

Access to Oxford-AstraZeneca, Johnson and Johnson, Moderna and Pfizer-BioNTech COVID-19 vaccines in 17 middle-income countries in 2021



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 **ITPC**
INTERNATIONAL TREATMENT
PREPAREDNESS COALITION

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Author:

Sergiy Kondratyuk

Edited by:

Kajal Bhardwaj

Graphic Design:

Anthea Duce

Contributors:

Kajal Bhardwaj, Gabriela Costa Chaves, Mari Chokheli, Marisabel Colorado, Do Dang Dong, Felipe Fonseca, Loon Gangte, Maria Lorena Di Giano, Evghenii Alexandrovici Goloşceapov, Sergey Golovin, Marwa El Harrar, Anastasiia Homeniuk, Chalerm Sak Kittittrakul, Alma De Leon, Anatoli Leshanok, Cycy Neihsiel, Umesh Sharma Hidangmayum, Irina Statkevich

About

[Make Medicines Affordable](#) (MMA) consortium works to bring down the prices of HIV, TB, Hepatitis C, and COVID-19 medicines by removing intellectual property and other access barriers. The MMA consortium is led by civil society organizations from over 20 countries. They include patients, lawyers, health experts and activists, all choosing, instead, to challenge the IP measures that benefit profit but not people.

The [International Treatment Preparedness Coalition](#) (ITPC) is a global coalition of PLHIV and community activists working to achieve universal access to optimal HIV, HCV and TB treatment of those in need. Formed in 2003 by a group of 125 HIV activists from 65 countries at a meeting in Cape Town, ITPC actively advocates for treatment access in eight regions across the globe. ITPC believes that the fight for treatment remains one of the most significant global social justice issues. ITPC is an issue-based coalition. ITPC actively advocates for treatment access through three strategic focus areas:

- [#MakeMedicinesAffordable](#)
- [#WatchWhatMatters](#)
- [#BuildResilientCommunities](#)



Access to Oxford-AstraZeneca, Johnson and Johnson, Moderna and Pfizer-BioNTech COVID-19 vaccines in 17 middle-income countries in 2021

Global inequity in access to vaccines has remained one of the defining features of the COVID-19 pandemic. International initiatives for access such as COVAX have faltered and attempts by low-and-middle income countries (LMICs) to obtain a comprehensive waiver of intellectual property protections on COVID-19 health technologies at the World Trade Organisation (WTO) have resulted in a weak compromise. Vaccine manufacturers from the United States (US) and Europe have used multiple techniques to limit and control the supply of their vaccines to the developing world. M-RNA vaccine producers Moderna and Pfizer-BioNTech have refused to share the technology and know-how for local production in LMICs. Viral-vector vaccine producers AstraZeneca and Johnson and Johnson (J&J) have entered into restrictive, secret licenses with a limited number of LMIC producers. These vaccine producers along with the US and European governments have cited donations of vaccine doses and not-for-profit pricing as proof of fulfilment of their international obligations.

This report assesses the availability and affordability of these four vaccines in 17 middle income countries (MICs) where the Make Medicines Affordable (MMA) campaign works. For the purposes of this report, the International Treatment Preparedness Coalition (ITPC) gathered information about vaccine supply, donations, pricing and technology transfer issues related to the four vaccines in Argentina, Armenia, Belarus, Brazil, El Salvador, Georgia, Guatemala, Honduras, India, Kazakhstan, Kyrgyzstan, Moldova, Morocco, Russia, Thailand, Ukraine and Vietnam. The report covers the period 1 January 2021 – 19 January 2022.

The report is based on information gathered by national and regional civil society and community-based organizations that are part of the MMA campaign (MMA partners) i.e. Associação Brasileira Interdisciplinar de AIDS (ABIA), Brazil, AIDS Access Foundation (AAF), Thailand, Asia Pacific Network of People Living with HIV/AIDS (APN+), the Delhi Network of Positive People (DNP+), India; Fundación Grupo Efecto Positivo (Fundación GEP), Argentina; International Treatment Preparedness Coalition Latin America and Caribbean (ITPC-LATCA); International Treatment Preparedness Coalition Middle East and North Africa (ITPC-MENA); International Treatment Preparedness Coalition Eastern Europe and Central Asia (ITPC-EECA); Republican Civic Association ‘People plus’, Belarus; Belarusian Civic Association ‘Positive Movement’, Belarus; Chisinau Civil Association “Inițiativa Pozitivă”, Moldova; TBpeople, Georgia; VietNam Network of People Living with HIV/AIDS (VNP+), Vietnam; and CO ‘100% Life’, Ukraine. The information from MMA partners was confirmed and complemented by information from online databases¹ and reports.

Procurement and Supply

Of the 11.4 billion vaccine doses supplied as of January 2022, 2.8 billion or approximately 25% were to the 17 MICs included in this report. The average vaccination rate for these 17 countries was approximately 52%, while in high-income countries (HICs) vaccination rates are considerably higher. For instance, the average vaccination rate for Canada, Germany, Israel, Japan and the US was approximately 69% meaning that these HICs had almost reached WHO’s global 70% vaccination coverage goal for mid-2022 (see Table 1).

In terms of vaccine doses secured and delivered there is even wider disparity between HICs and the rest of the world. According to WHO-IMF data, vaccines doses were secured to cover approximately 114% of the population of the 17 MICs. However, according to the UNICEF dashboard, the doses actually delivered covered approximately 66% of the population.² In sharp contrast, vaccine doses secured for Canada, Germany, Israel, Japan, US were enough to cover 283% of the population and doses actually delivered covered 108% of the population (Table 1).

¹ UNICEF COVID-19 Market Dashboard, World Bank COVID-19 Vaccine Deployment Tracker, IMF-WHO COVID-19 Vaccine Supply Tracker, Duke Global Health Innovation Center, The ACT-Accelerator and Multilateral Leaders Task Force Global COVID-19 Access Tracker (GCAT), Global Commission for Post-Pandemic Policy, VIPER Group COVID19 Vaccine Tracker Team

² As of January 20, 2022. As out of 2.8bn vaccines supplied 0.868bn are unknown supplies, there would be some difference in actual number of courses supplied, as J&J and Cansino are one shot vaccines.

Table 1.

COVID-19 vaccines deliveries to 17 MICs and 5 HICs (Source: IMF-WHO COVID-19 Vaccine Supply Tracker, Our World in Data and UNICEF COVID-19 Market Dashboard, data as of January 2022)

Countries and COVAX status (SFP: self-financing participant; AMC: COVAX AMC-eligible economies; HIC – high income country; UMIC – upper middle income country; L-MIC – lower middle income country)	Population, millions	Secured and/or Expected Vaccine (millions of courses) Source: IMF-WHO	% of courses secured/expected to population Source: IMF-WHO	COVAX, millions of doses Source: UNICEF Dashboard	Total doses delivered, January 17, 2022, millions Source: UNICEF Dashboard	Total courses delivered (taking into account J&J, Cansino one shot vaccines), millions	% of courses delivered to population	% of population vaccinated, 19 January 2022 Source: Our-World-in-Data
Canada	38	177	466%	1.0	92.9	46.6	123%	78%
Germany	84	301	359%		196.9	101.1	121%	72%
Israel	9	21	240%		19.2	9.6	109%	65%
Japan	126	342	271%		259.0	129.5	103%	79%
USA	333	825	248%		670.8	350.3	105%	63%
5 HICs	590	1 667	283%	1.0	1238.7	637.1	108%	69%
Argentina (SFP)	46	68	148%	6.0	99.7	50.3	110%	75%
Armenia (SFP)	3	1	38%	0.4	1.9	0.9	31%	26%
Belarus	9	5	52%	0.0	9.5	4.8	50%	39%
Brazil (SFP)	214	387	181%	13.9	386.2	195.5	91%	69%
Georgia (SFP)	4	3	70%	0.2	3.6	1.8	45%	30%
Guatemala (SFP)	18	13	72%	4.3	18.5	9.3	51%	28%
Kazakhstan	19	13	70%	0.0	19.3	9.7	51%	46%
Moldova (AMC)	4	2	60%	0.8	2.0	1.2	29%	25%
Russian Federation	146	146	100%	0.0	163.1	81.6	56%	47%
Thailand	70	119	170%	0.0	113.0	56.5	81%	68%
10 UMICs	533	757	96%	25.5	816.8	411.4	60%	45%
El Salvador (AMC)	7	8	122%	3.6	11.5	5.8	88%	64%
Honduras (AMC)	10	11	105%	4.7	10.9	5.4	54%	44%
India (AMC)	1 393	1 399	100%	10.0	1691.6	845.8	61%	48%
Kyrgyz Republic (AMC)	7	5	78%	1.3	5.9	2.9	44%	15%
Morocco (AMC)	37	49	131%	4.2	56.3	28.3	76%	62%
Ukraine (AMC)	43	66	152%	8.1	43.5	21.8	50%	33%
Vietnam (AMC)	98	133	136%	49.6	178.6	89.3	91%	70%
7 L-MICs	1 596	1671	118%	81.5	1998.3	999.3	66%	48%
17 MICs	2 129	2 427	114%	107.0	2815.1	1410.7	66%	52%

There is also significant disparity within the 17 MICs in terms of vaccines delivered. For instance, while vaccines delivered to Moldova and Georgia covered 29% and 31% of their populations respectively, coverage rates were 91% for Brazil and Vietnam and up to 110% for Argentina. Thus, some of the 17 MICs were not even on track to meet the WHO's 40% vaccination goal for 2021.³ The vaccines supplies to the 17 MICs also highlight the inadequacy of World Bank income classification that is often used as a basis for prioritization in access programs and to justify exclusions in voluntary licensing deals in the health field. Among the 17 MICs, the 10 Upper-Middle Income countries secured and delivered fewer vaccines (secured for 96% of population, delivered for 60% of population), than the 7 Lower Middle Income countries (secured for 118% of population, delivered for 66%).

