

Global, regional, and national estimates of target population sizes for covid-19 vaccination: descriptive study

Appendix

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Table. S1. List of data source by population group

Population group	Country or territory	Year	Proportion of population affected by data source (%)	Data source	Link
Total	All	2020	-	WorldPop	https://www.worldpop.org/geodata/listing?id=30
Armed forces	All	2017	-	World bank	https://data.worldbank.org/indicator/MS.MIL.TOTL.P1
Police officers					
From official reports (n=100)	Afghanistan	2013	0.40	International Aid Agency Oxfam	https://news.yahoo.com/another-female-police-officer-shot-afghanistan-062545180.html
	Albania	2013	0.35	Ministry of Internal Affairs, Republic of Albania	https://www.punetebrendshme.gov.al/2013/12/15/rriten-pagat-per-93-te-punonjesve-te-policise-se-shtetit/
	Algeria	2007	0.30	Algeria General Directorate of National Security	http://lcweb2.loc.gov/frd/cs/profiles/Algeria.pdf
	Antigua and Barbuda	2020	1.02	International Criminal Police Organization	https://www.interpol.int/Who-we-are/Member-countries/Americas/ANTIGUA-BARBUDA
	Argentina	2015	0.77	InSight Crime	https://www.insightcrime.org/argentina-organized-crime-news/argentina-profile/
	Australia	2017	0.22	Australia Government, Productivity Commission	https://www.pc.gov.au/research/ongoing/report-on-government-services/2018/justice/police-services/rogs-2018-partc-chapter6.pdf
	Austria	2016	0.32	European Union	https://ec.europa.eu/eurostat/web/products-eurostat-news/-/DDN-20190104-1
	Barbados	2013	0.70	ROYAL BARBADOS POLICE FORCE	https://www.barbadosparliament.com/uploads/sittings/attachments/c5fee634002ca489f1cd9a9257504cbd.pdf
	Belarus	2010	0.33	United Nations	http://www.unodc.org/documents/data-and-analysis/Crime-statistics/International_Statistics_on_Crime_and_Justice.pdf
	Belgium	2017	0.33	EuroCOP	https://web.archive.org/web/20181130113157/https://vsoa-pol.be/nl_NL/niet-meer-maar-minder-politiemensen-tov-buurlanden/
	Belize	2020	0.25	International Criminal Police Organization	https://www.interpol.int/Who-we-are/Member-countries/Americas/BELIZE
	Bolivia	2015	0.27	International Security Sector Advisory Team	https://issat.dcaf.ch/mkd/Learn/Resource-Library/Country-Profiles/Bolivia-Country-Profile
	Bosnia and Herzegovina	2015	0.52	Belgrade Centre for Security Policy	https://pointpulse.net/magazine/policing-in-bosnia-and-herzegovina/#_ftn1

	Botswana	2020	0.43	International Criminal Police Organization	https://www.interpol.int/Who-we-are/Member-countries/Africa/BOTSWANA
	Brazil	2014	0.15	International Security Sector Advisory Team	https://issat.dcaf.ch/mkd/Learn/Resource-Library/Country-Profiles/Brazil-Country-Profile
	Brunei	2020	0.92	International Criminal Police Organization	https://www.interpol.int/Who-we-are/Member-countries/Asia-South-Pacific/BRUNEI
	Bulgaria	2015	0.35	European Union	https://ec.europa.eu/eurostat/data/database
	Burkina Faso	2020	0.12	International Security Sector Advisory Team	https://issat.dcaf.ch/mkd/Learn/Resource-Library/Country-Profiles/Burkina-Faso-Country-Background-Note
	Burundi	2004	0.15	International Security Sector Advisory Team	https://issat.dcaf.ch/mkd/Learn/Resource-Library/Country-Profiles/Burundi-SSR-Background-Note#16
	Cambodia	1999	0.38	Human Rights Watch	https://www.hrw.org/reports/1999/cambo2/Cambo996-02.htm
	Canada	2017	0.18	Symbol of Statistics Canada	https://www150.statcan.gc.ca/n1/pub/85-002-x/2018001/article/54912/tbl/tbl02-eng.htm
	Central African Republic	2019	0.08	United Nations	https://reliefweb.int/sites/reliefweb.int/files/resources/S_2019_498_E.pdf
	Chile	2015	0.34	International Security Sector Advisory Team	https://issat.dcaf.ch/Learn/Resource-Library2/Country-Profiles/Chile-Country-Profile
	China	2018	0.14	International Criminal Police Organization	https://www.interpol.int/en/Who-we-are/Member-countries/Asia-South-Pacific/CHINA
	Colombia	2020	0.31	National Police of Colombia	https://inpublicsafety.com/2020/04/museum-provides-unique-insights-into-national-police-of-colombia/
	Costa Rica	2015	0.10	International Security Sector Advisory Team	https://issat.dcaf.ch/Learn/Resource-Library2/Country-Profiles/Costa-Rica-Country-Profile
	Cyprus	2016	0.58	European Union	https://ec.europa.eu/eurostat/web/products-eurostat-news/-/DDN-20190104-1
	Czech Republic	2016	0.38	European Union	https://ec.europa.eu/eurostat/web/products-eurostat-news/-/DDN-20190104-1
	Denmark	2017	0.19	Danish national police	https://web.archive.org/web/20181119214341/https://www.politi.dk/en/About_the_police/organisation/
	Dominican Republic	2020	0.29	Policia Nacional Dominicana	https://www.interpol.int/Who-we-are/Member-countries/Americas/DOMINICAN-REPUBLIC
	Ecuador	2015	0.24	International Security Sector Advisory Team	https://issat.dcaf.ch/mkd/Learn/Resource-Library/Country-Profiles/Ecuador-Country-Profile
	Estonia	2020	0.30	Federal Statistical Office of Germany	https://www.destatis.de/DE/Themen/Staat/Oeffentlicher-Dienst/Tabellen/beschaefigten-polizei.html

