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Supplemental information

**Achieving path-dependent equity for
global COVID-19 vaccine allocation**

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Achieving Path-Dependent Equity for Global COVID-19 Vaccine Allocation

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Supplemental File

Table S1. COVID-19 vaccines administered by country and country classifications

Country	Country Classification^{1*}	COVID-19 Vaccine Doses Administered²
United States of America	HIC	82,572,848
China	UMIC	52,520,000
India	LMIC	24,037,644
United Kingdom	HIC	23,773,959
Turkey	UMIC	10,222,994
Israel	HIC	8,731,727
Brazil	UMIC	8,580,097
Germany	HIC	7,681,678
Russian Federation	UMIC	6,694,349
United Arab Emirates	HIC	6,325,211
France	HIC	5,807,779
Italy	HIC	5,407,294
Spain	HIC	4,742,602
Morocco	LMIC	4,613,292
Indonesia	UMIC	4,534,798
Chile	HIC	4,270,024
Bangladesh	LMIC	4,013,963
Poland	HIC	4,006,643
Mexico	UMIC	2,583,435
Canada	HIC	2,225,278
Romania	HIC	1,832,198
Netherlands	HIC	1,619,839
Argentina	UMIC	1,357,596
Hungary	HIC	1,316,935
Nepal	LMIC	1,106,599
Greece	HIC	1,089,250
Portugal	HIC	1,032,968
Belgium	HIC	990,335
Sweden	HIC	985,681
Switzerland	HIC	948,678
Czechia	HIC	834,427
Austria	HIC	830,688
Serbia	UMIC	750,533
Denmark	HIC	742,695
Sri Lanka	LMIC	737,062
Singapore	HIC	611,314
Norway	HIC	584,212
Finland	HIC	575,433
Slovakia	HIC	544,986
Ireland	HIC	530,197
Bahrain	HIC	514,559
Republic of Korea	HIC	446,941
Peru	UMIC	347,241
Qatar	HIC	327,000
Dominican Republic	UMIC	303,490
Saudi Arabia	HIC	295,530
Bulgaria	UMIC	294,133
Lithuania	HIC	292,261
Croatia	HIC	264,703
Pakistan	LMIC	227,917
Slovenia	HIC	207,287
Colombia	UMIC	206,475
Maldives	UMIC	165,675
Panama	HIC	150,411
Costa Rica	UMIC	149,812
Estonia	HIC	146,083
Azerbaijan	UMIC	143,115
Malaysia	UMIC	139,720
South Africa	UMIC	107,054

Myanmar	LMIC	104,865
Jordan	UMIC	101,230
Oman	HIC	98,947
Cyprus	HIC	98,427
Seychelles	HIC	97,779
Australia	HIC	94,908
Malta	HIC	92,771
Latvia	HIC	82,115
Algeria	LMIC	75,000
Lebanon	UMIC	64,974
Iran	MIC	60,486
Uruguay	HIC	54,154
Senegal	LMIC	52,031
Luxembourg	HIC	47,515
Belarus	UMIC	46,645
Japan	HIC	46,469
Cambodia	LMIC	44,918
Barbados	HIC	44,859
Ecuador	UMIC	42,114
Iceland	HIC	41,989
Zimbabwe	LMIC	35,761
Jersey	HIC	33,511
Afghanistan	LIC	31,150
Ukraine	LMIC	29,584
Isle of Man	HIC	26,172
Cayman Islands	HIC	25,408
Kazakhstan	UMIC	22,294
Guernsey	HIC	22,040
Bermuda	HIC	20,705
Bolivia	LMIC	20,025
Thailand	UMIC	17,697
El Salvador	LMIC	16,300
Mongolia	LMIC	15,432
Philippines	LMIC	13,629
Venezuela	UMIC	12,194
Dominica	UMIC	10,476
New Zealand	HIC	9,431
Aruba	HIC	8,882
Faroe Islands	HIC	8,068
Anguilla	HIC	7,700
Palestine	--	6,360
Turks and Caicos Islands	HIC	6,347
Moldova	LMIC	5,390
Greenland	HIC	3,927
Mauritius	HIC	3,843
North Macedonia	UMIC	3,536
Lao People's Democratic Republic	LMIC	3,341
British Virgin Islands	HIC	3,334
Equatorial Guinea	UMIC	3,222
Liechtenstein	HIC	3,126
Grenada	UMIC	3,061
Honduras	LMIC	2,787
Montenegro	UMIC	2,629
Andorra	HIC	2,526
Kuwait	HIC	2,500
Guatemala	UMIC	2,427
Monaco	HIC	2,400
Saint Vincent and the Grenadines	UMIC	2,280
San Marino	HIC	2,251
Iraq	UMIC	2,177
Guyana	UMIC	2,050

Falkland Islands	HIC	1,732
Paraguay	UMIC	1,725
Saint Kitts and Nevis	HIC	1,631
Saint Lucia	UMIC	1,460
Egypt	LMIC	1,315
Trinidad and Tobago	HIC	1,137
Montserrat	HIC	859
Suriname	UMIC	729
Belize	UMIC	673
Albania	UMIC	671
Ivory Coast	LMIC	660
Antigua and Barbuda	HIC	383
Nigeria	LMIC	80
Uganda	LIC	80
Angola	LMIC	1
Curacao	HIC	1
Gambia	LIC	1
Kenya	LMIC	1
Marshall Islands	UMIC	1
Micronesia	LMIC	1
Nicaragua	LMIC	1
Togo	LIC	1
Total Doses Administered	--	298,957,960

*HIC = high-income country; UMIC = upper-middle-income country; LMIC = lower-middle-income country; LIC = low-income country

¹Country classifications based on World Bank 2021 classifications, available at:

<https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups>.

