Janssen COVID-19 Vaccine
Janssen Pharmaceutical Companies of Johnson & Johnson

Advisory Committee on Immunization Practices
April 23, 2021

Mathai Mammen, MD, PhD
Global Head, Research and Development
Janssen
Important and Unique Benefits of Janssen COVID-19 Vaccine Outweigh Risks in Global Effort to Fight COVID-19

• 7.9 million in United States have received Janssen COVID-19 vaccine

• Vital and important option for many; Uniquely good option for some
  – Particular benefits for those who face barriers to healthcare services
  – Highly protective efficacy against global variants of concern

• Together with health authorities and using various surveillance systems, identified very rare side effect: thrombosis with thrombocytopenia
  – Increased awareness among general public and healthcare professionals
  – Goal: more identifiable, diagnosable, and treatable
Agenda

• Dynamic landscape of COVID-19 pandemic: emerging variants

• Janssen COVID-19 vaccine
  – Efficacy
  – Key attributes
  – Characterization of thrombosis with thrombocytopenia

• Balancing benefit and risk
The Global Pandemic Continues: Dynamic Landscape of COVID-19

7-Day moving average

<table>
<thead>
<tr>
<th></th>
<th>US Cases</th>
<th>Global</th>
</tr>
</thead>
<tbody>
<tr>
<td>US Cases</td>
<td>466,810</td>
<td>4.5 million</td>
</tr>
<tr>
<td>US Hospitalizations</td>
<td>38,936</td>
<td>Not Reported</td>
</tr>
<tr>
<td>US Deaths</td>
<td>4,786</td>
<td>&gt; 76,000</td>
</tr>
</tbody>
</table>

Data: Source: CDC COVID Tracker

Image: adapted from Johns Hopkins University CSSE COVID-19 Data.
Strong Vaccine Efficacy, Important Option As Variants Emerge in US

Pivotal Study 3001 (N=44,325)
85% vaccine efficacy against severe COVID-19 > Day 28 in the United States
- Protection starts by Day 7, indicating early onset of protection
- 100% protection against COVID-19 related hospitalizations (> Day 28) and deaths
- Consistent vaccine efficacy against severe disease across all regions

Highly protective against global variants of concern
- Equally high protection in South Africa (n > 6,500) where B.1.351 (> 95%) is highly prevalent and in Brazil (n > 4,912) where P.2 lineage (69%) is highly prevalent

Ongoing South Africa study supports strong effectiveness in presence of B.1.351
- Open-label healthcare worker study (N=288,368 vaccinated)
  - Primarily women (76%), mostly people under 50 years old (75%)
  - 4 COVID-19-related deaths (0.001%) (D4, 7, 7, 20) and no deaths post-day 28
  - Of 17 (0.006%) COVID-19 breakthrough cases, 3 occurred after Day 28 (D31, 31, 34)
B.1.351, Which Includes 484 Mutation, Became Dominant Variant in South Africa in Matter of Weeks

- B.1.351 became nearly only variant circulating in South Africa 8 weeks after first appearance
- Now found in 36 of 50 US states / territories and across Europe
- As with B.1.351, other variants containing the key mutation of position E484K emerging in US
Single-Dose Vaccine Plays Essential, Unique Role in Urgent Effort to Contain Virus

| 1-Dose Vaccine | Only authorized COVID-19 vaccine single-dose regimen  
<table>
<thead>
<tr>
<th></th>
<th>Critical option for rural and transient populations</th>
</tr>
</thead>
</table>
| Early Onset,   | Vaccine efficacy against severe disease seen by Day 7 in pivotal trial  
| Durable Response | Durable immune response based on platform, early COVID-19 data |
| SimpleShipping, Storage | Compatible with all existing distribution channels  
|                         | Stored at normal refrigerator temperatures  
|                         | Can reach remote locations |
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Joanne Waldstreicher, MD
Chief Medical Officer
Johnson & Johnson
# Thrombosis with Thrombocytopenia: Post-Authorization Cases Reported after Janssen Vaccine

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Incidence per 1,000,000,000 people</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very rare</td>
<td>100</td>
</tr>
<tr>
<td>Rare</td>
<td>1,000</td>
</tr>
<tr>
<td>Uncommon</td>
<td>10,000</td>
</tr>
<tr>
<td>Common</td>
<td>100,000</td>
</tr>
<tr>
<td>Very Common</td>
<td></td>
</tr>
</tbody>
</table>

**Reported Thrombosis with Thrombocytopenia**

- 15 cases/7.98M people vaccinated
- 1.9 cases/million people

1. Cases, # people vaccinated: CDC (April 22)
Thrombosis with Thrombocytopenia: Post-Authorization Cases Reported after Janssen Vaccine and Background