Among the 17 countries, those with smaller markets and weaker purchasing power experienced delays in securing supply contracts for the four COVID vaccines as initial supply had been cornered by HICs. As a result, most MICs relied initially on vaccines from China and Russia. Moldova announced an open tender in March 2021 for procurement of vaccines that received no bid proposals. It was only after direct negotiations that they managed to secure 100,000 doses from Sinovac in April 2021.⁴ Similarly, in Ukraine the government was unable to secure an early deal for any of the four Western vaccines and instead concluded a deal at the end of December 2020 with Sinovac for 5 million doses of its vaccines.⁵ In some countries, governments

had to take loans from international lenders to procure vaccines as in the case of Moldova⁶ demonstrating the budgetary vulnerability experienced by poorer countries, whose finances were already under pressure due to the COVID-19 crisis.

For some of the larger MICs among the 17 countries that were able to attract the attention of Western vaccine manufacturers, negotiations on issues of indemnity and liability were particularly thorny and held up agreements for several months. The Bureau of Investigative Journalism that looked into negotiations

by several Latin American countries reported the increasingly difficult demands raised by Pfizer in negotiations with Argentina and Brazil.⁷ These included demands for being indemnified in civil cases filed by people who faced adverse events from vaccination even if these were caused by Pfizer's own negligence or malice. Demands were also made of the governments to purchase international insurance and create a guarantee fund with money deposited in a foreign bank account.



Moldova is quite a small market. We have weaker purchasing power and a limited pharma manufacturing base. Procuring COVID-19 vaccines in 2021 was a disaster for us; the government's first tender didn't receive a single bid even after the tender was drastically reduced from 400,000 doses to 100,000 doses. On top of that we had to use World Bank loans to pay for the vaccines.



Evghenii Alexandrovici Goloșceapov,
Initiativa Pozitiva, Moldova

³ WHO, Strategy to Achieve Global Covid-19 Vaccination by mid-2022 (Scientific brief, 6 October 2021) 4 <https://www.who.int/publications/m/item/strategy-to-achieve-global-covid-19-vaccination-by-mid-2022> (accessed 17.05.2023)

⁴ Source of information: Initiativa Pozitiva, Moldova. See also: The Commission for Extraordinary Situations of the Republic of Moldova, Decision no. 5 of April 21, 2021 https://gov.md/sites/default/files/5_dispozitia_cse_21.04.2021_1.pdf (accessed 17.05.2023)

⁵ Natalia Zinets, Ilya Zhegulev, 'Ukraine pharma group to supply 5 million doses of Sinovac COVID-19 vaccine in first-half', Reuters (Kyiv, 12 January 2021) <https://www.reuters.com/article/us-health-coronavirus-ukraine-vaccine/ukraine-pharma-group-to-supply-5-million-doses-of-sinovac-covid-19-vaccine-in-first-half-idUSKBN29H1QZ> (accessed 17.05.2023)

⁶ Source of information: Initiativa Pozitiva, Moldova. See also: Nicoleta Banila, 'Moldova to get 24.8 mln euro World Bank loan for Covid-19 vaccination', SeeNews (Chisinau, 17 September 2021) <https://seenews.com/news/moldova-to-get-248-mln-euro-world-bank-loan-for-covid-19-vaccination-754351> (accessed 17.05.2023)

The most problematic demand was for the governments to put up sovereign assets as collateral which as the report noted could have included federal bank reserves, embassy buildings or military bases. An Argentinian Official quoted in the report said, “We offered to pay for millions of doses in advance, we accepted this international insurance, but the last request was unusual: Pfizer demanded that the sovereign assets of Argentina also be part of the legal support,” the official said. “It was an extreme demand that I had only heard when the foreign debt had to be negotiated, but both in that case and in this one, we rejected it immediately.” The negotiations between Argentina and Pfizer started in June 2020 and a supply agreement was finally concluded over a year later in July 2021 after Pfizer forced multiple changes in the country’s laws on indemnity.⁸ Indemnity demands made by Pfizer, Moderna and J&J of the Indian government were refused and these vaccines were never procured by the government or made available in the private sector in India.⁹

In terms of deliveries of vaccines by the four companies, from the 2.8 billion doses delivered to the 17 MICs – 1.5 billion doses (55%) were of the Oxford-AstraZeneca, J&J, Moderna or Pfizer-BioNTech vaccines. This figure however includes the 1.05 billion doses delivered by the Serum Institute of India (SII) which is a licensee for the Oxford-AstraZeneca vaccine, most of which were delivered to India; if SII supplies are excluded, deliveries by the four companies constituted only 18% of all doses delivered to the 17 MICs. This, and the fact that the other 45% of doses came from other manufacturers based in MICs like Gamaleya, Sinovac and Sinopharm, underlines the importance of multiple sources of vaccine production and supply and in particular, of local manufacturing.

Table 2.
Supplies of vaccines to 17 MICs by the four companies

(Source: UNICEF COVID-19 Market Dashboard, data as of January 2022)

Company	Bilateral/multilateral agreements, millions	Bilateral donations (not COVAX), millions of doses	Delivered doses through COVAX	Total doses delivered	% of doses delivered by each company
AstraZeneca	191.4	23.7	31.4	246.5	15.9%
Serum Institute of India (Covishield)	1043.2	0.2	10.0	1053.4	68.1%
J&J	1.8	3.0	0.6	5.4	0.4%
Moderna	7.7	14.1	25.7	47.5	3.1%
Pfizer-BioNTech	161.1	2.5	31.6	195.1	12.6%
Total	1405.3	43.4	99.3	1548.0	

⁷ Madlen Davies et al., ‘Held to ransom’: Pfizer demands governments gamble with state assets to secure vaccine deal (The Bureau of Investigative Journalism, 23 February 2021) <https://www.thebureauinvestigates.com/stories/2021-02-23/held-to-ransom-pfizer-demands-governments-gamble-with-state-assets-to-secure-vaccine-deal> (accessed 17.05.2023)

⁸ Maximilian Heath, ‘Argentina signs deal with Pfizer for 20 mln COVID-19 vaccine doses, minister says’, Reuters (Buenos Aires, 27 July 2021) <https://www.reuters.com/world/americas/argentina-signs-deal-with-pfizer-20-mln-covid-19-vaccine-doses-minister-says-2021-07-27/> (accessed 17.05.2023)

⁹ Press Trust of India, ‘Foreign Covid vaccine firms can do business here, but on India’s terms: Min’, Business Standard (New Delhi, 19 February 2022) https://www.business-standard.com/article/economy-policy/foreign-covid-vaccine-firms-can-do-business-here-but-on-india-s-terms-min-122021801344_1.html (accessed 17.05.2023)

Reports from MMA partners also indicate that the delivery of m-RNA vaccines in particular were considerably delayed. It is interesting that the Pfizer-BioNTech vaccine received WHO Emergency Use Listing (EUL) in December 2020 while the AstraZeneca/Covishield vaccines received the WHO EUL in February 2021. Data from UNICEF suggests that, on average, supplies to the 17 MICs of the four vaccines started in March by AstraZeneca, in May by Pfizer-BioNTech and in July by J&J and Moderna. Meanwhile vaccination campaigns (and relevant supplies) using AstraZeneca, Moderna or Pfizer-BioNTech vaccines in the US and EU started on 14 December 2020 and 27 December 2020, respectively. The delays to the 17 MICs can be attributed to Pfizer-BioNTech and Moderna prioritizing the supply of HICs and focusing on increasing their internal manufacturing capacity, instead of widely sharing their technology with existing vaccines manufacturers. The companies were enabled to do so by IP protections like patents and trade secret protection and the reluctance of HIC governments to place global public interest before the business-as-usual approach of big pharma during the COVID-19 pandemic.

Donations

Donations secured for the 17 MICs accounted for 3.1% of all secured/expected vaccine supplies (including procurement). In some countries, bilateral and COVAX donations accounted for up to 40-46% of all vaccines secured/expected such as in Moldova or Guatemala. Countries with smaller populations, lower purchasing power and no local manufacturing relied more heavily on donations. For instance, less than 0.6% of all supplies in India and Brazil were donations compared to 46% in Guatemala, 39.7% in Moldova and 33.1% in Kyrgyzstan. The pattern of donations appeared to follow geo-political and foreign policy considerations and did not correlate to how well countries had managed to secure vaccines. For instance, El Salvador, Honduras and Vietnam secured 27%, 23% and 30% of donations from total secured/expected vaccines respectively, while having secured vaccines courses for more than 100% of their populations. At the same time Belarus and Armenia secured 18% and 17% of donations from total secured/expected vaccines respectively, while having secured vaccines course for only 52% and 38% of their populations respectively. Overall, of the secured donations for the 17 MICs, only 68.7% were actually delivered in 2021 (see Table 3).

Table 3.

Donations of COVID-19 vaccines for the 17 MICs compared to secured total supplies of COVID-19 vaccines (Source: IMF-WHO COVID-19 Vaccine Supply Tracker, UNICEF COVID-19 Market Dashboard, data as of January 2022)