	Ethiopia	2019	0.03	Independent Advisory Group on Country Information	https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/849804/Ethiopia_-_Background_Note_-_v1.0_November_2019_GOV.UK.pdf
	Fiji	2017	0.45	STANDING COMMITTEE ON FOREIGN AFFAIRS AND DEFENCE	http://www.parliament.gov.fj/wp-content/uploads/2019/02/Review-Report-of-the-Fiji-Police-Force-AR-Aug-2016-to-Jul-2017-Final.pdf
	Finland	2019	0.13	Statista Research Department	https://www.statista.com/statistics/540383/finland-number-of-police-officers/
	France	2019	0.26	European Security&Defence	https://euro-sd.com/2019/12/articles/15555/police-and-paramilitary-forces-in-france/
	Germany	2018	0.38	Federal Statistical Office of Germany	https://www.destatis.de/DE/Themen/Staat/Oeffentlicher-Dienst/Tabellen/beschaefigten-polizei.html
	Greece	2016	0.53	European Union	https://ec.europa.eu/eurostat/web/products-eurostat-news/-/DDN-20190104-1
	Grenada	2020	0.88	Royal Grenada Police Force	https://web.archive.org/web/20131203023819/http://www.rgpf.gd/index.php?option=com_content&view=category&id=1&Itemid=3
	Guatemala	2014	0.08	InSight Crime	https://www.insightcrime.org/news/analysis/report-puts-guatemala-national-police-under-the-microscope/
	Guyana	2010	0.38	International Security Sector Advisory Team	https://issat.dcaf.ch/mkd/Learn/Resource-Library/Country-Profiles/Guyana-Country-Profile
	Honduras	2016	0.14	InSight Crime	https://www.insightcrime.org/honduras-organized-crime-news/honduras/
	Iceland	2015	0.29	The National Commissioner of the Icelandic Police	http://www.logreglan.is/wp-content/uploads/2015/05/The-number-of-Police-officers-and-civilian-staff-in-Iceland-2015.pdf
	India	2018	0.14	Ministry of Home Affairs, Govt. of India	https://bprd.nic.in/content/62_1_DataonPoliceOrganizations.aspx
	Iraq	2020	0.11	International Security Sector Advisory Team	https://issat.dcaf.ch/mkd/Learn/Resource-Library/Country-Profiles/Iraq-SSR-Country-Background-Note
	Ireland	2020	0.30	International Criminal Police Organization	https://www.interpol.int/Who-we-are/Member-countries/Europe/IRELAND
	Israel	2018	0.32	Ministry of Public Security	https://www.police.gov.il/GraphSkifout.aspx?mid=67
	Italy	2020	0.50	Italian police	https://www.understandingitaly.com/italian-police.html
	Jamaica	2015	0.37	International Security Sector Advisory Team	https://issat.dcaf.ch/mkd/Learn/Resource-Library/Country-Profiles/Jamaica-Country-Profile
	Japan	2018	0.23	National Police Agency	https://www.npa.go.jp/english/Police_of_Japan/Police_of_Japan_2018_full_text.pdf

	Kazakhstan	2020	0.04	Interior ministry	https://eurasianet.org/kazakhstan-cuts-police-numbers-turns-to-public-for-help ; https://en.egemen.kz/article/221836-kazakhstan-to-reduce-the-number-of-police-officers
	Kenya	2017	0.07	Kenya government	http://www.capitalfm.co.ke/news/2017/03/kenya-beats-global-police-civilian-ratio/ ; https://www.interpol.int/Who-we-are/Member-countries/Africa/KENYA
	Latvia	2016	0.48	European Union	https://ec.europa.eu/eurostat/web/products-eurostat-news/-/DDN-20190104-1
	Lesotho	2012	0.09	Transformation Research Centre, Lesotho	https://web.archive.org/web/20130411202822/http://www.iss.co.za/pubs/books/hidden+seek/Lesotho.pdf
	Libya	2005	0.15	Library of Congress – Federal Research Division	https://www.loc.gov/rr/frd/cs/profiles/Libya-new.pdf
	Lithuania	2016	0.29	European Union	https://ec.europa.eu/eurostat/web/products-eurostat-news/-/DDN-20190104-1
	Luxembourg	2017	0.32	Internal Security Minister	https://delano.lu/d/detail/news/lux-police-numbers-reach-record-high/157654
	Macedonia	2017	0.58	Government report	http://www.finance.gov.mk/files/u6/Predlog-Budzet%20na%20RM%20za%202017_0.pdf
	Mali	2015	0.06	International Security Sector Advisory Team	https://issat.dcaf.ch/mkd/Learn/Resource-Library/Country-Profiles/Mali-SSR-Background-Note
	Mauritius	2013	0.94	Prime Minister’s Office- Mauritius Police Force	http://prb.pmo.govmu.org/English/Documents/PRB%20Reports/mpf.pdf
	Mexico	2012	0.33	International Security Sector Advisory Team	https://issat.dcaf.ch/mkd/Learn/Resource-Library/Country-Profiles/Mexico-Country-Profile
	Moldova	10500	0.05	Moldovan Ministry of Internal Affairs	https://polis.osce.org/country-profiles/moldova
	Montenegro	2020	0.80	Ministry of Internal Affairs	https://polis.osce.org/country-profiles/montenegro
	Morocco	2011	0.18	International Security Sector Advisory Team	https://issat.dcaf.ch/mkd/Learn/Resource-Library/Country-Profiles/Morocco-SSR-Snapshot
	Mozambique	2016	0.07	Nuvunga et al, 2016	https://issat.dcaf.ch/mkd/Learn/Resource-Library/Country-Profiles/Mozambique-Background-Note
	Netherlands	2018	0.29	Government of the Netherlands	https://www.rijksoverheid.nl/documenten/jaarverslagen/2019/05/15/nationale-politie-2018
	Nicaragua	2011	0.18	International Security Sector Advisory Team	https://issat.dcaf.ch/mkd/Learn/Resource-Library/Country-Profiles/Nicaragua-Country-Profile
	Nigeria	2016	0.18	Nigeria Police Force	https://www.npf.gov.ng/
	Norway	2020	0.33	Norwegian police	https://www.politiet.no/en/aktuelt-tall-og-fakta/tall-og-fakta/bemanning/

	Niue	2009	0.93	Parliament of Australia	https://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Foreign%20Affairs%20Defence%20and%20Trade/Completed%20inquiries/2008-10/swpacific/report2/c03
	Pakistan	2011	0.16	United States Institute of Peace	https://www.usip.org/sites/default/files/SR266-Reforming_Pakistan%E2%80%98s_Police_and_Law_Enforcement_Infrastructure.pdf
	Paraguay	2011	0.35	International Security Sector Advisory Team	https://issat.dcaf.ch/mkd/Learn/Resource-Library/Country-Profiles/Paraguay-Country-Profile
	Peru	2011	0.32	International Security Sector Advisory Team	https://issat.dcaf.ch/mkd/Learn/Resource-Library/Country-Profiles/Peru-Country-Profile
	Philippines	2017	0.16	Philippine National Police	http://newsinfo.inquirer.net/891499/170000-man-pnp-on-high-alert-for-asean-meet-in-manila
	Poland	2016	0.26	European Union	https://ec.europa.eu/eurostat/web/products-eurostat-news/-/DDN-20190104-1
	Portugal	2020	0.49	Public Security Police	https://polis.osce.org/country-profiles/portugal
	Romania	2016	0.24	European Union	https://ec.europa.eu/eurostat/web/products-eurostat-news/-/DDN-20190104-1
	Rwanda	2012	0.85	Rwanda National Police	https://police.gov.rw/about-rnp/organisational-structure/commissioner-general-services/directorate-gender-promotion
	Saint Vincent and the Grenadines	2015	0.90	International Security Sector Advisory Team	https://issat.dcaf.ch/Learn/Resource-Library2/Country-Profiles/Saint-Vincent-and-the-Grenadines-Country-Profile
	Serbia	2016	0.32	Ministry of Inter Affairs	https://en.wikipedia.org/wiki/Police_of_Serbia#cite_note-aug16n1-2
	Singapore	2018	0.17	Commercial Affairs Department	https://www.police.gov.sg/media-room/publications?filter=9BC92AE1F3FF452D9CECC3D03C7D5BCB
	Slovakia	2016	0.40	European Union	https://ec.europa.eu/eurostat/web/products-eurostat-news/-/DDN-20190104-1
	Slovenia	2016	0.38	European Union	https://ec.europa.eu/eurostat/web/products-eurostat-news/-/DDN-20190104-1
	Somalia	2012	0.04	United Nations	http://www.un.org/ga/search/view_doc.asp?symbol=S/2012/643
	South Africa	2019	0.09	South African Police Services	https://businesstech.co.za/news/government/325093/the-number-of-police-officers-vs-security-guards-in-south-africa/
	South Korea	2018	0.23	Statista	https://www.statista.com/statistics/644574/south-korea-police-officers-rate/