**Incidence proportion (cases/million people)**

- **Very rare**: 100/1,000,000
- **Rare**: 1,000/1,000,000
- **Uncommon**: 10,000/1,000,000
- **Common**: 100,000/1,000,000
- **Very Common**: 100,000,000/1,000,000

**Background CVST with Thrombocytopenia**

- 0.1/million people

**Reported Thrombosis with Thrombocytopenia**

- 15 cases/7.98M people vaccinated
- 1.9 cases/million people

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1. Cases, # people vaccinated: CDC (April 22)
2. Incidence based on CVST + Thrombocytopenia in 2018 from 5 observational sources (n=63 million persons)
Thrombosis with Thrombocytopenia: Post-Authorization Cases Reported after Janssen Vaccine and Other Adverse Events

- **Heparin-induced thrombocytopenia**
  - 1,000 - 50,000

- **Intussusception in rotavirus vaccine**
  - 16-69

- **Immune thrombocytopenia in MMR vaccine**
  - 26

- **GBS in H1N1 influenza vaccine**
  - 3.4

- **Anaphylaxis in any non-COVID vaccine**
  - 1.2

**Incidence proportion (cases/million people)**

- **Very rare**: 100/1,000,000
- **Rare**: 1,000/1,000,000
- **Uncommon**: 10,000/1,000,000
- **Common**: 100,000/1,000,000
- **Very Common**: 100,000/1,000,000

**Reported Thrombosis with Thrombocytopenia**

- 15 cases/7.98M people vaccinated
- 1.9 cases/million people

**References**

1. Cases, # people vaccinated: CDC (April 22)
3. Salmon. et al. Lancet. 2013 (IR = IRR*baseline risk = 2.5*1.2/100,000py)
5. Rha, B. et al. 2014. DOI: 10.1586/14760584.2014.942223
Thrombosis with Thrombocytopenia: Post- Authorization Cases Reported after Janssen Vaccine in Women Age < 50 and Background

**Background CVST with Thrombocytopenia**
0.1/million people

**Reporting proportion (cases/million people)**

<table>
<thead>
<tr>
<th>Very rare</th>
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<th>Uncommon</th>
<th>Common</th>
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<td>1,000/1,000,000</td>
<td>10,000/1,000,000</td>
<td>100,000/1,000,000</td>
<td></td>
</tr>
</tbody>
</table>

**Reported Thrombosis with Thrombocytopenia**
13 cases /1.9M people vaccinated
7.0 cases/million people

1. Cases, # people vaccinated: CDC (April 22)
2. Background rate in 1JAN2018 from 5 US observational sources (n=63 million persons), * 28/365d (time-at-risk)
Known and Labeled Risks For Combination Oral Contraceptives in Women

<table>
<thead>
<tr>
<th>Risk</th>
<th>Incidence rate (cases/million person-years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ischemic Stroke</td>
<td>99 - 162</td>
</tr>
<tr>
<td>Myocardial Infarction</td>
<td>37 - 58</td>
</tr>
<tr>
<td>Cerebral Venous Sinus Thrombosis</td>
<td>30³</td>
</tr>
<tr>
<td>Thrombotic Stroke</td>
<td>151 - 156¹</td>
</tr>
<tr>
<td>Venous thromboembolic events</td>
<td>300-900¼</td>
</tr>
</tbody>
</table>

All data from published literature (other than venous thromboembolic events: source is product label)

1. Lidegaard, O. et al. NEJM. 2012
3. Azoomegar. et al. Frontiers in Neurology. 2015 (IR=background rate * OR = 0.4/100,000 * 7.59)
Vaccinating 1M adults 18 years and older in the US would be expected to result in:

### Key Benefits

- **COVID-19 related deaths**
  - Favorable: 2,094
  - Unfavorable: # fewer cases per 1,000,000 individuals

- **COVID-19 related hospitalization**
  - Favorable: 6,037
  - Unfavorable: # additional cases per 1,000,000 individuals

### Key Risks

- **Thrombosis with thrombocytopenia**
  - Favorable: 1.9
  - Unfavorable: # additional cases per 1,000,000 individuals

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a. CDC COVID-19 mortality rate as of Apr 14, 2021, 2018 US census population, COV3001 interim analysis assuming 100% efficacy on death for 1-year post-vaccination

b. CDC COVID-19 hospitalization rate from Mar 7, 2020 – Mar 6, 2021, COV3001 interim analysis assuming 100% efficacy on hospitalization for 1-year post-vaccination

c. Observed: Reporting proportion; Background: Assumed 0 cases/million
Favorable Benefit-Risk Assessment in Women Age < 50

