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Opinion

COVID-19 Vaccine Diplomacy and Equitable Access to Vaccines Amid Ongoing Pandemic

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Received for publication April 4, 2021; accepted April 14, 2021 (ARCMED_D_21_00419).

The wealthy countries have already secured 60% of the total coronavirus disease (COVID-19) vaccine supplies for their citizens. Some of these countries have pre-ordered vaccine doses sufficient enough to vaccinate their population multiple times. India has recently initiated a diplomatic mission named “Vaccine Maitri” to provide COVID-19 vaccine doses to needy low-income countries. The ability of the country to manufacture cost-effective vaccines along with the ability to export large vaccine consignments worldwide will help to meet the global COVID-19 vaccine requirements. Furthermore, global vaccination coverage can only be achieved by ensuring equitable access to COVID-19 vaccines. © 2021 Instituto Mexicano del Seguro Social (IMSS). Published by Elsevier Inc. All rights reserved.

Keywords: COVID-19, SARS-CoV-2, Vaccine diplomacy, Vaccination coverage, Vaccine.

Coronavirus disease (COVID-19) vaccines that have exhibited satisfactory immunogenicity, safety profile, and efficacy are being used for mass vaccination campaigns in several countries worldwide. The mission to vaccinate every citizen is going in full swing to tackle the ongoing pandemic. Following the widespread impact of the COVID-19 pandemic globally, wealthy countries accounting for 16% of the world population pre-ordered billions of vaccine doses. These wealthy countries have already secured 60% of the total vaccine supplies for their citizens (1,2). Among the “vaccine nationalists,” Canada tops the list, pre-ordering vaccine doses sufficient to vaccinate nine times its population, while the United Kingdom has enough doses to vaccinate six times its population. Other countries such as the United States, Australia, Chile, and members of the European Union, pre-ordered vaccine supplies beyond their domestic requirements (1). According to the most recent data, Israel has vaccinated 60.7% of its population (at least one dose) as of April 2, 2021, while the United Kingdom has managed to vaccinate 46.1%, followed by Chile (36.3%), Bahrain (30.7%), and the United States (30.4%)

(Figure 1) (3). Although India initiated its country-wide vaccination program in early 2021 to counter the rising number of COVID-19 cases, only 4.6% of its population (65.74 Million) has received at least one vaccine dose as of April 2, 2021 (3,4).

India contributes 60% of the global vaccine supply and acts as the major vaccine manufacturing hub. The cost-effective vaccine development and manufacturing capacity, along with the ability to export large vaccine consignments worldwide, will enable the country to meet the global COVID-19 vaccine requirements. Furthermore, the ability to manufacture low-cost COVID-19 vaccines will be beneficial to the low-income countries that cannot pay for expensive vaccines. This will ensure equitable access to COVID-19 vaccines and can help to achieve global vaccination coverage (4,5).