	South Sudan	2012	0.45	Human Security Baseline Assessment	http://www.smallarmssurveysudan.org/fileadmin/docs/issue-briefs/HSBA-IB-19-Arms-flows-and-holdings-South-Sudan.pdf
	Spain	2016	0.36	European Union	https://ec.europa.eu/eurostat/web/products-eurostat-news/-/DDN-20190104-1
	eSwatini	2010	0.34	ROYAL SWAZILAND POLICE SERVICE	https://web.archive.org/web/20130523182756/http://www.polic.e.gov.sz/rsp%20-%20annual%20report%202011.pdf
	Sweden	2016	0.21	European Union	https://ec.europa.eu/eurostat/web/products-eurostat-news/-/DDN-20190104-1
	Switzerland	2016	0.22	European Union	https://ec.europa.eu/eurostat/web/products-eurostat-news/-/DDN-20190104-1
	Thailand	2016	0.30	Thailand Development Research Institute	https://www.bangkokpost.com/opinion/opinion/874400/how-to-boost-confidence-in-the-police
	The Bahamas	2020	1.02	International Criminal Police Organization	https://www.interpol.int/Who-we-are/Member-countries/Americas/BAHAMAS
	Trinidad and Tobago	2020	0.50	International Criminal Police Organization	https://www.interpol.int/Who-we-are/Member-countries/Americas/TRINIDAD-TOBAGO
	Uganda	2020	0.08	Uganda Police Force	https://www.upf.go.ug/faq/
	Ukraine	2015	0.36	International Security Sector Advisory Team	https://issat.dcaf.ch/mkd/Learn/Resource-Library/Country-Profiles/Ukraine-SSR-Background-Note
	United Kingdom	2019	0.22	Home Office, England and Wales (2019); Police Service of Northern Ireland (2015); Scottish Government (2014)	https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/861800/police-workforce-sep19-hosb0220.pdf ; https://www.psn.police.uk/ ; https://www2.gov.scot/Topics/Statistics/Browse/Crime-Justice/PublicationPoliceStrength/POQS2014Q3/Publication
	United States	2018	0.29	U.S. Department of Justice	https://ucr.fbi.gov/crime-in-the-u.s/2018/crime-in-the-u.s.-2018/tables/table-74
	Uruguay	2013	0.78	International Security Sector Advisory Team	https://issat.dcaf.ch/mkd/Learn/Resource-Library/Country-Profiles/Uruguay-Country-Profile
	Venezuela	2015	0.34	International Security Sector Advisory Team	https://issat.dcaf.ch/mkd/Learn/Resource-Library/Country-Profiles/Venezuela-Country-Profile
From non-official statistics (n=49)	Angola	2020	0.03	Wikipedia	https://en.wikipedia.org/wiki/Angola#External_links
	Bangladesh	2018	0.16	Wikipedia	https://en.wikipedia.org/wiki/Bangladesh_Police#cite_note-1
	Cape Verde	2012	0.36	Wikipedia	https://en.wikipedia.org/wiki/Law_enforcement_in_Cape_Verde
	Comoros	2020	0.11	Wikipedia	https://en.wikipedia.org/wiki/Military_of_the_Comoros
	Croatia	2020	0.51	Wikipedia	https://en.wikipedia.org/wiki/Law_enforcement_in_Croatia#Regular_Police_(Temeljna_policija)

	Cuba	2015	0.38	GunPolicy.org	https://www.gunpolicy.org/firearms/region/cuba
	DR Congo	2020	0.17	Wikipedia	https://en.wikipedia.org/wiki/Congolese_National_Police
	Egypt	2020	0.49	Wikipedia	https://en.wikipedia.org/wiki/Egyptian_National_Police
	El Salvador	2020	0.52	Wikipedia	https://en.wikipedia.org/wiki/National_Civil_Police_of_El_Salvador
	Equatorial Guinea	2020	0.00	Wikipedia	https://en.wikipedia.org/wiki/Armed_Forces_of_Equatorial_Guinea
	Gabon	2009	0.09	Wikipedia	https://en.wikipedia.org/wiki/National_Gendarmerie_of_Gabon
	Georgia	2020	1.05	Wikipedia	https://en.wikipedia.org/wiki/Law_enforcement_in_Georgia_(country)
	Ghana	2011	0.11	Wikipedia	https://en.wikipedia.org/wiki/Ghana_Police_Service
	Guinea	2012	0.08	Wikipedia	https://en.wikipedia.org/wiki/List_of_countries_and_dependencies_by_number_of_police_officers#cite_note-2
	Haiti	2018	0.15	Wikipedia	https://en.wikipedia.org/wiki/Haitian_National_Police
	Hungary	2015	0.37	Wikipedia	https://en.wikipedia.org/wiki/List_of_countries_and_dependencies_by_number_of_police_officers#cite_note-2
	Indonesia	2020	0.22	Wikipedia	https://en.wikipedia.org/wiki/Indonesian_National_Police
	Iran	2012	0.07	Wikipedia	https://en.wikipedia.org/wiki/List_of_countries_and_dependencies_by_number_of_police_officers#cite_note-49
	Jordan	2020	0.49	Wikipedia	https://en.wikipedia.org/wiki/Law_enforcement_in_Jordan#cite_note-1
	Kiribati	2020	0.84	Wikipedia	https://en.wikipedia.org/wiki/Law_enforcement_in_Kiribati
	Kuwait	2012	0.42	Wikipedia	https://en.wikipedia.org/wiki/List_of_countries_and_dependencies_by_number_of_police_officers#cite_note-49
	Liberia	2012	0.08	Wikipedia	https://en.wikipedia.org/wiki/List_of_countries_and_dependencies_by_number_of_police_officers#cite_note-49
	Madagascar	2006	0.04	Wikipedia	https://en.wikipedia.org/wiki/Law_enforcement_in_Madagascar
	Malaysia	2018	0.40	Wikipedia	https://en.wikipedia.org/wiki/Royal_Malaysia_Police
	Maldives	2017	0.92	Wikipedia	https://en.wikipedia.org/wiki/Maldives_Police_Service
	Malta	2018	0.45	Wikipedia	https://en.wikipedia.org/wiki/The_Malta_Police_Force
	Myanmar	2013	0.17	Wikipedia	https://en.wikipedia.org/wiki/Myanmar_Police_Force
	Nepal	2020	0.23	Wikipedia	https://en.wikipedia.org/wiki/Nepal_Police#cite_note-1
	New Zealand	2016	0.25	Wikipedia	https://en.wikipedia.org/wiki/New_Zealand_Police