Vaccinating 1M women age < 50 in the US would be expected to result in:

### Key Benefits

- **COVID-19 related deaths**
  - Favorable: 116
  - Unfavorable: 2,638
  - # fewer cases per 1,000,000 individuals:
    - Favorable: 116
    - Unfavorable: 2,638

- **COVID-19 related hospitalization**
  - # additional cases per 1,000,000 individuals:
    - Favorable: 7.0
    - Unfavorable: 2,638

### Key Risks

- **Thrombosis with thrombocytopenia**
  - # additional cases per 1,000,000 individuals:
    - Favorable: 7.0
    - Unfavorable: 2,638

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**Notes:**

a. CDC COVID-19 mortality rate as of Apr 14, 2021, 2018 US census population, COV3001 interim analysis assuming 100% efficacy on death for 1-year post-vaccination

b. CDC COVID-19 hospitalization rate from Mar 7, 2020 – Mar 6, 2021, COV3001 interim analysis assuming 100% efficacy on hospitalization for 1-year post-vaccination

c. Observed: Reporting proportion; Background: Assumed 0 cases/million
Janssen Supports Public Awareness, and Guidance for Medical Professionals of this Very Rare Event Following Vaccination

• Active follow up to identify and investigate cases, understand underlying pathophysiology

• Designed observational study protocols using multiple databases

• Support guidance from CDC and professional societies that outline education, diagnosis and treatment

• Implementing HCP and consumer support initiatives; professional initiatives
  – Vaccine fact sheets on Janssen healthcare and consumer websites
  – 24-hour global hotline

• Agree with FDA on warning in label and alerting vaccinees with communications materials
FDA-agreed Warning and Precaution Regarding Thrombosis with Thrombocytopenia

5.2 Thrombosis with Thrombocytopenia

Reports of adverse events following use of the Janssen COVID-19 Vaccine under emergency use authorization suggest an increased risk of thrombosis involving the cerebral venous sinuses and other sites (including but not limited to the large blood vessels of the abdomen and the veins of the lower extremities) combined with thrombocytopenia and with onset of symptoms approximately one to two weeks after vaccination [see Overall Safety Summary (6.2)]. Most cases of thrombosis with thrombocytopenia reported following the Janssen COVID-19 Vaccine have occurred in females ages 18 through 49 years; some have been fatal. Specific risk factors for thrombosis with thrombocytopenia following the Janssen COVID-19 Vaccine and the level of potential excess risk due to vaccination are under investigation. Based on currently available evidence, a causal relationship between thrombosis with thrombocytopenia and the Janssen COVID-19 Vaccine is plausible.
FDA-agreed Warning and Precaution Regarding Thrombosis with Thrombocytopenia

5.2 Continued

Healthcare professionals should be alert to the signs and symptoms of thrombosis with thrombocytopenia in individuals who receive the Janssen COVID-19 Vaccine. The clinical course shares features with autoimmune heparin-induced thrombocytopenia. In individuals with suspected thrombosis with thrombocytopenia following the Janssen COVID-19 Vaccine, the use of heparin may be harmful and alternative treatments may be needed. Consultation with hematology specialists is strongly recommended. The American Society of Hematology has published considerations relevant to the diagnosis and treatment of thrombosis with thrombocytopenia following the Janssen COVID-19 Vaccine (https://www.hematology.org/covid-19/vaccine-induced-immune-thrombotic-thrombocytopenia).

Recipients of Janssen COVID-19 Vaccine should be instructed to seek immediate medical attention if they develop shortness of breath, chest pain, leg swelling, persistent abdominal pain, neurological symptoms (including severe or persistent headaches or blurred vision), or petechiae beyond the site of vaccination.
Benefits of an Effective, Single-Dose, Easy-to-Use Janssen COVID-19 Vaccine Continue to Outweigh Risks

• Continue to face deadly pandemic, variants making containment more challenging globally
  – Janssen COVID-19 vaccine critically important to help halt spread of infection

• Janssen vaccine offers early and durable efficacy, protection against variants, and simplicity
  – Provides access to certain populations that typically face barriers to healthcare services

• Concerns that a restriction would leave significant proportion of the US unvaccinated
  – Puts reaching herd immunity at risk

• Janssen committed to understanding and communicating all risks, including very rare events of thrombosis with thrombocytopenia
  – Supports awareness, education and labeling; making this event more identifiable, diagnosable and treatable with improved chances for successful outcomes

• Janssen COVID-19 vaccine central in effort to end pandemic
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