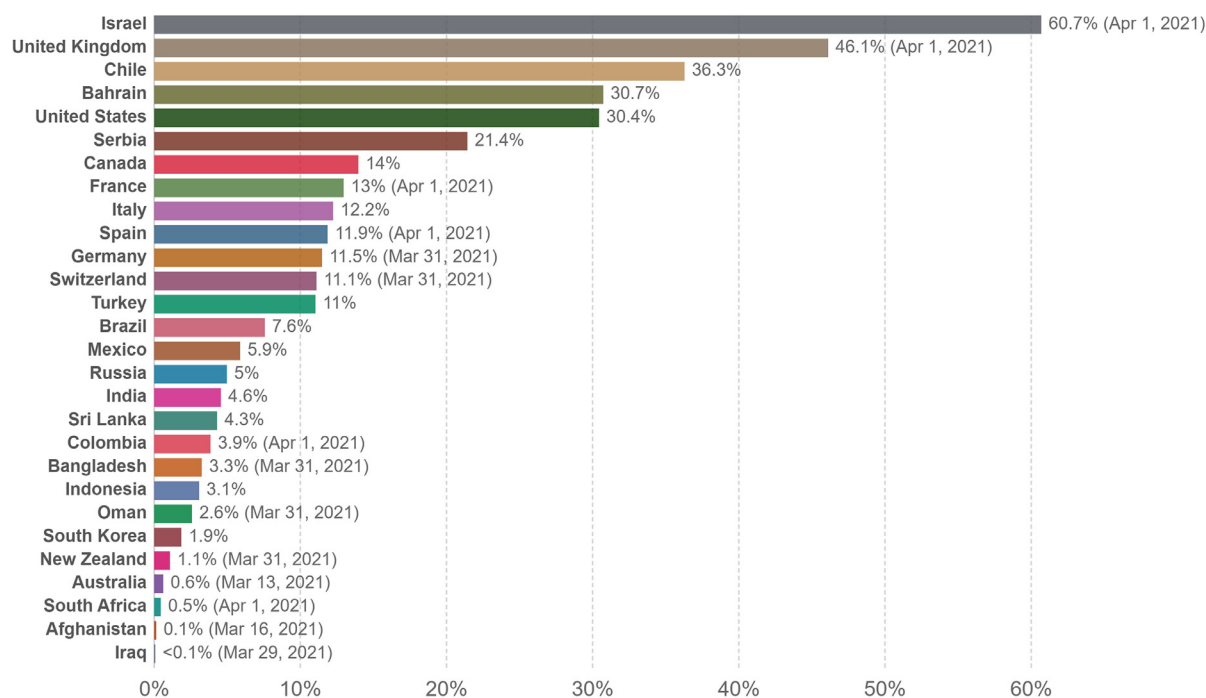
When most of the countries are busy procuring COVID-19 vaccine doses for vaccinating their population, India recently started a diplomatic mission named “Vaccine Maitri” (*Maitri* means friendship in Hindi), an initiative to provide COVID-19 vaccines to the needy low-income countries (4,6). The country has supplied a total of 105.15 lakh doses of COVID-19 vaccine to 44 countries as a grant (Table 1). India is also the leading supplier of COVID-19 vaccine doses to various countries under the COVID-19 Vaccines Global Access (COVAX) program (6,7). COVAX

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Share of people who received at least one dose of COVID-19 vaccine, Apr 2, 2021

Share of the total population that received at least one vaccine dose. This may not equal the share that are fully vaccinated if the vaccine requires two doses.

Our World
in Data



Source: Official data collated by Our World in Data – Last updated 3 April, 09:08 (London time)

OurWorldInData.org/coronavirus • CC BY

Figure 1. Chart illustrating the share of the total population that has received the COVID-19 vaccine (at least one dose).

Table 1. Total doses of vaccines supplied by Government of India as grant through the “Vaccine Maitri” initiative

Country	Quantity (In lakhs)	Country	Quantity (In lakhs)
Bangladesh	33	Niger	0.25
Myanmar	17	Nigeria	1
Nepal	11	Kenya	1
Bhutan	5.5	Rwanda	0.5
Maldives	2	Senegal	0.25
Mauritius	1	Guatemala	2
Seychelles	0.5	Malawi	0.5
Sri Lanka	5	Uganda	1
Bahrain	1	Nicaragua	2
Oman	1	Guyana	0.8
Afghanistan	5	Jamaica	0.5
Barbados	1	Belize	0.25
Dominica	0.7	Botswana	0.3
Dominican Republic	0.3	Mozambique	1
Mongolia	1.5	Eswatini	0.2
Ghana	0.5	Bahamas	0.2
Ivory Coast	0.5	Namibia	0.3
Saint Lucia	0.25	Paraguay	1
Saint Kitts and Nevis	0.2	Fiji	1
Saint Vincent and the Grenadines	0.4	Democratic Republic of the Congo	0.5
Suriname	0.5	Zimbabwe	0.35
Antigua and Barbuda	0.4	UN Peacekeepers	2

Total doses supplied as grant –105.15 lakhs.

is a global initiative coordinated by the World Health Organization (WHO), the Coalition for Epidemic Preparedness Innovations, and Gavi, the Vaccine Alliance, that ensures equitable access to COVID-19 vaccines (7).