	Niger	2012	0.04	Wikipedia	https://en.wikipedia.org/wiki/List_of_countries_and_dependencies_by_number_of_police_officers#cite_note-74
	Panama	2019	0.49	Wikipedia	https://en.wikipedia.org/wiki/Panamanian_National_Police
	Papua New Guinea	2012	0.06	Wikipedia	https://en.wikipedia.org/wiki/List_of_countries_and_dependencies_by_number_of_police_officers#cite_note-USIP-81
	Russia	2016	0.52	Wikipedia	https://en.wikipedia.org/wiki/List_of_countries_and_dependencies_by_number_of_police_officers#cite_note-2
	Saint Lucia	2015	0.54	Wikipedia	https://en.wikipedia.org/wiki/Royal_Saint_Lucia_Police_Force
	Samoa	2019	0.51	Wikipedia	https://en.wikipedia.org/wiki/Law_enforcement_in_Samoa
	Sierra Leone	2019	0.16	Wikipedia	https://en.wikipedia.org/wiki/Sierra_Leone_Police
	Solomon Islands	2015	0.15	Wikipedia	https://en.wikipedia.org/wiki/Royal_Solomon_Islands_Police_Force
	Sri Lanka	2016	0.35	Wikipedia	https://en.wikipedia.org/wiki/Sri_Lanka_Police
	Syria	2016	0.16	Wikipedia	https://en.wikipedia.org/wiki/Law_enforcement_in_Syria#cite_note-Aid29Feb16-75
	The Gambia	2018	0.21	Wikipedia	https://en.wikipedia.org/wiki/The_Gambia_Police_Force
	Togo	2012	0.05	Wikipedia	https://en.wikipedia.org/wiki/Law_enforcement_in_Togo
	Tonga	2012	0.00	Wikipedia	https://en.wikipedia.org/wiki/List_of_countries_and_dependencies_by_number_of_police_officers#cite_note-106
	Tunisia	2017	0.13	Wikipedia	https://en.wikipedia.org/wiki/Tunisian_National_Guard
	Turkey	2012	0.49	Wikipedia	https://en.wikipedia.org/wiki/List_of_countries_and_dependencies_by_number_of_police_officers#cite_note-106
	Turkmenistan	2019	0.41	Wikipedia	https://en.wikipedia.org/wiki/Law_enforcement_in_Turkmenistan
	United Arab Emirates	2020	0.22	Wikipedia	https://en.wikipedia.org/wiki/Dubai_Police_Force ; https://en.wikipedia.org/wiki/Abu_Dhabi_Police ; https://en.wikipedia.org/wiki/United_Arab_Emirates
	Vanuatu	2012	0.33	Wikipedia	https://en.wikipedia.org/wiki/List_of_countries_and_dependencies_by_number_of_police_officers#cite_note-106
	Yemen	2008	0.50	Wikipedia	https://en.wikipedia.org/wiki/Law_enforcement_in_Yemen
	Zimbabwe	2018	0.30	Wikipedia	https://en.wikipedia.org/wiki/Zimbabwe_Republic_Police
Physicians	All	2013-2019	-	World Bank	https://data.worldbank.org/indicator/SH.MED.PHYS.ZS

Nursing and midwifery personnel	All	2017	-	World Health Organization	https://apps.who.int/gho/data/node.main.HWFRGP_0040?lang=en
Other occupational population	Afghanistan	2014	3.15	The Central Statistics Organization of Afghanistan	https://afghanistan.unfpa.org/sites/default/files/pub-pdf/UNFPA%20SDES%20Mono%20Labour%2028%20May%20for%20web.pdf
	Antigua and Barbuda†	2015	11.60	Statistics Division, Ministry of Finance and Corporate Governance	https://statistics.gov.ag/data/
	Armenia	2016	2.89	Statistical Committee of the Republic of Armenia	https://armstat.am/file/article/trud_2017_4.1.pdf
	Australia	2018	6.62	Organization for Economic Co-operation and Development	https://stats.oecd.org/index.aspx?queryid=3491
	Austria	2019	5.37	Organization for Economic Co-operation and Development	https://stats.oecd.org/index.aspx?queryid=3491
	Azerbaijan	2018	1.04	The State Statistical Committee of the Republic of Azerbaijan	https://www.ceicdata.com/en/azerbaijan/employment-annual-statistical-classification-of-economic-activities-rev-2
	Bahrain	2010	3.15	Central Bank of Bahrain	https://arabdevelopmentportal.com/sites/default/files/publication/706.statistical_bulletin_2013.pdf
	Barbados†	2004	1.74	The Manpower Research and Statistical Unit Ministry of Labour & Civil Service	https://www.ilo.org/wcmsp5/groups/public/---americas/---ro-lima/---sro-port_of_spain/documents/meetingdocument/wcms_306324.pdf
	Belarus†	2019	5.62	National Statistical Committee of the Republic of Belarus	https://www.belstat.gov.by/en/ofitsialnaya-statistika/Demographic-and-social-statistics/employment/
	Belgium	2019	4.01	Organization for Economic Co-operation and Development	https://stats.oecd.org/index.aspx?queryid=3491
	Benin	2013	2.41	The National Institute of Statistics and Economic Analysis	https://www.insae-bj.org/publications/publications-annuelles
	Bhutan	2018	1.58	The National Statistics Bureau	http://www.nsb.gov.bt/publication/publications.php?id=3
	Bolivia	2012	4.09	The Statistics National Institute	https://www.ine.gob.bo/index.php/estadisticas-economicas/pib-y-cuentas-nacionales/producto-interno-bruto-trimestral/producto-interno-bruto-por-actividad-economica/
	Bosnia and Herzegovina	2018	3.36	Agency for Statistics	http://www.bhas.ba/index.php?option=com_publicacija&view=publicacija_pregled&ids=1&id=2&n=Labour%20market
	Botswana†	2018	2.25	Statistics Botswana	http://www.statsbots.org.bw/statistics-botswana-2019-annual-report
	Brazil	2018	2.85	Organization for Economic Co-operation and Development	https://stats.oecd.org/index.aspx?queryid=3491