Countries and COVAX status (SFP: self-financing participant; AMC: COVAX AMC-eligible economies)	Population, millions	Secured and/or Expected Vaccines, millions of courses Source: IMF-WHO Tracker	Secured and/or Expected Vaccines courses, % of population Source: IMF-WHO Tracker	Secured donations (including COVAX donations), doses, millions Source: UNICEF Dashboard	Secured donations, millions of courses	% of donations secured from all secured/expected vaccines	Delivered donations, millions of doses Source: UNICEF Dashboard	Delivered donations, millions of courses	% delivered donations from total secured donations
Argentina (SFP)	45.6	67.7	148.4%	6.3	3.1	4.6%	6.3	3.1	100.0%
Armenia (SFP)	3.0	1.1	38.1%	0.4	0.2	17.2%	0.4	0.2	100.0%
Belarus	9.4	4.9	52.0%	1.8	0.9	17.9%	1.8	0.9	100.0%
Brazil (SFP)	214.0	386.6	180.7%	5.2	4.1	1.1%	5.2	4.1	100.0%
El Salvador (AMC)	6.5	7.9	121.9%	4.4	2.2	27.9%	3.4	1.7	77.5%
Georgia (SFP)	4.0	2.8	69.7%	1.4	0.7	25.0%	0.8	0.4	58.0%
Guatemala (SFP)	18.2	13.2	72.4%	12.2	6.1	46.1%	10.2	5.1	83.6%
Honduras (AMC)	10.1	10.6	104.9%	4.7	2.5	23.4%	4.2	2.1	84.9%
India (AMC)	1393.4	1 398.8	100.4%	1.7	0.8	0.1%	0.0		0.0%
Kazakhstan	19.0	13.3	70.0%	0.0	0.0	0.0%	-		
Kyrgyz Republic (AMC)	6.6	5.2	77.9%	3.4	1.7	33.1%	2.8	1.4	82.2%
Moldova (AMC)	4.0	2.4	60.4%	1.6	1.0	39.7%	1.3	0.8	82.4%
Morocco (AMC)	37.3	48.9	130.9%	11.8	6.2	12.6%	1.3	0.8	12.8%
Russian Federation	145.9	145.9	100.0%	0.0	0.0	0.0%	0.0		
Thailand	70.0	118.6	169.6%	7.3	3.6	3.1%	6.8	3.4	93.9%
Ukraine (AMC)	43.5	66.1	152.0%	6.9	3.5	5.2%	6.1	3.0	88.3%
Vietnam (AMC)	98.2	133.4	135.9%	79.8	39.9	29.9%	54.5	27.2	68.2%
Total	2128.7	2 427.4	105.0%	148.3	76.4	3.1%	105.0	52.5	68.7%

Almost all donations to the 17 MICs were provided by governments, with very few exceptions (e.g. Bharat Biotech provided 1.65M doses of its vaccines to India). Strikingly, while the pharmaceutical industry was hardly hit by COVID pandemic, according to UNICEF Dashboard no vaccines were donated to the 17 countries by AstraZeneca, J&J, Moderna or Pfizer-BioNTech without government funding.

Oxford/AstraZeneca vaccines accounted for 37.3% and Pfizer-BioNTech for 37% of secured/expected vaccines among the four vaccines. However, as Pfizer-BioNTech delivered only 57% of the vaccines donations they promised, the leaders in terms of donated vaccines that were actually delivered were Oxford-AstraZeneca (34.6%) and Moderna (32%). From the secured/expected donations of the four vaccines, on average, 70% were actually delivered by January 2022.

Table 4.

Distribution between AstraZeneca, J&J, Moderna and Pfizer-BioNTech vaccines donated to 17 MICs

(Source: UNICEF COVID-19 Market Dashboard, data as of January 2022)

Company	Secured doses bilateral	Delivered doses bilateral	Total secured doses	% secured	Total delivered doses	% delivered by each company	% delivered vs secured
AstraZeneca	25484960	20762260	48494800	35.0%	30690520	31.4%	63%
AstraZeneca/CSL Australia	2640000	2540000	2640000	1.9%	2540000	2.6%	96%
AstraZeneca/Laboratorios Liomont, Mexico	404900	404900	404900	0.3%	404900	0.4%	100%
AstraZeneca/Serum Institute of India	200000	200000	200000	0.1%	200000	0.2%	100%
J&J	3000000	3000000	4056925	2.9%	3604800	3.7%	89%
Moderna	14100820	14100820	31617320	22.8%	31264620	32.0%	99%
Pfizer-BioNTech	3054520	2486520	51315850	37.0%	29064240	29.7%	57%
Total			138729795		97769080	Average	70%

COVAX

Most of the 17 countries (except for Belarus, Kazakhstan, Russia and Thailand) are participating in COVAX and all of them procured vaccines bilaterally in parallel with COVAX i.e. directly from the suppliers. El Salvador, Honduras, India, Moldova, Morocco, Ukraine and Vietnam are 'advanced market commitment' (AMC) countries of COVAX and are eligible for receiving 'free-of-charge' vaccines from COVAX to cover up to 20% of their population. Brazil, Argentina, Guatemala and Georgia are 'self-financing participants' (SFP) of COVAX meaning that they are financing the vaccine supplies facilitated by COVAX from their own funds. Of the 2.8 billion vaccines delivered to the 17 MICs by January 2022, COVAX deliveries (including to SFPs) accounted for 106.96 million or 4%, which is significantly less than what was expected from this global initiative (see Table 1).¹⁰ Globally, COVAX on average delivered 9% of all vaccines. It should be also noted that according to IMF data only 27% (0.926bn out of 3.471bn doses) of COVAX-contracted doses had been shipped by January 2022.¹¹ This means that the 17 MICs had to rely far more on their own capacity to secure bilateral deals in the face of vaccine nationalism and the absence of widespread local production.

¹⁰ Even the fact that 5 UMICs (Argentina, Armenia, Brazil, Georgia, Guatemala) from 17 countries analyzed were self-financing participants of COVAX which partially or fully (?) financed received supplies from COVAX, did not change the situation. Although, as vaccines delivery data in UNICEF Dashboard on 17 countries has significant gaps – there is 0,868bn vaccines of unknown origin (it is not clear whether they came through bilateral agreements, donations or COVAX) – actual situation might be somewhat different.

¹¹ IMF, COVID-19 Global Targets and Progress Tracker <https://www.imf.org/en/Topics/imf-and-covid19/COVID-19-Global-Targets-and-Progress-Tracker> (accessed 19 January 2022)

According to UNICEF data, approximately 60% of all vaccine donations secured by COVAX AMC or SFP members among 17 MICs were secured/facilitated through COVAX. In the 17 MICs, COVAX donations comprised only Oxford-AstraZeneca, J&J, Moderna and Pfizer-BioNTech vaccines – vaccines of other manufacturers were not donated through COVAX. Pfizer-BioNTech delivered donations primarily through COVAX (91% through COVAX v. 9% bilaterally), while donations of the AstraZeneca vaccine were done mainly bilaterally (68% bilaterally vs 32% through COVAX).



COVAX failed. Market-based approaches had already proven inequitable before 2020. During the pandemic, these approaches proved disastrous. COVAX deliveries to Guatemala were repeatedly delayed and we received a fraction of the vaccine doses we were promised. The international community must acknowledge this or else we will repeat the mistakes of this pandemic in the future.

Alma De Leon,
ITPC-LATCA, Guatemala



Voluntary Licensing and Local Manufacturing

In May 2020, the WHO in partnership with Government of Costa Rica and Medicines Patent Pool, Open COVID Pledge, UN Technology Bank and Unitaid launched the COVID-19 Technology Access Pool (C-TAP) inviting developers of COVID-19 vaccines to share their IP and know how.¹² However this initiative was ignored by developers of COVID-19 vaccines including Oxford-AstraZeneca, J&J, Moderna and Pfizer-BioNTech.¹³ While there were various local manufacturers around the world ready to produce COVID-19 vaccines,¹⁴ the four companies concentrated on boosting their own manufacturing capacity, outsourcing through contract manufacturing with manufacturers based mainly in HICs (EU, US) with limited or no sharing of technology. For instance, in August 2021, an agreement was announced between a private company in Brazil, Eurofarma Laboratorios and Pfizer-BioNTech.¹⁵ Eurofarma has experience with injectable drugs and is able to establish a mRNA production unit. The deal however is focused just on fill and finish, with no technology transfer or even registration of a product by Eurofarma and sales completely in the hands of Pfizer-BioNTech.

¹² WHO, WHO COVID-19 Technology Access Pool <https://www.who.int/initiatives/covid-19-technology-access-pool> (accessed 19 January 2022)

¹³ Sarah Newey, 'WHO patent pool for potential Covid-19 products is 'nonsense', pharma leaders claim', The Telegraph (London, 29 May 2020) <https://www.telegraph.co.uk/global-health/science-and-disease/patent-pool-potential-covid-19-products-nonsense-pharma-leaders/> (accessed 17 May 2023)

¹⁴ Maria Cheng, Lori Hinnant, 'Is a vaccine a private patent or a global public good?' Associated Press (Paris, 1 March 2021) <https://www.csmonitor.com/World/2021/0301/Is-a-vaccine-a-private-patent-or-a-global-public-good> (accessed 17 May 2023)

¹⁵ Ludwig Burger, Manas Mishra, 'Brazil's Eurofarma to make Pfizer COVID-19 shots for Latin America' Reuters (26 August 2021) <https://www.reuters.com/world/americas/pfizer-biontech-sign-deal-with-brazils-eurofarma-make-covid-19-shots-2021-08-26/> (accessed 17 May 2023)



India has always been known as the pharmacy of the developing world with competition between multiple generic producers keeping prices low and supply sustainable. We also have considerable vaccine manufacturing capacity but the entire global plan for vaccinating LMICs was based on just one Indian producer! When the delta wave hit, we barely had enough vaccines for India from that same producer. Many of our friends in other countries couldn't get even their first shots for the first half of 2021; for people living with HIV or co-infected with TB we know, that COVID-19 is more severe.



Loon Gangte,
DNP+, India



Sinopharm (2 technology transfers) (see Table 5 below). According to the UNICEF Dashboard, during 2020-2021, agreements on supplies by licensees/local manufacturers-partners of the four vaccines companies were entered into only by AstraZeneca partners: SII (India), Biomanguinhos/Fiocruz (Brazil) and Siam Bioscience (Thailand).¹⁸

Notably, from the approximately 42 transfers of technology to local manufacturers based in the 17 MICs, only 4 technology transfers were from AstraZeneca, one for J&J (1) and none for the Pfizer-BioNTech and Moderna vaccines. This demonstrates that the four companies, especially J&J, Moderna and Pfizer-BioNTech were not focused on technology transfer to local manufacturers based in MICs during 2020-21, notwithstanding the urgent need to ensure worldwide access to the vaccines.

