New Hampshire Coronavirus Disease 2019 Weekly Call for Healthcare Providers and Public Health Partners

February 25, 2021

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Thursday noon-time partner calls will focus on science, medical, and vaccine updates geared towards our healthcare partners
Agenda

• Epidemiology Update

• **FDA data summary**: Janssen Biotech COVID-19 phase 3 clinical trial


• Questions & Answers (Q&A)
- More than 28.3 million cumulative cases in the U.S. (25% of all global infections)
- More than 506,000 deaths in the U.S. from COVID-19 (20% of all global deaths)
Number of New COVID-19 Cases per Day in NH

https://www.nh.gov/covid19/dashboard/overview.htm#dash
% of Tests (Antigen and PCR) Positive for COVID-19 (7-Day Average)

% of Specimens Positive

Date Laboratory Test Completed

Mar 1, 20    May 1, 20    Jul 1, 20    Sep 1, 20    Nov 1, 20    Jan 1, 21    Mar 1, 21

11.8%        4.2%
Number of People Hospitalized with COVID-19 Each Day in NH (Hospital Census)
Number of COVID-19 Deaths in NH by Report Date

In the last 7 days:
- 13 people have died from COVID-19
- 9 (69%) are NOT associated with a LTCF
- 4 (31%) associated with a LTCF
# Variants of Concern (Current as of 2/23/21)

<table>
<thead>
<tr>
<th>Variant</th>
<th>Reported Cases in US</th>
<th>Number of States Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>B.1.1.7</td>
<td>1881</td>
<td>45</td>
</tr>
<tr>
<td>B.1.351</td>
<td>46</td>
<td>14</td>
</tr>
<tr>
<td>P.1</td>
<td>5</td>
<td>4</td>
</tr>
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</table>

Variant B.1.1.7

Variant B.1.351

Janssen Biotech COVID-19 Vaccine
(A Pharmaceutical Company of Johnson & Johnson)
## Selected COVID-19 Vaccines

<table>
<thead>
<tr>
<th>Platform</th>
<th>Developer</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nucleic Acid (mRNA)</td>
<td>moderna, BIONTECH, Pfizer</td>
<td>94% efficacy → EUA</td>
</tr>
<tr>
<td>Adenovirus Vector</td>
<td>Janssen, AstraZeneca</td>
<td>Phase 3 results → likely Feb. 2021</td>
</tr>
<tr>
<td>Recombinant Protein and Adjuvant</td>
<td>gsk, SANOFI, NOVAVAX</td>
<td>Phase 2 starts → Feb. 2021</td>
</tr>
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</table>
Janssen Biotech Ad26.COV2.S Vaccine

- Adenovirus type 26 (Ad26) vector: recombinant, replication-incompetent adenovirus vector carrying genetic instructions for our cells to produce the SARS-CoV-2 spike protein
- Same vaccine platform used in the Ebola vaccine and other investigational vaccines against Zika, HIV, malaria, RSV, HPV
- Supplied as a refrigerated suspension in multi-dose vials (5 doses/vial)
- Administered as a single intramuscular 0.5 mL injection
- Feb 4th: Request FDA Emergency Use Authorization (EUA)
- Feb 24th: [FDA release of Phase 3 clinical trial data](https://www.nymag.com/interactive/2020/science/coronavirus-vaccine-tracker.html) (~40,000 participants)
- Feb 26th: FDA’s Vaccines and Related Biological Products Advisory Committee (VRBPAC) scheduled to meet to discuss EUA
- FDA could grant EUA possibly as soon as Saturday, Feb 27th
- ACIP scheduled to meet Sunday/Monday, Feb 28th – Mar 1st
Vaccines and Related Biological Products Advisory Committee Meeting
February 26, 2021

FDA Briefing Document

Sponsor:
Janssen Biotech, Inc.
Components in the Janssen Biotech Vaccine

- Replication-incompetent adenovirus vector carry the genetic instructions for our cells to make the SARS-CoV-2 spike protein
- Citric acid monohydrate
- Trisodium citrate dihydrate
- Ethanol
- 2-hydroxypropyl-β-cyclodextrin (HBCD)
- Polysorbate 80
- Sodium chloride
- Sodium hydroxide
- Hydrochloric acid
Phase 3 Clinical Trial Characteristics

- Studied in adults 18 years of age and older
- Studied as a single dose IM infection (also being studied in a parallel phase 3 study as a 2-dose series)
- Phase 3 clinical trials included ~40,000 participants
  - 47% of participants from the U.S.
  - 17% from Brazil
  - 13% from South Africa
  - 23% from 5 different countries in Latin America (Chile, Argentina, Colombia, Peru, Mexico)
Primary Endpoint and Pre-specified Criteria

• Co-primary endpoints: Efficacy of a single dose of vaccine to prevent confirmed moderate to severe/critical COVID-19 occurring (1) at least 14 days after vaccination, and (2) at least 28 days after vaccination in study participants without evidence of prior SARS-CoV-2 infection at baseline (i.e., seronegative at time of vaccination)