	Brunei	2018	5.72	Department of Economic Planning and Statistics	http://www.deps.gov.bn/SitePages/Labour%20Force.aspx
	Bulgaria	2018	5.61	National statistical institute	https://www.nsi.bg/en/content/8165/number-persons-employed
	Burkina Faso	2010	0.52	National Institute of Statistics and Demography	http://www.insd.bf/n/contenu/pub_periodiques/annuaire_stat/Annuaire_stat_nationaux_BF/Annuaire_Statistique_National_2018.pdf
	Burundi†	2018	0.00	Institute of Statistics and Economic Studies of Burundi	https://www.isteebu.bi/wp-content/uploads/2020/05/Annuaire-2018.pdf
	Cape Verde	2017	5.01	CABO VERDE NATIONAL STATISTIC INSTITUTE	http://ine.cv/quadros/estatisticas-emprego-mercado-trabalho-cv-imec2017/
	Cambodia	2008	1.38	National Institute of Statistics	https://www.nis.gov.kh/index.php/km/2-uncategorised/11-cambodia-socio-economic-survey-tables
	Canada	2016	5.81	Organization for Economic Co-operation and Development	https://stats.oecd.org/Index.aspx?datasetcode=SNA_TABLE3
	Chile	2019	3.80	Organization for Economic Co-operation and Development	https://stats.oecd.org/index.aspx?queryid=3491
	China*	2018	1.01	National Bureau of Statistics	http://data.stats.gov.cn/easyquery.htm?cn=C01
	Colombia	2019	2.07	Organization for Economic Co-operation and Development	https://stats.oecd.org/index.aspx?queryid=3491
	Comoros	2013	0.23	The National Institute of Statistics and Economic and Demographic Studies	http://www.inseed.km/index.php/publications/secteur-informel-et-emploi
	Costa Rica	2019	3.55	Organization for Economic Co-operation and Development	https://stats.oecd.org/index.aspx?queryid=3491
	Croatia	2011	5.39	Central Bureau of Statistics of the Republic of Croatia	https://www.dzs.hr/Hrv_Eng/publication/2014/SI-1527.pdf
	Cuba†	2012	5.46	National Statistics and Information Office	http://www.onei.gob.cu/node/14808
	Cyprus	2019	5.87	Statistical Service of Cyprus	https://www.mof.gov.cy/mof/cystat/statistics.nsf/labour_31main_en/labour_31main_en?OpenForm&sub=1&sel=2
	Czech Republic	2019	5.49	Organization for Economic Co-operation and Development	https://stats.oecd.org/index.aspx?queryid=3491
	DR Congo	2008	0.80	Ministry of Plan National Statistical Institute	http://ins.mkbco.pro/Publications/Publications-Annuelles/Annuaire/id/37/annuaire-statistiques
	Denmark	2019	4.34	Organization for Economic Co-operation and Development	https://stats.oecd.org/index.aspx?queryid=3491

	Dominican Republic†	2010	3.27	The National Statistical Office	https://www.one.gob.do/sociales/empleo-y-seguridad-social
	Ecuador	2010	3.17	National Institute of Statistics and Censuses	https://www.ecuadorencifras.gob.ec/documentos/web-inec/EMPLEO/2019/Septiembre/201909_Mercado_Laboral.pdf
	Egypt	2017	3.41	Central Agency for Public Mobilization and Statistics	http://www.capmas.gov.eg/Pages/StaticPages.aspx?page_id=5034
	El Salvador†	2007	2.63	The General Directorate of Statistics and Censuses	http://aplicaciones.digestyc.gob.sv/clasificadoresv2/Inicio/TipoClasificador?tipo=1
	Equatorial Guinea	2015	3.70	The National Statistics Institute of Equatorial Guinea	http://www.inege.gq/index.php/estadisticas/#
	Estonia	2019	5.88	Organization for Economic Co-operation and Development	https://stats.oecd.org/index.aspx?queryid=3491
	Fiji	2018	3.90	Fiji Bureau of Statistics	https://www.statsfiji.gov.fj/index.php/statistics/social-statistics/employment-statistics44
	Finland	2019	4.26	Organization for Economic Co-operation and Development	https://stats.oecd.org/index.aspx?queryid=3491
	France	2019	3.96	Organization for Economic Co-operation and Development	https://stats.oecd.org/index.aspx?queryid=3491
	Georgia†	2014	2.83	National Statistics Office of Georgia	https://www.geostat.ge/en/modules/categories/38/employment-and-unemployment
	Germany	2019	4.76	Organization for Economic Co-operation and Development	https://stats.oecd.org/index.aspx?queryid=3491
	Ghana	2017	2.60	The Ghana Statistical Service	https://www.statsghana.gov.gh/gssmain/fileUpload/pressrelease/GLSS7%20MAIN%20REPORT_FINAL.pdf
	Greece	2019	4.58	Organization for Economic Co-operation and Development	https://stats.oecd.org/index.aspx?queryid=3491
	Grenada	2015	11.92	Central Statistical Office from Grenada.	http://www.gov.gd/sites/default/files/docs/Documents/reports/Grenada_LFS_2013-2015.pdf
	Guinea	2019	1.17	The National Institute of Statistics	http://www.stat-guinee.org/index.php/publications-ins/91-rapports-d-enquetes
	Guinea-Bissau†	2009	0.35	Ministry of Economy and Finance	http://www.stat-guineebissau.com/publicacao/publicacao.htm
	Guyana	2019	2.82	The Bureau of Statistics	https://statisticsguyana.gov.gy/surveys/
	Hungary	2019	5.69	Organization for Economic Co-operation and Development	https://stats.oecd.org/index.aspx?queryid=3491
	Iceland	2019	6.83	Organization for Economic Co-operation and Development	https://stats.oecd.org/index.aspx?queryid=3491