Among the four vaccines covered by this report –AstraZeneca, J&J, Moderna and Pfizer-BioNTech, the most vaccines were supplied (84%) or donated (37.3%) to the 17 MICs by AstraZeneca and its partners, SII in particular. These were also the lowest priced among the four vaccines. While there is a high probability that this was a result of early voluntary licensing of vaccine technology to SII, Fiocruz and other manufacturers, this selective licensing approach also resulted in delays and high prices. The suspension of exports by SII during India's delta wave for instance affected a large number of MICs and LICs. Additionally, as discussed later in this paper, average prices for the AstraZeneca vaccine in the 17 MICs exceeded the UNICEF benchmark price by 2.5-9.9 (average 5.5) times. These issues in the availability and affordability of this vaccine could likely have been addressed if the vaccine technology had been freely available for use by any local vaccine manufacturer in the world as initially announced by Oxford University that had originally developed the vaccine.¹⁹

¹⁶ Divya Rajagopal, 'AstraZeneca & Serum Institute of India sign licensing deal for 1 billion doses of Oxford vaccine' The Economic Times (Mumbai, 4 June 2020) <https://economictimes.indiatimes.com/industry/healthcare/biotech/pharmaceuticals/astrazeneca-serum-institute-of-india-sign-licensing-deal-for-1-billion-doses-of-oxford-vaccine/articleshow/76202016.cms?from=mdr> (accessed 17 May 2023)

¹⁷ Developing Countries Vaccine Manufacturers Network (DCVMN), Towards Vaccinating The World Landscape of Current COVID-19 Supply Chain and Manufacturing Capacity, Potential Challenges, Initial Responses, and Possible "Solution Space": a Discussion Document, Appendix, Global COVID-19 Supply Chain & Manufacturing Summit (March 8th and 9th, 2021) p. 6 https://dcvmn.org/wp-content/uploads/2020/04/landscape_of_current_c19_supply_chain_manufacturing_capacity_appendix_embargo_9march20.pdf

¹⁸ See Table 5.

There were other concerns with AstraZeneca's secretive and selective licensing approach. When Brazilian state manufacturer Fiocruz/Farmaguinhos has published a redacted version of the technology transfer agreement with AstraZeneca²⁰ it noted that its agreement with AstraZeneca to work on a not-for-profit basis would continue till 1 July 2021. While the redacted version published referred to a "pandemic period" the provisions defining this period were not published. A news outlet that had reviewed several documents related to this agreement including a Memorandum of Understanding between AstraZeneca and Fiocruz confirmed that the 1 July 2021 date was indeed defined as the end of the pandemic period and that it could only be extended, "if AstraZeneca acting in good faith considers that the SARS-COV-2 pandemic is not over."²¹ In most LMICs COVID-19 vaccination campaigns only started to properly roll out in spring-summer 2021. Moreover, this agreement covered manufacturing for the Brazilian public market of only 100.4 million doses.

For the rest of Latin America, an agreement for the production of the active ingredient in Argentina by mAbxience (Insud pharma) which would then be exported for fill and finish to Mexico for the Oxford-AstraZeneca vaccine was announced in August 2020.²² As delays plagued the delivery of the finished vaccines from Mexico,²³ Argentina offered to complete the entire process for vaccine production within the country.²⁴ It was only in June 2021

that exports of the AstraZeneca vaccine from Mexico to the rest of Latin America finally started.²⁵ With the increasing demand for vaccines and the delays from COVAX and Mexico, AstraZeneca's refusal to consider Argentina's offer and to expand production sites across Latin America seriously limited the supply options for the continent.



In Argentina we had the local manufacturing capacity to make the vaccines not just for ourselves but even for other countries in the region. But big pharma's entire strategy was based on maximizing profits instead of increasing production sources.

Lorena di Giano, FGEP, Argentina



¹⁹ Oxford University Innovation, 'Expedited access for COVID-19 related IP' <https://innovation.ox.ac.uk/technologies-available/technology-licensing/expedited-access-covid-19-related-ip/> (accessed 17 May 2023). Eventually, this approach was changed to giving voluntary licensing to AstraZeneca - Jay Hancock, 'They Pledged to Donate Rights to Their COVID Vaccine, Then Sold Them to Pharma', KFF Health News (25 August 2020) <https://khn.org/news/rather-than-give-away-its-covid-vaccine-oxford-makes-a-deal-with-drugmaker/> (accessed 17 May 2023)

²⁰ Fiocruz, 'COVID-19 vaccine: Fiocruz discloses its Technological Order Agreement with AstraZeneca' (03 November 2020) <https://portal.fiocruz.br/en/news/covid-19-vaccine-fiocruz-discloses-its-technological-order-agreement-astrazeneca> (accessed 17 May 2023)

²¹ AstraZeneca vaccine document shows limit of no-profit pledge' Financial Times <https://www.ft.com/content/c474f9e1-8807-4e57-9c79-6f4af145b686> (accessed 17 May 2023)

²² 'Alberto anunció la fabricación local de la vacuna de Oxford: "En el primer semestre vamos a vacunar' Ambito (Buenos Aires, 12 August 2020) <https://www.ambito.com/politica/vacuna/alberto-anuncio-la-fabricacion-local-la-oxford-en-el-primer-semestre-vamos-r-n5124447#fotogaleria-id-7459703> (accessed 17.05.2023)

²³ Adriana Barrera, 'AstraZeneca confirms delays to COVID-19 shots produced in Latin America' Reuters (Mexico City, 1 May 2021) <https://www.reuters.com/business/healthcare-pharmaceuticals/astrazeneca-confirms-delays-covid-19-shots-produced-latin-america-2021-05-01/> (accessed 17.05.2023)

²⁴ 'Argentina offers to manufacture delayed AstraZeneca vaccines domestically' Buenos Aires Times (Buenos Aires, 7 May 2021) <https://www.batimes.com.ar/news/argentina/government-proposes-to-manufacture-delayed-astrazeneca-oxford-vaccines-domestically.phtml> (accessed 17.05.2023)

²⁵ Karina Suarez, 'México envía 400.000 vacunas de AstraZeneca a América Latina y el Caribe' El Pais (Mexico, 12 June 2021) <https://elpais.com/mexico/2021-06-12/mexico-envia-400000-vacunas-de-astrazeneca-a-america-latina-y-el-caribe.html%C2%A0> (accessed 17.05.2023)

In India, other types of restrictive conditions in the agreement between SII and AstraZeneca came to light when the Indian government stopped²⁶ the export of COVID-19 vaccines as the deadly²⁷ delta wave took hold in India. In a letter to the Indian government, SII sought permission for some exports to be allowed not to other developing countries that were struggling²⁸ with getting any COVID-19 vaccines at all but to the UK. According to a news report quoting the letter, SII stated that, “under the agreement it was agreed that Serum Institute of India will supply any AstraZeneca country where AstraZeneca has commitments anywhere in the world. It was further agreed that, in return for getting access to the AZ technology AZD1222, Serum Institute Of India Pvt. Ltd will treat AstraZeneca as a priority customer, whether it is for drug substance or finished product.”²⁹ SII stated that it had to supply 5 million doses to the UK immediately as part of its agreement with AstraZeneca.³⁰ When the Indian government persisted with the export ban and decided to vaccinate Indians with the 5 million doses earmarked for the UK,³¹ AstraZeneca sent a legal notice to SII to try and force remaining supply.³² AstraZeneca’s refusal to openly license the Oxford vaccine had a direct impact on the 60 LMICs that SII was supposed to supply to while the export ban from India was in effect.

Similarly, AstraZeneca’s selective licensing of just one company in South-east Asia saw major supply delays and disruptions in the region.³³ AstraZeneca’s license with Siam Bioscience based in Thailand was meant to supply Thailand as well as Indonesia, Malaysia, Maldives, Vietnam, Taiwan and the Philippines; many of these countries had the potential for their own local production. There were even delays of supplies to the Thai government, during record wave of COVID infections in Thailand in July 2021. While AstraZeneca said it would deliver 5-6 million doses per month, the Thai government was expecting 10 million doses.³⁴ As concerns grew over the shortfall in supplies several details of the vaccine supply arrangement started appearing in the public domain. AstraZeneca wrote an “open letter”³⁵ to the people of Thailand and subsequently a “leaked” letter³⁶ from the company to the Thai government was published revealing that two-thirds of the vaccine production by Siam Bioscience was earmarked for export to other South-East Asian countries.

²⁶ ‘Coronavirus: India temporarily halts Oxford-AstraZeneca vaccine exports’ BBC (24 March 2021) <https://www.bbc.com/news/world-asia-india-56513371> (accessed 17.05.2023)

²⁷ ‘Deadly Delta wave stole 2,40,000 lives in India between April-June, ‘similar episodes’ could take place in near term: UN report’ The Economic Times (New Delhi, 13 January 2022) <https://economictimes.indiatimes.com/news/india/deadly-delta-wave-stole-240000-lives-in-india-between-april-june-similar-episodes-could-take-place-in-near-term-un-report/articleshow/88883714.cms> (accessed 17.05.2023)

²⁸ ‘Poor countries hit with shortages after India stops Covid-19 vaccine exports’ Deccan Herald (London, 11 April 2021) <https://www.deccanherald.com/international/poor-countries-hit-with-shortages-after-india-stops-covid-19-vaccine-exports-973025.html> (accessed 17.05.2023)

²⁹ Payal Banerjee, ‘Serum Institute Seeks Centre’s Nod To Send 50 Lakh Covishield Doses To the UK’ The Wire (New Delhi, 24 March 2021) <https://thewire.in/business/serum-institutue-seeks-centres-nod-to-send-50-lakh-covishield-doses-to-the-uk> (accessed 17.05.2023)

³⁰ Nick Trigg, ‘Covid vaccine: UK supply hit by India delivery delay’ BBC (London, 18 March 2021) <https://www.bbc.com/news/uk-56438629> (accessed 17.05.2023)

³¹ ‘50 lakh Covishield doses meant for export to UK to be used in India for vaccinating 18-44 age group’ Mint (7 May 2021) <https://www.livemint.com/news/india/50-lakh-covishield-doses-meant-for-export-to-uk-to-be-used-in-india-for-vaccinating-18-44-age-group-11620397536911.html> (accessed 17.05.2023)

³² ‘AstraZeneca has sent Serum Institute a legal notice over delays in COVID-19 vaccine supply: Adar Poonawalla’ Money Control (New Delhi) <https://www.moneycontrol.com/news/india/astrazeneca-has-sent-serum-institute-a-legal-notice-over-delays-in-covid-19-vaccine-supply-adar-poonawalla-6742891.html> (accessed 17.05.2023)