The recent proposal made by India and South Africa at the World Trade Organization (WTO) for waiving off specific provisions of the Trade-Related Aspects of Intellectual Property Rights (TRIPS) agreement, especially to temporarily defer the IPR of SARS-CoV-2 vaccines, will ensure equitable access to vaccines. Although the WHO Director-General supported the proposal, the United States, the United Kingdom, Canada, Norway, and the European Union opposed such a move (2,4,8).

The ongoing COVID-19 pandemic continues to affect the lives of millions across the globe. Global health diplomacy (GHD) can constitute a bridge of international cooperation, resource allocation, and mutual strategic trust to counter public health crisis. Efforts have to be taken to strengthen the existing health management systems and infrastructure via focusing on universal health coverage, strengthening multilateral and multidimensional collaboration to mitigate inequality. The diagnostic tools, therapeutics, and vaccines should be made available to all individuals irrespective of nationality and race for achieving sustainable and equitable development. Such a move will serve as a catalyst for future global health initiatives. In this way, the countries that are unable to procure vaccines could save their vulnerable population from the pandemic, thereby contributing to the global fight against COVID-19 (9). Development and large-scale manufacturing of immunogenic, safe, and cost-effective COVID-19 vaccines with high global cooperation, leadership, and health diplomacy along with implementing impactful public policies that can ensure equitable access to all the countries will ensure global vaccine security (7-10). This will certainly help meet the global vaccine requirement and counter the ongoing pandemic and provide avenues for achieving sustainable health-promoting goals for fighting future pandemics.

Funding

The authors received no funding in relation to this article.

Conflicts of Interest

All authors declare that there exist no commercial or financial relationships that could, in any way, lead to a potential conflict of interest.

References

1. Dhar B. India's Vaccine Diplomacy; 2021. Available at https://www.indiachinainstitute.org/2021/03/04/indias_vaccine_diplomacy/ (Accessed March 21, 2021).
2. The Lancet. Access to COVID-19 vaccines: looking beyond COVAX. *Lancet* 2021;397:941. doi:10.1016/S0140-6736(21)00617-6.
3. Our World in Data. What share of the population has received at least one dose of the COVID-19 vaccine? 2021. Available at: <https://ourworldindata.org/covid-vaccinations#what-share-of-the-population-has-received-at-least-one-dose-of-the-covid-19-vaccine> (Accessed March 21, 2021).
4. Sharma J, Varshney SK. India's vaccine diplomacy aids global access to COVID-19 jabs. *Nature India* 2021. doi:10.1038/nindia.2021.31.
5. Chakraborty C, Agoramoorthy G. India's cost-effective COVID-19 vaccine development initiatives. *Vaccine* 2020;38:7883-7884. doi:10.1016/j.vaccine.2020.10.056.
6. Ministry of External Affairs - Government of India. Vaccine Supply 2021. Available at: <https://www.mea.gov.in/vaccine-supply.htm> (Accessed March 21, 2021).
7. Varshney SK, Prasanna NK. Vaccine diplomacy: Exploring the benefits of international collaboration. *Trends Biotechnol* 2021;15:110-114. doi:10.5530/ctbp.2021.1.12.
8. Chattu VK, Pooransingh S, Allahverdipour H. Global health diplomacy at the intersection of trade and health in the COVID-19 era. *Health Promot Perspect* 2021;11:1-4. doi:10.34172/hpp.2021.01.
9. Javed S, Chattu VK. Strengthening the COVID-19 pandemic response, global leadership, and international cooperation through global health diplomacy. *Health Promot Perspect* 2020;10:300-305. doi:10.34172/hpp.2020.48.
10. Lancet Commission on COVID-19 Vaccines and Therapeutics Task Force Members. Operation Warp Speed: implications for global vaccine security. *Lancet Glob Health* 2021 Mar 26 S2214-109X(21)00140-6. doi:10.1016/S2214-109X(21)00140-6.