	India	2014	0.02	The Ministry of Statistics and Programme Implementation	http://www.mospi.nic.in/statistical-year-book-india/2018/201
	Indonesia†	2010	1.94	Organization for Economic Co-operation and Development	https://stats.oecd.org/Index.aspx?datasetcode=SNA_TABLE3
	Iran†*	2012	6.29	The Iran Social Science Data Porta	https://irandataportal.syr.edu/labor-force
	Ireland	2019	5.55	Organization for Economic Co-operation and Development	https://stats.oecd.org/index.aspx?queryid=3491
	Israel	2019	3.84	Organization for Economic Co-operation and Development (OECD)	https://stats.oecd.org/index.aspx?queryid=3491
	Italy	2019	4.01	Organization for Economic Co-operation and Development (OECD)	https://stats.oecd.org/index.aspx?queryid=3491
	Jamaica†	2014	5.58	Statistical Institute of Jamaica	https://statinja.gov.jm/LabourForce/NewLFS.aspx
	Japan	2019	6.25	Organization for Economic Co-operation and Development (OECD)	https://stats.oecd.org/index.aspx?queryid=3491
	Kazakhstan†	2009	4.20	The Agency of Statistics of the Republic of Kazakhstan	https://www.ceicdata.com/en/kazakhstan/employment-by-industry-and-type
	Kenya	2018	1.62	Kenya National Bureau of Statistics	https://www.knbs.or.ke/?page_id=3142
	Kuwait†	2014	1.97	The Central Statistics Bureau	https://www.csb.gov.kw/Pages/Statistics_en?ID=64&ParentCatID=1
	Kyrgyzstan	2018	5.66	National Statistical Committee of the Kyrgyz Republic	http://www.stat.kg/en/statistics/zanyatost/
	Laos	2015	0.86	Ministry of Planning and Investment, Lao Statistics Bureau	https://www.ilo.org/surveyLib/index.php/catalog/2032/download/16711
	Latvia	2019	6.14	Organization for Economic Co-operation and Development	https://stats.oecd.org/index.aspx?queryid=3491
	Lebanon	2018	2.34	The Central Administration of Statistics	http://www.cas.gov.lb/index.php/all-publications-en
	Lesotho†	2011	1.07	Bureau of Statistics	http://www.bos.gov.ls/Publications.htm
	Liberia	2010	1.07	Liberian Institute of Statistics and Geo-Information Services	https://www.ilo.org/wcmsp5/groups/public/---dgreports/---stat/documents/presentation/wcms_156366.pdf
	Libya†	2006	1.59	Bureau of Statistics and Census Libya	http://bsc.ly/?P=5&sec_Id=7&dep_Id=6#82
	Lithuania	2019	5.95	Organization for Economic Co-operation and Development	https://stats.oecd.org/index.aspx?queryid=3491
	Luxembourg	2019	3.42	Organization for Economic Co-operation and Development	https://stats.oecd.org/index.aspx?queryid=3491

	Malawi	2017	0.20	The National Statistical Office of Malawi	http://www.nsomalawi.mw/
	Malaysia	2018	1.39	Ministry of Human Resources	https://dfms.ilmia.gov.my/#/dataview/5cbabcf11e326200123a6ce2
	Maldives	2014	10.61	National Bureau of Statistics	http://statisticsmaldives.gov.mv/hies-statistical-release-iii-employment/
	Malta	2011	6.33	Organization for Economic Co-operation and Development	https://stats.oecd.org/Index.aspx?datasetcode=SNA_TABLE3
	Mauritius	2014	3.54	Statistics Mauritius	http://statsmauritius.govmu.org/English/StatsbySubj/Pages/SEE-March-2014.aspx
	Mexico	2019	3.58	Organization for Economic Co-operation and Development	https://stats.oecd.org/index.aspx?queryid=3491
	Moldova	2014	1.70	Statistical Office of the Republic of Serbia	https://publikacije.stat.gov.rs/G2020/PdfE/G20201101.pdf
	Monaco	2019	26.25	Monaco Statistics	https://www.monacostatistics.mc/Population-and-employment/employment
	Mongolia	2018	3.88	NATIONAL STATISTICAL COMMITTEE	http://www.1212.mn/tables.aspx?tbl_id=DT_NS0_0400_067V1&Indicator_select_all=1&IndicatorSingleSelect=&YearY_select_all=0&YearYSingleSelect=_2018&viewtype=table
	Montenegro	2015	2.70	The Statistical Office of Montenegro	https://www.ilo.org/wcmsp5/groups/public/---ed_emp/documents/publication/wcms_537217.pdf
	Morocco†	2004	1.71	High Commission for Planning	https://www.hcp.ma/downloads/
	Myanmar	2014	3.45	Department of Population Ministry of Labour, Immigration and Population	https://myanmar.unfpa.org/sites/default/files/pub-pdf/4G_Labour%20Force.pdf
	Namibia	2018	4.53	Namibia Statistics Agency	https://nsa.org.na/page/central-data-catalogue/
	Nauru	2011	2.72	Population and Housing Census	https://microdata.pacificdata.org/index.php/catalog/26
	Nepal	2018	0.00	National Planning Commission Central Bureau of Statistics	https://nepalindata.com/media/resources/items/20/bNLFS-III_Final-Report.pdf
	Netherlands	2019	4.38	Organization for Economic Co-operation and Development	https://stats.oecd.org/index.aspx?queryid=3491
	New Zealand	2019	5.06	Organization for Economic Co-operation and Development	https://stats.oecd.org/index.aspx?queryid=3491
	Nicaragua†	2005	1.72	National Institute of Development Information	https://www.inide.gob.ni/Home/censoEcoUrbano
	Niger†	2012	0.10	National agency for the promotion of employment	http://www.stat-niger.org/statistique/
	Nigeria	2017	1.66	The National Bureau of Statistics	https://nigerianstat.gov.ng/elibrary