³³ ‘Thai-made AstraZeneca vaccines causing delays across Southeast Asia’ Malaysia Now (11 June 2021) <https://www.malaysianow.com/out-there-now/2021/06/11/thai-made-astrazeneca-vaccines-causing-delays-across-southeast-asia> (accessed 18.05.2023)

³⁴ ‘AstraZeneca admits ‘complicated’ Thai vaccine production launch’ Financial Times <https://www.ft.com/content/1c54c222-98c6-4fc7-b43c-1b9115a27750> (accessed 18.05.2023)

³⁵ ‘An open letter to the people of Thailand’ (AstraZeneca, 24 July 2021) <https://www.astrazeneca.com/country-sites/thailand/press-release/an-open-letter-to-the-people-of-thailand-en.html> (accessed 18.05.2023)

An opposition political party also revealed the leaked text of the Advance Market Commitment agreement signed in January 2021 and an earlier letter of intent dated October 2020 which was presented at a Parliament meeting in July 2021.³⁷ In the “leaked letter” AstraZeneca in a clear attempt to pin the blame of delayed supplies on underestimations and miscalculations by the Thai government referred to their advice to the Thai government that it could have got additional supplies at a no-profit price through COVAX. This letter from AstraZeneca is dated June 2021 by when it was abundantly clear that COVAX was struggling to meet its own meagre targets as vaccine producers prioritized HIC supply, India had stopped exports by SII and Astrazeneca’s attempts to force supply from India had failed. The delays in supplies to South-East Asian countries by AstraZeneca underline the importance of access to technology for any capable local manufacturer during a pandemic.

The only other technology transfer in the 17 MICs was that of the J&J vaccine to Indian company Biological E. The agreement between the companies was announced in August 2020.³⁸ In August 2021 the vaccine received emergency use authorization in India³⁹ but issues related to indemnity demands by J&J held up procurement by the Indian government.⁴⁰ Subsequently, the J&J vaccine doses

manufactured by Biological E were included as part of the QUAD initiative between India, the US, Japan and Australia for export to other LMICs.⁴¹ However, news reports suggest that as of mid-2022, only non-J&J vaccines had been exported as part of the QUAD initiative from India.⁴²



Monitoring by civil society of the launch and capacity of local manufacturing of COVID-19 vaccines in Thailand was not possible as the terms and conditions of the various agreements, including the technology transfer agreement between AstraZeneca and Siam Bioscience, were confidential. Our governments must reject these confidentiality demands and ensure transparency and public scrutiny of these contracts.

Chalerm Sak Kittittrakul,
AAF, Thailand



³⁶ ‘Open the secret ‘Astra’, claiming that the Thai Ministry of Public Health used to inform that it needed only 3 million per month, the dose has almost doubled’ Isra News Agency (17 July 2021) <https://www.isranews.org/article/isranews-news/100580-ASTRAAA00.html> (accessed 18.05.2023)

³⁷ The text of the AMC agreement between AstraZeneca, Siam Biosciences and the Thai government can be accessed here: Thai Progressive Party website, Bangkok <https://www.moveforwardparty.org/wp-content/uploads/2021/07/Covid-19-deal-2.pdf>. The text of the letter of intent between the Thai government, Siam Biosciences and AstraZeneca on ensuring access to vaccine in Thailand can be accessed here: Thai Progressive Party website, Bangkok <https://www.moveforwardparty.org/wp-content/uploads/2021/07/Covid-19-deal-1.pdf> (Source: AIDS Access Foundation, Thailand) (accessed 18.05.2023)

³⁸ Swati Bharadwaj, ‘Bio E in pact with J&J to manufacture Covid-19 vaccine’ The Time of India (Hyderabad, 13 August 2020) <https://timesofindia.indiatimes.com/business/india-business/bio-e-in-pact-with-jj-to-manufacture-covid-19-vaccine/articleshow/77522901.cms> (accessed 18.05.2023)

³⁹ ‘India approves J&J’s single-dose vaccine’ Hindustan Times (New Delhi, 8 August 2021) <https://www.hindustantimes.com/india-news/india-approves-j-j-s-single-dose-vaccine-101628361485430.html> (accessed 18.05.2023)

⁴⁰ Teena Thacker, ‘Indemnity issues may hold up availability of J&J single dose vaccine’ The Economic Times (17 September 2021) <https://economictimes.indiatimes.com/industry/healthcare/biotech/pharmaceuticals/indemnity-issues-may-hold-up-availability-of-jj-single-dose-vaccine/articleshow/86293279.cms?from=mdr> (accessed 18.05.2023)

⁴¹ Krishna N. Das, Mayank Bhardwaj, ‘India supplies non-J&J COVID shots under Quad umbrella’ Reuters (New Delhi, 20 May 2022) <https://www.reuters.com/world/india/india-has-supplied-covid-vaccines-under-quad-umbrella-2022-05-19/> (accessed 18.05.2023)

⁴² Ibid.

Table 5.

Local manufacturing of COVID-19 vaccines (all vaccines) in 17 countries (Source: UNICEF COVID-19 Vaccine Market Dashboard, ⁴³ data as of January 2022 and information provided by MMA Partners).

Country	Vaccine Developer, vaccine name/type	Manufacturer	Manufacturer type	Production type	Secured doses according to supply agreements to the country and/or manufacturing agreement between the companies in 2020-2021, (UNICEF)	Date of agreement
Armenia	None					
Argentina	AstraZeneca	mAbxience (Insud pharma)		Drug substance		
	mRNA vaccines	Sinergium Biotech				
	Sinopharm (Beijing) BBIBP-CorV	Unknown	Technology Transfer	Fill-finish/end-to-end		
	Gamaleya Research Institute, Sputnik V	Laboratorios Richmond	Technology Transfer	Fill-finish/end-to-end	20 000 000	10.12.2020
Belarus	Gamaleya Research Institute, Sputnik V,	Belmedpreparaty	Technology Transfer	Fill-finish	100 000	31.04.2021
Brazil	AstraZeneca/Oxford/Covishield	Biomanguinhos/Fiocruz	Technology Transfer	Fill-finish/end-to-end	175 000 000	03.11.2020
	CanSino Biologicals, Ad5-nCoV	Bionmm	Technology Transfer	Fill-finish/end-to-end		
	Pfizer-BioNTech, Comirnaty	Eurofarma	No Technology Transfer	Fill-finish		Announced in August 2021 ⁴⁴
	Sinovac, CoronaVac	Instituto Butantan	Technology Transfer	Fill-finish	100 000 000	04.10.2020
	HDT Bio, HDT-301	SENAI CIMATEC	Technology Transfer	End-to-end		
	Gamaleya Research Institute, Sputnik V	União Química	Technology Transfer	Fill-finish/end-to-end		
El Salvador	None					
Georgia	None					
Guatemala	None					
Honduras	None					
India	AstraZeneca, Covishield	Serum Institute of India	Technology Transfer	End-to-end	266 000 000	03.05.2021
					110 000 000	03.05.2021
					250 000 000	08.06.2021
					375 000 000	15.07.2021
					660 000 000	09.09.2021
					220 000 000	29.10.2021

India	Janssen Pharmaceuticals, Ad26 SARS-CoV-2	Biological E	Technology Transfer	End-to-end			
	Moderna, mRNA-1273	VAV Lifesciences	CDMO	Excipient supplier			
	Pfizer-BioNTech BioNTech, Comirnaty	VAV Lifesciences	CDMO	Excipient supplier			
	Biological E, BECOV2	Biological E	Own Facility	End-to-end	300 000 000	04.06.2021	
	Bharat Biotech, COVAXIN	Bharat Biotech	Own Facility	End-to-end	80 000 000	11.01.2021	
					190 000 000	08.06.2021	
				Fill-finish	285 000 000	15.07.2021	
		Bharat Immunologicals and Biologicals Corporation Limited	Technology Transfer	Drug substance	60 000 000	29.10.2021	
		Haffkine	Technology Transfer	End-to-end			
		Hester Biosciences	CDMO	Drug substance			
	Gamaleya Research Institute, Sputnik Light	Panacea Biotec	Technology Transfer	End-to-end			
				Stelis Pharma	CDMO	End-to-end	
				Wockhardt	Technology Transfer	End-to-end	
	Gamaleya Research Institute, Sputnik V	Gland Pharma	Technology Transfer	Fill-finish/end-to-end			
				Hetero Pharma	Technology Transfer	Fill-finish/end-to-end	
				Morepen Laboratories	Technology Transfer	Fill-finish/end-to-end	
				Panacea Biotec	Technology Transfer	Fill-finish	
				Serum Institute of India	Technology Transfer	End-to-end	
				Shilpa Biologicals	Technology Transfer	End-to-end	
				Stelis Pharma	CDMO	End-to-end	
				Virchow Biotech	Technology Transfer	Fill-finish/end-to-end	
				Wockhardt	Technology Transfer	End-to-end	
	HDT Bio, HDT-301	Gennova Biopharmaceuticals	Technology Transfer	End-to-end	60 000 000	29.08.2021	
Novavax, Covavax	Serum Institute of India	Technology Transfer	End-to-end				
BCM Ventures, Baylor College of Medicine, Corbevax	Biological E	Technology Transfer	End-to-end				
Providence Therapeutics, PTX-COVID19-B	Biological E	Technology Transfer	End-to-end				
Zyklus Cadila, ZyCov-D	Shilpa Biologicals	Technology Transfer	Drug substance	10 000 000	08.11.2021		