• Other pre-specified study requirements:
  – At least 2 months of follow-up after vaccination in 50% of participants
  – At least 42 moderate to severe/critical cases of COVID-19 with onset at least 28 days after vaccination
  – At least 6 cases of COVID-19 among participants 60 years of age or older
  – At least 5 severe/critical cases of COVID-19 in the placebo group
Secondary Endpoints

• Severe/critical COVID-19

• COVID-19 requiring medical intervention (i.e. hospitalization)

• COVID-19 related death

• Any symptomatic COVID-19

• Asymptomatic COVID-19 (inferred through evaluating seroconversion)
### Findings: Vaccine Efficacy

<table>
<thead>
<tr>
<th>Primary Endpoint</th>
<th>Vaccine Efficacy</th>
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<tbody>
<tr>
<td>Lab-confirmed moderate to severe/critical COVID-19</td>
<td>66.9% (onset after 14 days) 66.1% (onset after 28 days)</td>
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<table>
<thead>
<tr>
<th>Secondary Endpoints</th>
<th>Vaccine Efficacy</th>
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<tbody>
<tr>
<td>Lab-confirmed symptomatic COVID-19 of any severity (only 4 additional confirmed “mild” cases: 1 in vaccine group, 3 in placebo group)</td>
<td>66.9% (onset after 14 days) 66.5% (onset after 28 days)</td>
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<tr>
<td>Lab-confirmed severe/critical COVID-19</td>
<td>76.7% (onset after 14 days) 85.4% (onset after 28 days)</td>
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<tr>
<td>COVID-19 related hospitalizations*</td>
<td>93.1% (starting after 14 days) 100% (starting after 28 days)</td>
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<tr>
<td>COVID-19 related deaths (vaccine vs. placebo)</td>
<td>0 deaths vs. 7 deaths</td>
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* Vaccine efficacy based on small numbers; 2 people in the vaccine group and 29 people in the placebo group required hospitalization for COVID-19 starting 14 days after vaccination; 0 people in the vaccine group and 6 people in the placebo group required hospitalization for COVID-19 starting 28 days after vaccination.

https://www.fda.gov/media/146217/download
Figure 1. Cumulative Incidence Curve of Centrally Confirmed Moderate to Severe/Critical COVID-19 Cases With Onset at Least 1 Day After Vaccination, Full Analysis Set

Cumulative incidence (%) vs Time to first occurrence (in Days since vaccination)

- Placebo
- Janssen Vaccine

https://www.fda.gov/media/146217/download
## Findings: Subgroup Analysis

<table>
<thead>
<tr>
<th>Subgroup Analyses</th>
<th>Vaccine Efficacy</th>
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<tbody>
<tr>
<td>18-59 years of age</td>
<td>63.7% (after 14 days)</td>
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<tr>
<td></td>
<td>66.1% (after 28 days)</td>
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<td></td>
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<tr>
<td>60+ years of age</td>
<td>76.3% (after 14 days)</td>
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<tr>
<td></td>
<td>66.2% (after 28 days)</td>
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<tr>
<td>60+ years of age with comorbidity</td>
<td>64.9% (after 14 days)</td>
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<tr>
<td></td>
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<tr>
<td></td>
<td>42.3% (after 28 days)**</td>
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** 95% CI: -13.1% to 71.6%; observed trend of increasing VE with narrower confidence intervals as numbers of cases included in the analysis increased, indicating imprecise vaccine efficacy estimates related to small numbers.
## Findings: Subgroup Analysis

<table>
<thead>
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<th>Analysis by Geography</th>
<th>Vaccine Efficacy</th>
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<tbody>
<tr>
<td><strong>United States</strong></td>
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<tr>
<td>Lab-confirmed moderate to severe/critical COVID-19</td>
<td>74.4% (onset after 14 days)</td>
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<td></td>
<td>72.0% (onset after 28 days)</td>
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<tr>
<td>Lab-confirmed severe/critical COVID-19</td>
<td>78.0% (onset after 14 days)</td>
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<tr>
<td></td>
<td>85.9% (onset after 28 days)</td>
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<tr>
<td><strong>South Africa (94.5% of specimens sequenced were B.1.351)</strong></td>
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<tr>
<td>Lab-confirmed moderate to severe/critical COVID-19</td>
<td>52.0% (onset after 14 days)</td>
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<tr>
<td></td>
<td>64.0% (onset after 28 days)</td>
</tr>
<tr>
<td>Lab-confirmed severe/critical COVID-19</td>
<td>73.1% (onset after 14 days)</td>
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<tr>
<td></td>
<td>81.7% (onset after 28 days)</td>
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<tr>
<td><strong>Brazil (69.4% were P.2 lineage, no P.1 variant identified)</strong></td>
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</tr>
<tr>
<td>Lab-confirmed moderate to severe/critical COVID-19</td>
<td>66.2% (onset after 14 days)</td>
</tr>
<tr>
<td></td>
<td>68.1% (onset after 28 days)</td>
</tr>
<tr>
<td>Lab-confirmed severe/critical COVID-19</td>
<td>81.9% (onset after 14 days)</td>
</tr>
<tr>
<td></td>
<td>87.6% (onset after 28 days)</td>
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</table>
Assessing Asymptomatic Infection