	Niue	2018	5.25	Census Report	https://pacific-data.sprep.org/dataset/niue-population-census
	North Korea	2008	0.61	Census Report	https://unstats.un.org/unsd/demographic/sources/census/wphc/North_Korea/Final%20national%20census%20report.pdf
	Norway	2019	4.32	Organization for Economic Co-operation and Development	https://stats.oecd.org/index.aspx?queryid=3491
	Pakistan	2017	2.34	Pakistan Bureau of Statistics	http://www.pbs.gov.pk/content/labour-force-statistics
	Palau	2015	8.84	Office of Planning and Statistics Bureau of Budget and Planning	https://www.palagov.pw/wp-content/uploads/2017/02/2015-Census-of-Population-Housing-Agriculture-.pdf
	Panama	2019	6.41	National Institute of Statistics and Census	https://www.inec.gob.pa/archivos/P0705547520191127130126Cuadro%207.pdf
	Papua New Guinea†	2001	0.15	National Statistical Office	https://www.nso.gov.pg/index.php/economics/business-statistics
	Peru	2007	4.01	Organization for Economic Co-operation and Development	https://stats.oecd.org/Index.aspx?datasetcode=SNA_TABLE3
	Philippines	2019	3.57	The Philippine Statistics Authority	https://www.psa.gov.ph/statistics/survey/labor-and-employment/labor-force-survey/table
	Poland	2019	4.17	Organization for Economic Co-operation and Development	https://stats.oecd.org/index.aspx?queryid=3491
	Portugal	2019	4.96	Organization for Economic Co-operation and Development	https://stats.oecd.org/index.aspx?queryid=3491
	Qatar	2010	2.36	Planning and Statistics Authority	https://www.psa.gov.qa/en/statistics/Statistical%20Releases/Social/LaborForce/2017/statistical_analysis_labor_force_2017_En.pdf
	Romania	2019	4.73	National Institute of Statistics	https://insse.ro/cms/sites/default/files/field/publicatii/forta_de_munca_in_romania_ocupare_si_somaj_2019.pdf
	Russia	2019	6.84	Organization for Economic Co-operation and Development	https://stats.oecd.org/index.aspx?queryid=3491
	Rwanda	2018	1.73	The National Institute of Statistics of Rwanda	https://www.statistics.gov.rw/datasource/labour-force-survey-2018
	Saint Lucia†	2010	7.81	Central Statistical Office	https://data.govt.lc/dataset/labour-force-statistics
	Saint Vincent and the Grenadines	2012	6.11	Statistical Office	http://stats.gov.vc/stats/?page_id=786
	Samoa	2017	3.06	Samoa Bureau of Statistics	https://www.sbs.gov.ws/digi/2017-Social%20Statistics-Samoa%20LFS%20Report%202017.pdf
	San Marino	2020	1.82	UFFICIO INFORMATICA, TECNOLOGIA, DATI e STATISTICA	https://www.statistica.sm/on-line/home.html
	Sao Tome and Principe†	2015	1.49	National Institute of Statistics	https://www.ine.st/index.php/publicacao/documentos/file/300-estimativa-de-emprego-por-sexo-segundo-profissao-e-sector-2000-2015

	Saudi Arabia	2010	2.38	General Authority for statistics	https://www.stats.gov.sa
	Senegal	2017	1.60	National Agency for Statistics and Demography	http://www.ansd.sn/index.php?option=com_ansd&view=titrepublication&id=71
	Serbia	2020	3.03	Statistical Office of the Republic of Serbia	https://publikacije.stat.gov.rs/G2020/PdfE/G20201101.pdf
	Seychelles	2010	12.16	The National Bureau of Statistics	https://www.nbs.gov.sc/downloads/social-statistics/unemployment-statistics/2018
	Sierra Leone†	2004	0.36	Statistics Sierra Leone	https://www.statistics.sl/index.php/census/census-2015.html
	Singapore	2020	14.10	MINISTRY OF MANPOWER	https://stats.mom.gov.sg/Pages/Employment-Distribution-and-Employment-Level-by-Industry.aspx
	Slovakia	2019	5.55	Organization for Economic Co-operation and Development	https://stats.oecd.org/index.aspx?queryid=3491
	Slovenia	2019	5.02	Organization for Economic Co-operation and Development	https://stats.oecd.org/index.aspx?queryid=3491
	Solomon Islands	2009	0.82	National Statistics Office	2009_Census_Report-on-Economic-activity-and-labour-force.pdf
	South Korea	2019	4.76	Organization for Economic Co-operation and Development	https://stats.oecd.org/index.aspx?queryid=3491
	Spain	2019	5.34	Organization for Economic Co-operation and Development	https://stats.oecd.org/index.aspx?queryid=3491
	Sri Lanka	2018	6.79	Sri Lanka Labour Force Survey Department of Census and Statistics	http://www.statistics.gov.lk/Pocket%20Book/chap03.pdf
	eSwatini †	2007	1.50	The Government of the Kingdom of Eswatini	http://www.gov.sz/index.php/component/content/article/124-economic-planning-a-development/1835-central-statistical-reports
	Sweden	2019	4.19	Organization for Economic Co-operation and Development	https://stats.oecd.org/Index.aspx?datasetcode=SNA_TABLE3
	Switzerland	2019	4.51	Organization for Economic Co-operation and Development	https://stats.oecd.org/index.aspx?queryid=3491
	Tajikistan	2016	1.62	The Agency on statistics under the President of the Republic of Tajikistan	http://oldstat.wv.tj/en/img/de8558ce74dda7d9d14c5f7b0cdea0a2_1518005366.pdf
	Tanzania	2016	0.50	The National Bureau of Statistics	https://www.nbs.go.tz/index.php/en/census-surveys/labour-statistics/145-formal-sector-employment-and-earnings-survey-2016-tanzania-mainland
	Thailand	2015	5.70	The National Statistical Office	http://www.nso.go.th/sites/2014en/Pages/survey/Social/Labour/The-Informal-Employment-Survey.aspx
	The Bahamas	2010	9.34	Department of Statistics	https://www.bahamas.gov.bs/

	The Gambia	2018	2.69	The Gambia Bureau of Statistics Office	https://microdata.worldbank.org/index.php/catalog/3584/download/47834
	Timor-Leste	2010	0.67	National Statistics Directorate	https://www.statistics.gov.tl/category/publications/census-publications/2010/
	Togo	2010	2.80	The National Institute of Statistics and Economic and Demographic Studies	https://inseed.tg/publications-sectorielles/
	Tonga	2018	1.81	Government of Tonga	2018-Labour-Force-Survey-Report.pdf
	Tunisia†	2004	3.11	The National Institute of Statistics	http://census.ins.tn/fr/resultats#horizontalTab4
	Turkey	2019	2.88	Organization for Economic Co-operation and Development	https://stats.oecd.org/index.aspx?queryid=3491
	Uganda	2002	0.50	UGANDA BUREAU OF STATISTICS	https://www.ubos.org/wp-content/uploads/publications/10_2018Report_national_labour_force_survey_2016_17.pdf
	United Kingdom	2019	4.75	Organization for Economic Co-operation and Development	https://stats.oecd.org/index.aspx?queryid=3491
	Ukraine	2019	3.71	State Statistics Service of Ukraine	https://ukrstat.org/en/operativ/operativ2014/rp/zn_ed/zn_ed_e/zn_ed_2013_e.htm
	United Arab Emirates	2018	0.67	United Arab Emirates Ministry of Economy	https://www.economy.gov.ae/EconomicalReportsEn/MOE_Annual%20Economic%20Report_2019_.pdf
	Uruguay	2018	5.07	National Statistics Institute	http://www.ine.gub.uy/documents/10181/623270/Anuario+Estadistico+2019/f854fb27-ad7f-4ce3-8c37-005ade0a6140
	United States	2019	0.40	Bureau of Economic Analysis	https://apps.bea.gov/iTable/iTable.cfm?reqid=19&step=2&isuri=1&1921=survey#
	Uzbekistan	2018	1.88	State Committee of the Republic of Uzbekistan on Statistics	https://stat.uz/en/181-ofytsyalnaia-statistyka-en/6384-labor-market
	Venezuela	2018	4.30	Statistics National Institute	https://ine.gov.ve/index.php?option=com_content&view=category&id=103&Itemid=40#
	Vietnam	2018	4.97	GENERAL STATISTICS OFFICE of VIETNAM	https://www.gso.gov.vn/default_en.aspx?tabid=774
	Yemen†	2016	0.18	Central Statistical Organisation	http://www.cso-yemen.com/content.php?lng=english&id=690
	Zambia	2010	0.79	Zambia Statistics Agency	https://www.zamstats.gov.zm/index.php/publications/category/7-labour
	Zimbabwe	2019	0.99	Zimbabwe National Statistics Agency	http://www.zimstat.co.zw/wp-content/uploads/publications/Economic/Employment/Labour-Force-Report-2019.pdf

Birth rate (per 1,000 people)	All	2018	-	World Bank	https://data.worldbank.org/indicator/SP.DYN.CBRT.IN
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†: The country combined communications, transportation and storage into the same section when counting the working population.