²Vaccine administration data sourced from the World Health Organization Coronavirus (COVID-19) Dashboard, as of March 11, 2021. Available at: <https://covid19.who.int/>.

**Per cent of COVID-19 vaccines administered to HICs calculated by the formula: $\frac{\text{total doses administered to HICs}}{\text{total doses administered}}$

Table S2. COVAX distribution portfolio for COVID-19 vaccines

	Goal for Total COVID-19 Vaccine Doses by 2021¹	Total COVID-19 Vaccine Doses Procured²	COVID-19 Vaccine Rollout within Q1/Q2 2021³
COVAX Facility	2B doses	Pfizer/BioNTech: 40M AstraZeneca/Oxford: 270M Novavax: 100M J&J/Janssen: 500M Sanofi/GSK: 200M	AstraZeneca and AstraZeneca/SII: 237M Pfizer/BioNTech: 1.2M

¹COVAX goal for COVID-19 vaccine supply by end-of-year 2021 sourced from COVAX briefing document. Available at: <https://www.who.int/news/item/18-12-2020-covax-announces-additional-deals-to-access-promising-covid-19-vaccine-candidates-plans-global-rollout-starting-q1-2021>.

²COVID-19 vaccine reservation data sourced from UNICEF's COVID-19 Vaccine Market Dashboard, as of March 12, 2021. Available at: <https://www.unicef.org/supply/covid-19-vaccine-market-dashboard>.

³COVID-19 anticipated vaccine distribution for Q1/Q2 2021 sourced from COVAX's interim distribution forecast, as of March 2, 2021. Available at: <https://www.gavi.org/sites/default/files/covid/covax/COVAX-First-round-allocation-of-AZ-and-SII.pdf>.

*Per cent of year-end goal met by COVAX calculated by the formula: $\frac{\text{COVID-19 vaccine rollout within Q1/Q2 of 2021}}{\text{Goal for total doses by 2021}}$

Table S3. Approved COVID-19 vaccine doses reserved by G7 countries relative to country population

Country	Country Population¹	Approved COVID-19 Vaccine Courses Reserved²
Canada	37,589,260	90,000,000
European Union	447,512,041	492,500,000
France	126,264,930	--
Germany	83,132,800	15,000,000
Italy	60,297,400	35,000,000
Japan	126,264,930	132,000,000
United Kingdom	66,834,400	78,500,000
United States	328,239,520	400,000,000

¹Country population based on World Bank 2019 population data, available at: <https://data.worldbank.org/indicator/SP.POP.TOTL>.

²COVID-19 vaccine reservation data sourced from UNICEF's COVID-19 Vaccine Market Dashboard, as of March 12. Available at: <https://www.unicef.org/supply/covid-19-vaccine-market-dashboard>.

*France, Germany and Italy are assumed to be covered under the European Union's reserved doses. All doses from vaccine manufacturers that have been granted approval or emergency use authorization are included, but it is not yet known when these vaccines will be fully administered. Janssen's COVID-19 vaccine is calculated as a one-dose vaccine; all others are two-dose vaccines.

Table S4. List of countries that have both signed bilateral purchase commitments and are on the list for COVAX's Q1/Q2 2021 interim distribution forecast*

Count	Country
1	Albania
2	Argentina
3	Bangladesh
4	Bolivia
5	Bosnia and Herzegovina
6	Botswana
7	Brazil
8	Canada
9	Chile
10	Colombia
11	Costa Rica
12	Ivory Coast
13	Dominican Republic
14	Ecuador
15	Egypt
16	India
17	Indonesia
18	Iraq
19	Jordan
20	Lebanon
21	Malaysia
22	Maldives
23	Mexico
24	Morocco
25	Nepal
26	New Zealand
27	North Macedonia
28	Oman
29	Pakistan
30	Panama
31	Peru
32	Philippines
33	Republic of Korea
34	Saudi Arabia
35	Serbia
36	South Africa
37	Sri Lanka
38	Tunisia
39	Ukraine
40	Uzbekistan
41	Venezuela
42	Vietnam

*COVID-19 vaccine reservation data sourced from UNICEF's COVID-19 Vaccine Market Dashboard, as of March 12, 2021. Available at: <https://www.unicef.org/supply/covid-19-vaccine-market-dashboard>. COVID-19

Anticipated vaccine distribution for Q1/Q2 2021 sourced from COVAX's interim distribution forecast, as of February 3, 2021. Available at: https://www.who.int/docs/default-source/coronaviruse/act-accelerator/covax/covax-interim-distribution-forecast.pdf?sfvrsn=7889475d_5.