- Asymptomatic infection: defined as a person without signs/symptoms of COVID-19 **AND** who tests positive by RT-PCR or develops a positive serology (non-spike antibody testing occurred Day 1, Day 29, and Day 71)

- Asymptomatic infection endpoints being studied:
  - Vaccine efficacy against all SARS-CoV-2 infection (including asymptomatic infection) will be analyzed when 15,000 participants with Day 71 serology are available
  - Vaccine efficacy against “asymptomatic or undetected infection” with onset 28+ days post-vaccination will be analyzed when all participants have at least 6 months of follow-up

- Preliminary analysis of Day 71 serology results from 2,650 participants: 10 people in vaccine group seroconverted without previous symptoms vs. 37 in placebo group (estimated vaccine efficacy of 74%)
  - FDA: “There is uncertainty about the interpretation of these data and definitive conclusions cannot be drawn at this time”
  - The role of vaccine in preventing asymptomatic transmission is still unclear
Common Vaccine Side Effects

- 50% of vaccine recipients reported any local side effects
- 55% of vaccine recipients reported any systemic side effects

Most common local side effects:
- Pain (48.6%),
- Redness (7.3%)
- Swelling (5.3%)

Most common systemic side effects:
- Headache (38.9%)
- Fatigue (38.2%)
- Muscle pain (33.2%)
- Nausea (14.2%)
- Fever (9.0%)

https://www.fda.gov/media/146217/download
Adverse Events Being Monitored

- Thromboembolic events: 15 events in the vaccine group, 10 events in the placebo group
- Tinnitus (ringing in the ears): 6 reports in vaccine group, 0 reports in the placebo group
- Numbers of thromboembolic events and tinnitus are very small, and it is unclear if the vaccine contributed/caused – will be monitored with vaccine rollout
- No differences in Bell’s Palsy between groups (2 cases in vaccine group, 2 cases in the placebo group)
- No reports of anaphylaxis, but a higher number of “angioedema” events in vaccine vs. placebo group (44 vs. 28), and a greater number of urticaria events in vaccine vs. placebo group within 7 days of vaccination (5 vs. 1)
MMWR Article: First Month of COVID-19 Vaccine Safety Monitoring
Reporting vaccine adverse events

• Providers are required by the FDA to report the following adverse events that occur following COVID-19 vaccination to VAERS:
  – Vaccine administration errors
  – Serious adverse events
  – Cases of Multisystem Inflammatory Syndrome (MIS)
  – Cases of COVID-19 that result in hospitalization or death

• Reporting is required even if the vaccine is not directly connected or causal

• Reporting is also encouraged for other clinical significant adverse events

• V-safe: voluntary smartphone-based tool that uses text messages and web surveys to perform check-ins after vaccination

https://www.cdc.gov/vaccines/covid-19/info-by-product/clinical-considerations.html#Reporting-adverse-events

• Descriptive analysis of safety data from the first month of vaccination

• 13,794,904 vaccine doses were administered during time frame
  – Pfizer-BioNTech vaccine: includes 1st and 2nd doses
  – Moderna vaccine: includes only 1st dose

• Evaluated VAERS and v-safe data
VAERS: Serious adverse events and deaths

• 6,994 reports of COVID-19 associated adverse events:
  – 6,354 (91%) were classified as non-serious
  – 640 (9%) were classified as serious, including 113 deaths (two-thirds of deaths occurred among LTCF residents)

• Investigations into cause of deaths (death certificates, autopsy, etc.) were consistent with background all-cause mortality – no unexpected patterns identified that suggest a causal relationship with vaccination

• 78 (65%) reports of death were in LTCF residents after vaccination: about one-half were in residents on hospice or who had a DNR
  – CDC estimates that among the 1 million LTCF residents vaccinated in the first month, ~7,000 coincidental, temporally associated deaths from all causes would be expected – deaths in LTCF residents are consistent with expected all-cause mortality
VAERS: Anaphylaxis

- 62 reports of anaphylaxis confirmed
  - 46 (74%) after receipt of Pfizer-BioNTech vaccine
  - 16 (26%) after receipt of Moderna vaccine

- Rate of anaphylaxis after receipt of COVID-19 vaccine: **4.5 cases per million doses administered**
  - Inactivated influenza vaccine: 1.4 cases per million doses
  - Pneumococcal polysaccharide vaccine: 2.5 cases per million doses
  - Herpes zoster vaccine: 9.6 cases per million doses

- Occurrence of anaphylaxis after receipt of COVID-19 vaccines is within the range reported with other vaccines
V-Safe: Common Vaccine Side Effects

Findings are similar to patterns seen in vaccine clinical trials
• Higher frequency of side effects after the second dose
• Side effects should not dissuade people from the second dose
  – Symptoms usually occur within 1-2 days after vaccination and resolve within 1-3 days

https://www.cdc.gov/mmwr/volumes/70/wr/pdfs/mm7008e3-H.pdf
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