Kazakhstan	Research Institute for Biological Safety Problems, QazCovid-in	Research Institute for Biological Safety Problems	Own Facility	End-to-end	2 790 000	01.07.2021
	Gamaleya Research Institute, Sputnik V	Karaganda Pharmaceutical Complex	Technology Transfer	Fill-finish/end-to-end		
Kyrgyzstan	None					
Moldova	None					
Morocco	Sinopharm (Beijing), BBIBP-CorV	Sothema	Technology Transfer	Fill-finish		Announced in August 2021 ⁴⁵
Russia	CanSino Biologicals, Ad5-nCoV	Petrovax	Technology Transfer	Fill-finish/end-to-end		
	AstraZeneca, AZD1222	R-Pharm	Technology Transfer	Fill-finish		
	Chumakov, Covi-Vac	Chumakov	Own Facility	End-to-end		
		Nanolek	Technology Transfer	End-to-end		
	Gamaleya Research Institute, Sputnik Light	Gamaleya Research Institute	Own Facility	Fill-finish		
	Gamaleya Research Institute, Sputnik V	Binnopharm	CDMO	End-to-end		
		BIOCAD	CDMO	End-to-end		
		Gamaleya Research Institute	Own Facility	End-to-end		
Generium		Technology Transfer	End-to-end			
Pharmasintez	Technology Transfer	End-to-end				
Thailand	AstraZeneca - Vaxzevria	Siam Bioscience Co., Ltd.	Technology Transfer	Fill-finish/end-to-end	61 000 000	26.11.2020
					5 000 000	26.04.2021
					60 000 000	29.09.2021
	Chula Vaccine Research Center, ChulaCov19	BioNet-Asia	Technology Transfer	End-to-end		
Ukraine	None					
Vietnam	Center for Genetic Engineering and Biotechnology, Abdala	IVAC	Technology Transfer	End-to-end	10 000 000	20.09.2021
	Arcturus Therapeutics, ARCT-021	Vinbiocare	Technology Transfer	Fill-finish		
	Shionogi, Recombinant SARS-CoV-2 vaccine	AIC	Technology Transfer	End-to-end		
		VABIOTECH	Technology Transfer	End-to-end		
	Gamaleya Research Institute, Sputnik Light	VABIOTECH	Technology Transfer	Fill-finish/end-to-end		
Gamaleya Research Institute, Sputnik V	VABIOTECH	Technology Transfer	Fill-finish/end-to-end		Deal was announced in July 2021.	

⁴³ COVID-19 Market Dashboard (UNICEF) <https://www.unicef.org/supply/covid-19-vaccine-market-dashboard> (accessed 18.05.2023)

⁴⁴ Ludwig Burger, Manas Mishra, 'Brazil's Eurofarma to make Pfizer COVID-19 shots for Latin America' Reuters (Bengaluru, 26 April 2021) <https://www.reuters.com/world/americas/pfizer-biontech-sign-deal-with-brazils-eurofarma-make-covid-19-shots-2021-08-26/> (accessed 18.05.2023)

⁴⁵ 'King Mohammed VI launches COVID vaccine initiative for Morocco, rest of Africa' The Arab Weekly (Rabat, 6 July 2021) <https://thearabweekly.com/king-mohammed-vi-launches-covid-vaccine-initiative-morocco-rest-africa> (accessed 18.05.2023)

While various factors influence vaccination rates, those countries among the 17 MICs that had local manufacturing witnessed higher levels of vaccination. While, local manufacturers of COVID-19 vaccines are present in 10 out of the 17 MICs, only manufacturers in Argentina, Brazil, India, Russia and Thailand were able to conclude supply agreements and/or manufacturing agreements in 2020 or the first 6 months of 2021.⁴⁶ Average vaccinations coverage (61%) and percentage of total vaccines delivered to population (80%) was higher in these countries than in the remaining 12 MICs that were unable to establish local manufacturing of COVID-19 vaccines early i.e. 40% average vaccinations coverage and 55% of total vaccines delivered to population.

Marketing authorization

The registration status of the four vaccines in Armenia, Belarus, Georgia, Kyrgyzstan and Russia was unclear; however there were some supplies of some of the four vaccines to Georgia and Armenia probably on the basis of a single import permit (without marketing authorisation). These countries relied primarily on vaccines from Russia and China and to a much lesser extent the Oxford-AstraZeneca and Pfizer-BioNTech vaccines. In the remaining 11 countries, at least three of the four vaccines were registered for emergency/conditional use by January 2022. In Brazil, two of the vaccines, Oxford/AstraZeneca vaccine by Fiocruz and the Pfizer-BioNTech vaccine, have received full approvals and in India, the Oxford/AstraZeneca vaccine by Serum Institute of India has received full approval.

The J&J vaccine had the least approvals (5) in the 17 countries while the Oxford/AstraZeneca vaccine had the most approvals (19 in total - 7 approvals held by AstraZeneca and 12 by other manufacturers of ChAdOx1 nCoV-19 vaccine indicating the role of local manufacturing in increasing registration). Moderna and Pfizer-BioNTech have 6 approvals each. In terms of the timing of registrations, the four vaccines were registered in the 17 MICs in 2021 on average in the following months: other ChAdOx1 nCoV-19 vaccine manufacturers - February; AstraZeneca – March; Pfizer-BioNTech – March; Moderna – May and J&J – June. As can be expected, countries with the smallest populations had the least approvals of all (see Table 6).

⁴⁶ It could be assumed that for vaccines to be manufactured, supplied and administered it will take up to 6 months. Though there is no data in UNICEF on concluded agreements for supplies to Russia from manufacturers based in Russia, it could be inferred that locally produced vaccines were used for administering to population of Russia.

⁴⁷ COVID-19 Market Dashboard (UNICEF) <https://www.unicef.org/supply/covid-19-vaccine-market-dashboard> (accessed 18 January 2022)

⁴⁸ Narine Ghalechian, 'Armenia Scraps Restrictions For AstraZeneca Vaccine' Radio Azatutyun (Yerevan, 27 April 2021) <https://www.azatutyun.am/a/31226006.html> (accessed 18.05.2023)

⁴⁹ 'Pfizer shot against COVID-19 available in Armenia vaccination sites' Armenpress (Yerevan, 21 February 2022) <https://armenpress.am/eng/news/1076054/> (accessed 18.05.2023)

⁵⁰ Basta NE and Moodie EMM on behalf of the VIPER (Vaccines, Infectious disease Prevention, and Epidemiology Research) Group COVID-19 Vaccine Development and Approvals Tracker Team. COVID-19 Vaccine Development and Approvals Tracker. (2020). <https://covid19.trackvaccines.org/country/belarus/> (accessed 18.05.2023)

⁵¹ Assel Satulbalidina, 'First Batch of Pfizer Vaccine Delivered to Kazakhstan' The Astana Times (Astana, 12 November 2021) <https://astanatimes.com/2021/11/first-batch-of-pfizer-vaccine-delivered-to-kazakhstan/> (accessed 18.05.2023)

Table 6.

Marketing approvals of AstraZeneca, J&J, Moderna and Pfizer-BioNTech vaccines in 17 MICs (Source: UNICEF COVID-19 Vaccine Market Dashboard, ⁴⁷ data as of January 2022 and information provided by MMA Partners).

Country	Vaccine developer and vaccine name	Manufacturer/ approval holder	Type of approval	Date
Armenia	Not registered, however, AstraZeneca, ⁴⁸ Pfizer, ⁴⁹ have been imported to Armenia for use within the state program probably on the basis of a single import permit (without marketing authorisation)			
Argentina	Oxford/AstraZeneca, ChAdOx1 nCoV-19, Vaxevria	AstraZeneca	Emergency/conditional use	30.12.2021
	Oxford/AstraZeneca, Covishield	Serum Institute of India	Emergency/conditional use	09.02.2021
	Moderna/NIH, mRNA-1273 COVID-19	Moderna	Emergency/conditional use	23.07.2021
	Pfizer-BioNTech, Comirnaty	Pfizer-BioNTech	Emergency/conditional use	22.12.2020
Belarus	Not registered, though Oxford/AstraZeneca vaccine is in clinical trials in Belarus. ⁵⁰			
Brazil	Oxford/AstraZeneca, ChAdOx1 nCoV-19, Vaxevria	FIOCRUZ	Licensure	12.03.2021
	Oxford/AstraZeneca, Covishield	Serum Institute of India	Emergency/conditional use	17.01.2021
	Jansen (J&J), Ad26.COV2.5	Janssen	Emergency/conditional use	31.03.2021
	Pfizer-BioNTech, Comirnaty	Pfizer-BioNTech	Licensure	23.02.2021
El Salvador	Pfizer-BioNTech, Comirnaty	Pfizer-BioNTech	Emergency/conditional use	17.01.2021
	Oxford/AstraZeneca, ChAdOx1 nCoV-19, Vaxevria	AstraZeneca	Emergency/conditional use	06.01.2021
	Oxford/AstraZeneca, Covishield	Serum Institute of India	Emergency/conditional use	25.01.2021
	Moderna/NIH, mRNA-1273 COVID-19		In use but not approved	
Georgia	Not registered, however, Astrazeneca, Pfizer, have been imported to Georgia for use within the state program on the basis of a single import permit (without marketing authorisation) issued by the Special Commission of the MoH.			
Guatemala	Moderna/NIH, mRNA-1273 COVID-19	Moderna	Emergency/conditional use	25.02.2021
	Oxford/AstraZeneca, ChAdOx1 nCoV-19, Vaxevria	AstraZeneca	Emergency/conditional use	11.03.2021
	Oxford/AstraZeneca, Covishield	Serum Institute of India	Emergency/conditional use	18.02.2021
	Pfizer-BioNTech, Comirnaty		In circulation, not approved	
Honduras	Oxford/AstraZeneca, ChAdOx1 nCoV-19, Vaxevria	AstraZeneca	Emergency/conditional use	04.03.2021
	Oxford/AstraZeneca, Covishield	Serum Institute of India	Emergency/conditional use	04.03.2021
	Moderna/NIH, mRNA-1273 COVID-19	Moderna	Emergency/conditional use	17.02.2021
	Pfizer-BioNTech, Comirnaty		In circulation, not approved	
India	Oxford/AstraZeneca, Covishield	Serum Institute of India	Emergency/conditional use	03.01.2021
	Jansen (J&J), Ad26.COV2.5	Janssen	Emergency/conditional use	07.08.2021
	Moderna/NIH, mRNA-1273 COVID-19	Cipla	Emergency/conditional use	29.06.2021
Kazakhstan	Pfizer-BioNTech, Comirnaty ⁵¹	Pfizer	Approved and/or in circulation	

