COVID-19 VACCINE SUPPLY CHAIN: HOW WE WILL VACCINATE THE GLOBE

The COVID-19 pandemic has challenged the global vaccine supply chain in an unprecedented way. As billions of people need vaccines around the world, the demand for raw materials, manufacturing capabilities, and distribution capacity has skyrocketed. To ensure people get safe and effective vaccines as quickly as possible, biotechnology companies have leveraged global partnerships and innovative collaborations to reach patients all around the world. It is critically important to support the ability of innovators to scale up manufacturing. Vaccine makers are set to produce over 12 billion doses — that’s enough supply to vaccinate all high-risk patients across the globe. And there’s even more to come as additional new vaccines are expected to be approved for use.

Manufacturing Partnerships and Doses Committed

Across six of the leading COVID-19 vaccine makers, over 300 total partnerships have boosted manufacturing of vaccines as of August 2021. These innovative collaborations will drive the production of billions of vaccine doses in many countries around the world.

<table>
<thead>
<tr>
<th>Vaccine Maker</th>
<th>Partnerships</th>
<th>Estimated Doses 2021-2022</th>
<th>Geographic Partnerships/Manufacturing Sites</th>
</tr>
</thead>
<tbody>
<tr>
<td>AstraZeneca</td>
<td>6+</td>
<td>3 billion</td>
<td><img src="attachment" alt="Flag Map" /></td>
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<tr>
<td>Johnson+Johnson</td>
<td>10+</td>
<td>1.5 billion</td>
<td><img src="attachment" alt="Flag Map" /></td>
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<tr>
<td>moderna</td>
<td>10+</td>
<td>4 billion</td>
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</tr>
<tr>
<td>Novavax</td>
<td>20+</td>
<td>1.1 billion</td>
<td><img src="attachment" alt="Flag Map" /></td>
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<tr>
<td>Pfizer</td>
<td>5+</td>
<td>7 billion</td>
<td><img src="attachment" alt="Flag Map" /></td>
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</tbody>
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Source: Press Release Data, August 2021

Vaccine Production Across the Globe

Many countries around the world are helping produce COVID-19 vaccines. As of August 2021, every country highlighted is involved in some part of the manufacturing process.
According to August 2021 forecasts, vaccine production could generate over 12 billion doses if the ability to scale up manufacturing is not jeopardized. That is enough supply to vaccinate all high-risk patients across the globe.

**Billions of Vaccine Doses Expected**

Many vaccine makers have also committed hundreds of millions of vaccines in 2021-2022 to COVAX, a global program focused on delivering COVID treatments to patients in poor and under-developed countries. As of August 2021, COVAX has shipped over 200 million doses to 138 participating countries. In addition to bilateral deals, vaccine manufacturers have committed doses to low- and middle-income countries through regional deals.

**Doses Committed to COVAX and Other Regional Organizations (as of August 2021)**

- **Johnson & Johnson** – 500 million doses to COVAX; 400 million doses to the African Union
- **AstraZeneca** – 171 million doses to COVAX
- **Moderna** – 534 million doses to COVAX; 34 million doses to UNICEF and the Pan American Health Organization
- **Pfizer/BioNTech** – 1.1 billion doses to COVAX
- **Sinovac** – 1 billion doses to COVAX
- **Sinopharm** – 2 billion doses committed to low and middle income countries, including 500 million doses to the US government for donation to COVAX AMC 92 & African Union and 40 million directly to COVAX
- **Bharat**
- **CanSino**
- **J & J**
- **Moderna**
- **Novavax**
- **TianHe**
- **Sputnik V

Source: Bio.org, August 6, 2021

Source: Press Release Data, August 2021