | 2874                                 | 1.17<br>(0.88, 1.56)                                  |
| 22F                         | 7568                                 | 4482                                 | 1.69<br>(1.30, 2.20)                                  | 3808                                 | 4228                                 | 0.90<br>(0.69, 1.17)                                  |
| 33F                         | 7977                                 | 5693                                 | 1.40<br>(1.10, 1.79)                                  | 5571                                 | 5445                                 | 1.02<br>(0.81, 1.30)                                  |



**Table 7. Comparisons of OPA GMTs 1 Month After Prevnar 20 in Adults 18 Through 49 or 50 Through 59 Years of Age to Adults 60 Through 64 Years of Age (Study 1)<sup>a,b,c,d</sup>**

|  | <b>18–49 Years<br/>(N = 251–317)</b> | <b>60–64 Years<br/>(N = 765–941)</b> | <b>18–49 Years<br/>Relative to<br/>60–64 Years</b>    | <b>50–59 Years<br/>(N = 266–320)</b> | <b>60–64 Years<br/>(N = 765–941)</b> | <b>50–59 Years<br/>Relative to<br/>60–64 Years</b>    |
|--|--------------------------------------|--------------------------------------|---|--------------------------------------|--------------------------------------|---|
|  | <b>GMT<sup>e</sup></b>               | <b>GMT<sup>e</sup></b>               | <b>GMT Ratio<sup>e</sup><br/>(95% CI)<sup>e</sup></b> | <b>GMT<sup>e</sup></b>               | <b>GMT<sup>e</sup></b>               | <b>GMT Ratio<sup>e</sup><br/>(95% CI)<sup>e</sup></b> |

Abbreviations: CI = confidence interval; GMT = geometric mean titer; LLOQ = lower limit of quantitation; N = number of participants; OPA = opsonophagocytic activity; PPSV23 = pneumococcal polysaccharide vaccine 23-valent vaccine.

- Study 1 was conducted in the United States and in Sweden (NCT03760146).
- Immunobridging for a serotype was met if the lower bound of the 2-sided 95% CI for the GMT ratio (ratio of younger age group/60 through 64 years of age group) was greater than 0.5 (2-fold success criterion).
- Assay results below the LLOQ were set to  $0.5 \times$  LLOQ in the analysis.
- Evaluable immunogenicity population.
- GMTs, GMT ratios, and the associated 2-sided CIs were based on analysis of log-transformed OPA titers using a regression model with age group, sex, smoking status, and baseline log-transformed OPA titers. The comparisons between adults 18 through 49 years of age and adults 60 through 64 years of age and between adults 50 through 59 years of age and adults 60 through 64 years of age were based on separate regression models.

### Immunogenicity of Prevnar 20 in Adults Previously Vaccinated With Pneumococcal Vaccine

A randomized, open-label clinical trial (Study 6) described immune responses to Prevnar 20 in adults 65 years of age and older previously vaccinated with PPSV23 ( $\geq 1$  to  $\leq 5$  years prior to enrollment), previously vaccinated with Prevnar 13 ( $\geq 6$  months prior to enrollment), or previously vaccinated with Prevnar 13 followed by PPSV23 (with PPSV23 vaccination  $\geq 1$  year prior to enrollment). Participants in this clinical trial previously vaccinated with Prevnar 13 (Prevnar 13 only or followed by PPSV23) were enrolled at sites in the United States and participants previously vaccinated with PPSV23 only were also enrolled from Swedish sites (35.5% in that category). Immune responses elicited by Prevnar 20 were measured by an OPA assay.

OPA GMTs in participants who received PPSV23 1 to 5 years prior to Prevnar 20 were diminished compared to OPA GMTs in participants who received Prevnar 13 at least 6 months previously and compared to OPA GMTs in participants who received Prevnar 13 followed by PPSV23, with the last PPSV23 dose given at least 1 year prior to Prevnar 20.

## 16 HOW SUPPLIED/STORAGE AND HANDLING

Pre-filled Syringe, 1 Dose (10 per package) – NDC 0005-2000-10.

Pre-filled Syringe, 1 Dose (1 per package) – NDC 0005-2000-02.

After shipping, Prevnar 20 may arrive at temperatures between 2 °C to 25 °C (36 °F to 77 °F).

Upon receipt, store refrigerated at 2 °C to 8 °C (36 °F to 46 °F).

Syringes should be stored in the refrigerator horizontally to minimize the resuspension time.

Do not freeze. Discard if the vaccine has been frozen.

Prevnar 20 should be administered as soon as possible after being removed from refrigeration.

Prevnar 20 can be administered provided total (cumulative multiple excursions) time out of refrigeration (at temperatures between 8 °C and 25 °C) does not exceed 96 hours. Cumulative multiple excursions between

0 °C and 2 °C are also permitted as long as the total time between 0 °C and 2 °C does not exceed 72 hours. These are not, however, recommendations for storage.


The tip cap and plunger stopper of the pre-filled syringe are not made with natural rubber latex.

## 17 PATIENT COUNSELING INFORMATION

Prior to administration of this vaccine, inform the individual of the following:

- The potential benefits and risks of immunization with Prevnar 20 [see *Warnings and Precautions (5)*, *Adverse Reactions (6)*].
- Any suspected adverse reactions should be reported to their healthcare professional.

This product's labeling may have been updated. For the most recent prescribing information, please visit [www.pfizer.com](http://www.pfizer.com).

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