Country	Vaccine developer and vaccine name	Manufacturer/ approval holder	Type of approval	Date
Kyrgyzstan	Not registered, however, AstraZeneca, ⁵² Pfizer, ⁵³ have been imported to Kyrgyzstan for use within the state program probably on the basis of a single import permit (without marketing authorisation)			
Moldova	Oxford/AstraZeneca, ChAdOx1 nCoV-19, Vaxevria		Approved and/or in circulation	
	Jansen (J&J), Ad26.COV2.5		Approved and/or in circulation	
	Moderna/NIH, mRNA-1273 COVID-19		Approved and/or in circulation	
	Pfizer-BioNTech, Comirnaty		Approved and/or in circulation	
Morocco	Oxford/AstraZeneca, ChAdOx1 nCoV-19, Vaxevria	AstraZeneca	Emergency/conditional use	06.01.2021
	Oxford/AstraZeneca, Covishield	Serum Institute of India	Emergency/conditional use	18.01.2021
	Jansen (J&J), Ad26.COV2.5		In circulation, not approved	
	Pfizer-BioNTech, Comirnaty		In circulation, not approved	
Russia	No approval for any of the four vaccines, though Oxford/AstraZeneca vaccine is in clinical trials in Russia. ⁵⁴			
Thailand	Oxford/AstraZeneca, ChAdOx1 nCoV-19, Vaxevria	AstraZeneca	Emergency/conditional use	21.01.2021
	Oxford/AstraZeneca, Covishield	Serum Institute of India	Emergency/conditional use	21.01.2021
	Jansen (J&J), Ad26.COV2.5	Janssen	Emergency/conditional use	25.03.2021
	Moderna/NIH, mRNA-1273 COVID-19	Moderna	Emergency/conditional use	13.05.2021
	Pfizer-BioNTech, Comirnaty	Pfizer-BioNTech	Emergency/conditional use	24.06.2021
Ukraine	Oxford/AstraZeneca, ChAdOx1 nCoV-19, Vaxevria	Catalent	Emergency/conditional use	31.05.2021
	Oxford/AstraZeneca, ChAdOx1 nCoV-19, Vaxevria	SK Bioscience	Emergency/conditional use	20.04.2021
	Oxford/AstraZeneca, Covishield	Serum Institute of India	Emergency/conditional use	22.02.2021
	Jansen (J&J), Ad26.COV2.5	Janssen, Belgium	Emergency/conditional use	02.07.2021
	Moderna/NIH, mRNA-1273 COVID-19		Donation (use without registration)	
	Pfizer-BioNTech, Comirnaty	Pfizer Belgium, BioNTech Germany	Emergency/conditional use	22.02.2021
Vietnam	Oxford/AstraZeneca, ChAdOx1 nCoV-19, Vaxevria	AstraZeneca	Emergency/conditional use	01.02.2021
	Jansen (J&J), Ad26.COV2.5	Janssen	Emergency/conditional use	15.07.2021
	Moderna/NIH, mRNA-1273 COVID-19	Moderna	Emergency/conditional use	28.06.2021
	Pfizer-BioNTech, Comirnaty	Pfizer-BioNTech	Emergency/conditional use	13.06.2021

⁵² Akylai Tatenova, 'Covid-19 Vaccination in Kyrgyzstan: Frequently Asked Questions' Cabar (Bishkek, 26 August 2021) <https://cabar.asia/ru/vaktsinatsiya-ot-covid-19-v-kyrgyzstane-otvety-na-samye-rasprostranennye-voprosy> (accessed 18.05.2023)

⁵³ US Embassy in Kyrgyz Republic, United States Donates Another 49,000 Doses of Pfizer Vaccines to the Kyrgyz Republic (Bishkek, 13 December 2021) <https://kg.usembassy.gov/united-states-donates-another-49000-doses-of-pfizer-vaccines-to-the-kyrgyz-republic/> (accessed 18.05.2023)

⁵⁴ Basta NE and Moodie EMM on behalf of the VIPER (Vaccines, Infectious disease Prevention, and Epidemiology Research) Group COVID-19 Vaccine Development and Approvals Tracker Team. COVID-19 Vaccine Development and Approvals Tracker. (2020). <https://covid19.trackvaccines.org/country/russian-federation/> (accessed 18.05.2023)

Pricing

Both AstraZeneca⁵⁵ and J&J⁵⁶ claim to have been providing their vaccines on a not-for-profit basis through most of 2021. Pfizer-BioNTech stated they would provide a ‘not-for-profit’ price for some countries like India⁵⁷ and concluded a supply agreement with COVAX in July 2021 for a ‘not-for-profit’ price.⁵⁸ However, these ‘not-for-profit’ prices have never actually been revealed by the companies. This was echoed in the recurring concern reported by MMA Partners in the 17 MICs regarding the confidentiality of pricing and the terms and conditions in procurement deals such as in El Salvador, Georgia, Moldova, Morocco and Ukraine. Such secrecy requirements are usually demanded by pharmaceutical companies and have unfortunately become established practice for some international procurement agencies. Pricing information from UNICEF is notably scarce, if compared for example with pricing data available on procurement by the Global Fund. Information on prices was only reported by MMA Partners in Argentina, Brazil, Guatemala, India, Morocco and Thailand. Among these 6 MICs, on average the highest prices appeared to have been paid by Morocco and Guatemala and the lowest by India and Thailand (see Table 7).

Prices for the Oxford-AstraZeneca vaccine were the lowest among the four vaccines ranging from \$2.03 for the Oxford-AstraZeneca in Thailand and \$2.88 for Oxford-AstraZeneca made by SII in India to \$4.34 for dose of Oxford-AstraZeneca vaccine in Guatemala and \$5.67 for the Oxford-AstraZeneca by SII in Morocco. The highest prices among the four vaccines were for the Moderna vaccine ranging from \$22.50 per dose in Argentina to \$33.74 per dose in Thailand.

Notably, the locally produced version of the Oxford/AstraZeneca vaccine (\$3.16) cost less to the Brazilian government, than the version made by SII and imported from India (\$5); SII’s price to Brazil was nearly double its price for the Indian government (\$2.88). Such disparity in pricing even between two licensees of the same vaccine only reinforces the strategic importance of local manufacturing and a greater number of suppliers.

The World Bank determines the income level group of countries (e.g. whether country is HIC, UMIC, LMIC or LIC) based on GNI (gross national income) per capita which is calculated using the World Bank Atlas method.⁵⁹ As is evident from Table 7 there is no correlation between the GNI per capita level of a country and the pricing of the vaccines, in contrast with the tiered-pricing policy used for some medicines by ‘big pharma’ companies. In fact, EU and US obtained better prices for AstraZeneca, Moderna and J&J, than 6 of the MICs.

⁵⁵ Tom Espiner, ‘AstraZeneca to take profits from Covid vaccine’ BBC (12 November 2021) <https://www.bbc.com/news/business-59256223> (accessed 18.05.2023)

⁵⁶ Phil Taylor, ‘J&J mulls switch from non-profit status for COVID jab’ PharmaPhorum (20 October 2021) <https://pharmaphorum.com/news/jj-mulls-switch-from-non-profit-status-for-covid-jab/> (accessed 18.05.2023)

⁵⁷ Rupali Mukherjee, ‘Pfizer offers Covid-19 vaccine to government at ‘not-for-profit’ price’ The Times of India (Mumbai, 23 April 2021) <https://timesofindia.indiatimes.com/business/india-business/pfizer-offers-covid-19-vaccine-to-government-at-not-for-profit-price/articleshow/82202127.cms> (accessed 18.05.2023)

⁵⁸ Pfizer and BioNTech Reach Agreement with COVAX for Advance Purchase of Vaccine to Help Combat COVID-19 (Pfizer, 22 January 2021) <https://www.pfizer.com/news/press-release/press-release-detail/pfizer-and-biontech-reach-agreement-covax-advance-purchase> (accessed 18.05.2023)

Late-stage trials of the Pfizer-BioNtech vaccine took place in Brazil. And yet they refused to transfer the technology for the local production of the mRNA vaccine and then held our government to ransom in procurement negotiations. It’s very clear that big pharma was only interested in making billions of dollars at the expense of our lives and health.

Felipe de Carvalho,
ABIA, Brazil



Table 7.

Reported and estimated/benchmark prices in 6 MICs, the EU and the US (Source: UNICEF COVID-19 Vaccine Market Dashboard,⁶⁰ data as of January 2022 and information provided by MMA Partners).

Country (income status: HIC – high income country; UMIC – upper middle income country; LMIC – lower middle income country)	Prices, US dollars			How many times available price paid is higher compared to es- timated cost of manufacturing or benchmark UNICEF price	GNI per capita	Comment
USA (HIC)				9.8	\$64 550	
AstraZeneca	\$4.00			5.0		
J&J	\$10.00			12.5		
Moderna	\$15.00			5.3		
Pfizer/BioNTech	\$19.50			16.5		
EU (HIC)				10.1	\$34 234	
AstraZeneca	\$2.19	\$3.50		2.7-4.4		\$2.19 - 2020; \$3.50 - 2021 price
J&J	\$8.50			10.6		
Moderna	\$18.00	\$25.50		6.3-8.9		\$18.00 - 2020; \$25.50 - 2021 price
Pfizer/BioNTech	\$18.90	\$23.15		16-19.6		\$18.90 - 2020, \$23.15 - 2021
Argentina (UMIC)				7.0	\$9 070	
AstraZeneca	\$4.00			5.0		
SII - Covishield	\$4.10			5.1		
Moderna	\$21.50			7.5		
Pfizer/BioNTech	\$12.00			10.2		
Brazil (UMIC)				6.2	\$7 850	
AstraZeneca - Vaxzevria	\$3.16			4.0		Fiocruz
SII - Covishield	\$5.00			6.3		
Pfizer/BioNTech	\$10.00			8.5		
Guatemala (UMIC)				5.4	\$4 490	
AstraZeneca	\$4.32	\$4.34		5.4		\$4.32 - March 2021, \$4.34 - April 2021
India (LMIC)				6.2	\$1 920	
SII - Covishield	\$4.05	\$2.88	\$7.95 ⁶¹	3.6-5.1		\$4.05 - for government in April 2021, \$2.88 - for government in July 2021, \$7.95 - private market price
Morocco (LMIC)				7.1	\$2 980	
SII - Covishield	\$5.67			7.1		
Thailand (UMIC)				9.4	\$7 040	Source of prices for Thailand is Thai media that mentions the information for biospace.com (as of 23 April 2021)
AstraZeneca	\$2.09	\$5.09		2.6-6.4		
J&J	\$9.75			12.2		
Moderna	\$24.38	\$34.85		8.6-12.2		
Pfizer/BioNTech	\$19.00			16.1		
Estimated costs or benchmark prices						
AstraZeneca	\$0.80	UNICEF procures existing vaccines on behalf on many low- and middle-income countries. According to analysis in the Lancet they pay a median of 0.80 cents a dose for all vaccines https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(21)00306-8/fulltext				
J&J	\$0.80					
Moderna	\$2.85					
Pfizer/BioNTech	\$1.18					
Estimate of Public Citizen with engineers from Imperial College London https://www.citizen.org/article/how-to-make-enough-vaccine-for-the-world-in-one-year/						

Estimates⁶² suggest that with high volumes, the Moderna and Pfizer-BioNTech vaccines could be produced at \$2.85 and \$1.18 per dose respectively. For the adenovirus vector vaccines, higher end estimates range from \$0.15 to \$0.23 per dose depending on the process used.⁶³ As these estimates do not include post-production and delivery costs, the benchmark price for the Oxford-Astrazeneca and J&J vaccines used in this report is \$0.80 per dose which was the median price paid by countries for vaccine purchases through UNICEF before the pandemic.⁶⁴



In Morocco we paid more than double the price that the EU paid for the same vaccine! With such high volumes being procured and public investment in these vaccines how were these high prices justified? The total lack of transparency of vaccine prices allowed the pharmaceutical industry to make huge profits during a public health crisis.



Marwa El Harrar,
ITPC MENA, Morocco



As witnessed in the case of medicines, the gross overpricing of the four COVID-19 vaccines would not be possible if the existing IP system did not give these companies the power to control when, how, where and at what price life-saving products are made available.

Prices for the four vaccines collected from 6 MICs exceeded these estimated/benchmark prices by 2.6-16.1 (average 9.4) times. The AstraZeneca prices exceeded the UNICEF benchmark price by 2.6-6.4 (average 4.5) times, SII by 3.6-5.1 (average 4.3) times and J&J by 12.2 times.⁶⁵ Moderna's average price exceeded minimum cost estimates by 7.5-12.2 (9.9) times and Pfizer-BioNTech by 8.5-16.1 (average 12.3) times.

⁵⁹ World Bank Country and Lending Groups (World Bank website) <https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups> (accessed 19 January 2022)

⁶⁰ COVID-19 Market Dashboard (UNICEF) <https://www.unicef.org/supply/covid-19-vaccine-market-dashboard> (accessed 19 January 2022)

⁶¹ SII Covishield private market price is not taken into account for comparison with estimated cost of manufacturing, as similar private market prices for the other vaccines are not available.

⁶² Zoltan Kis, Zain Rizvi, How to Make Enough Vaccine for the World in One Year, Public Citizen (Report, 26 May 2021) <https://www.citizen.org/article/how-to-make-enough-vaccine-for-the-world-in-one-year/> (accessed 18.05.2023)

⁶³ Ferreira, R.G.; Gordon, N.F.; Stock, R.; Petrides, D. Adenoviral Vector COVID-19 Vaccines: Process and Cost Analysis. *Processes* 2021, 9, 1430. <https://doi.org/10.3390/pr9081430> (accessed 18.05.2023)

⁶⁴ Olivier Wouters et al., Challenges in ensuring global access to COVID-19 vaccines: production, affordability, allocation, and deployment, *Lancet* 2021; 397: 1023–34, 12 February 2021, [https://doi.org/10.1016/S0140-6736\(21\)00306-8](https://doi.org/10.1016/S0140-6736(21)00306-8) (accessed 18.05.2023)

⁶⁵ As it is 1-shot vaccine it could be argued that J&J's vaccine price should be divided by 2, when compared to UNICEF benchmark price 0,80 USD, thus the overpricing would be 5,9 times, and not 11,8 times.

Conclusion

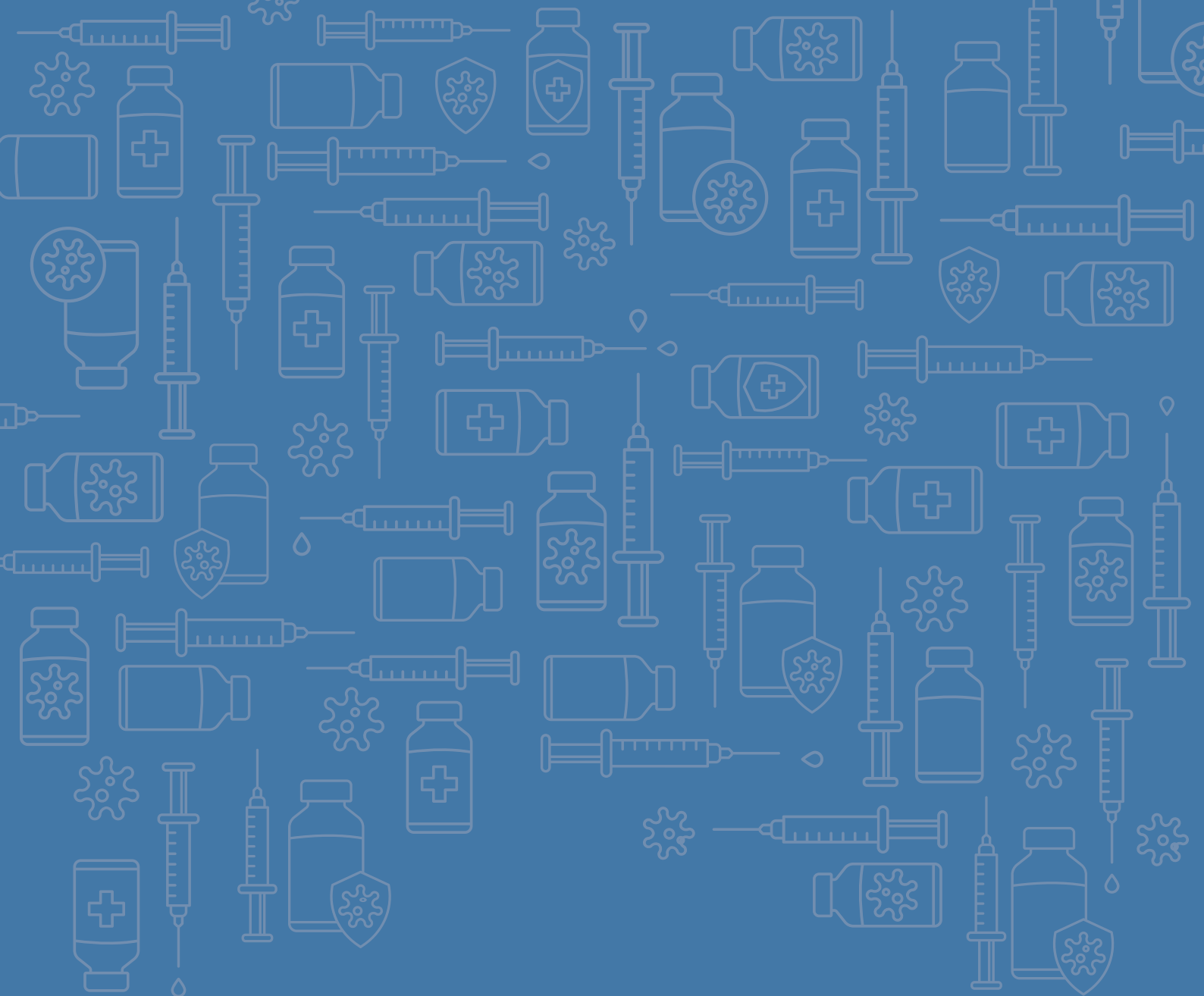
The existing system of IP protection on vaccines significantly contributed to the delays in supplies of vaccines and led to significant overpricing of the AstraZeneca, J&J, Moderna and Pfizer-BioNTech COVID vaccines in the 17 MICs covered in this report. Global efforts to address vaccines nationalism through COVAX were ineffective for the 17 MICs. Even globally most contracted volumes sat outside COVAX which accounted for only 12% of the total volume of deliveries even well into 2022.⁶⁶ With the failure of COVAX, smaller countries among the 17 MICs were overly reliant on donations which were unpredictable and unreliable. The impacts documented in this report were felt in nearly every LMIC as reflected in the WHO's Global Vaccine Market Report 2022 that covers the same time period as this report i.e. 2021.⁶⁷ The WHO's report notes the impact of IP monopolies not only on pricing and availability, but also on how they limited the possibility of fully leveraging the capacity for local and regional production and supply of vaccines in lower-income countries.

Many of the concerns raised in this report are now reflected in the Zero Draft of the Pandemic Treaty currently being negotiated at the WHO.⁶⁸ As the international community prepares for the next pandemic, it must recognise the crucial role and work of national and regional community and civil society groups during the pandemic. Across the world, these groups acted as watchdogs, documented and analysed procurement, pricing, production and supply of vaccines, challenged vaccine patents and advocated tirelessly against the inequity and inequality in COVID-19 vaccine access. This report relies on much of that work. The mistakes made by the international community in side-lining the voices and experience of civil society during the COVID-19 pandemic must not be repeated and the work of these groups must be supported, encouraged and considered central in any negotiations and plans to tackle future pandemics.

⁶⁶ Global Vaccine Market Report 2022: A shared understanding for equitable access to vaccines, WHO, May 2023, p. 9
<https://www.who.int/publications/i/item/9789240062726>

⁶⁷ Ibid.

⁶⁸ WHO Zero draft of the WHO CA+ for the consideration of the Intergovernmental Negotiating Body at its fourth meeting, A/INB/4/3 (Knowledge Ecology International website) <https://www.keionline.org/wp-content/uploads/WHO-zero-draft-pandemic-treaty-1Feb2023.pdf>



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