*: Data on number of essential workers in Hong Kong, Macao and Taiwan regions in China were not available.

Table. S2. Completeness analysis of data that included in this study

Goal	Study population	Definition	No. of observations (n=194)	Completeness
To maintain essential core societal services	Healthcare worker (i.e., physicians, nurses and midwiferies)	Health care personnel that working in health-care settings who have the potential for exposure to SARS-CoV-2 infected individuals and/or to infectious materials (e.g., body substances, contaminated medical supplies and equipment, contaminated environmental surfaces, or contaminated air)	194	100%
	Physicians	Measured as the density of physicians multiplied by the number of populations in each country.	194	100%
	Nurses and midwiferies	Measured as the density of nurses and midwiferies multiplied by the number of populations in each country.	194	100%
	Police and military personnel	Law enforcement personnel and military that protecting national security and stability, and experiencing potential greater risk of SARS-CoV-2 infections due to geographic location and crowded living or working conditions	150	77.3%
	Police officers	Measured as the number of police officers	149	76.8%
	Military size	Measured as the military size	194	100%
	Staff working in energy, food, and transportation sectors	Personnel engaging in electricity, gas, water, food, steam, air condition and accommodation supply; participating sewerage, waste management and remediation activities; involving in domestic transportation and storage	144	74.2%
	Personnel engaging in electricity, gas, water, steam, and air condition supply	Measured as the number of individuals electricity, gas, water, steam, and air condition supply.	150	77.3%
	Personnel engaging in food and accommodation supplies	Measured as the number of individuals engaging in food and accommodation supplies.	152	78.4%
	Personnel engaging in domestic transportation and storage	Measured as the number of individuals engaging in domestic transportation and storage.	144	74.2%
To reduce severe COVID-19 disease	Population at an increased risk of COVID-19 severe disease	Personnel experiencing an increased risk of severe/fatal COVID-19 disease	184	94.8%
	Personnel at an increased risk of COVID-19 severe disease due to age and underlying conditions.	Measured as the number of individuals at an increased risk of COVID-19 severe disease due to age and underlying conditions, provided by Clark A, et al.	184	94.8%
	Pregnant women	Measured as the birth rate (per 1,000 persons) multiplied by the number of populations in each country.	194	100%
To reduce symptomatic infections	Population without any risk of COVID-19 severe	Personnel without any risk of severe/fatal COVID-19 disease	194*	100%

and/or to stop virus transmission	disease			
	Personnel without any risk of severe COVID-19 disease	Measured as the number of individuals without any risk of COVID-19 severe disease, provided by Clark A, et al.	184	100%
	General population by age	Measured as the number of individuals at a given age group.	194	100%

*The number of individuals aged 0-59 years old was used as an approximation of the number of personnel without any risk of severe/fatal COVID-19 disease in 10 countries.

Table. S3. Observed number of persons for different target populations for COVID-19 vaccination

WHO region	Country	Total ^a	Maintaining essential core societal services ^a							Reducing severe COVID-19 disease ^a					Reducing symptomatic infections and/or to stop virus transmission ^a		
			Density of physician (person per 10,000 population)	Density of nurses and midwives (person per size 10,000 population)	Military	No. of in police officer	No. of personnel engaging electricity, gas, water, steam, air condition supply	No. of personnel engaging in domestic transportation and storage	No. of personnel engaging in food and accommodation supply	No. of people aged ≥60 with at least one underlying condition	No. of people aged ≥80 years without any underlying conditions	No. of people aged 60-79 years without any underlying conditions	No. of people aged <60 years with at least one underlying condition	Birth rate (person per 1,000 population)	No. of healthy adults (20-59 years)	No. school aged children (5-19 years) without any underlying conditions	No. of young children (0-4 years) without any underlying conditions
Africa																	
	Algeria	438.51	17.19	15.48	3.17	1.30	No data	No data	No data	30.17	0.94	12.33	62.76	24.28	134.67	107.87	48.85
	Angola	328.66	2.15	4.08	0.90	0.09	No data	No data	No data	8.05	0.15	3.83	38.10	40.73	75.61	123.40	56.39
	Benin	121.23	0.79	3.89	0.12	No data	0.05	1.43	1.44	3.99	0.10	2.07	13.83	36.22	32.76	42.40	18.58
	Botswana	23.52	5.27	54.03	0.09	0.10	0.15	0.20	0.17	1.23	0.02	0.40	5.18	24.82	5.54	7.03	2.68
	Burkina Faso	209.03	0.85	8.83	0.11	0.26	0.06	0.45	0.58	5.20	0.09	2.92	22.93	37.93	57.78	76.82	33.70
	Burundi	118.91	1.00	8.53	0.31	0.18	0.00	0.00	No data	2.95	0.07	1.83	12.31	39.01	33.48	43.04	19.99
	Cameroon	265.46	0.88	0.06	0.24	No data	No data	No data	No data	7.29	0.14	3.99	31.42	35.39	74.21	94.30	40.25
	Cape Verde	5.56	7.81	12.98	0.01	0.02	0.02	0.10	0.16	0.27	0.01	0.14	0.77	19.49	1.97	1.46	0.51
	Central African Republic	48.30	0.72	2.06	0.08	0.04	No data	No data	No data	1.46	0.03	0.67	6.09	35.35	11.12	18.47	7.14
	Chad	164.26	0.43	2.32	0.35	No data	No data	No data	No data	4.17	0.09	2.21	16.84	42.17	40.48	62.46	28.63
	Comoros	8.70	2.72	6.29	0.00	0.01	0.01	0.01	0.00	0.27	0.01	0.16	0.95	31.88	2.87	2.91	1.21
	Congo	55.18	1.65	6.27	0.12	No data	No data	No data	No data	1.70	0.03	0.77	7.42	32.86	12.28	19.23	7.99
	Côte d'Ivoire	263.78	2.31	6.05	0.25	No data	No data	No data	No data	7.98	0.13	4.24	31.87	35.74	69.04	92.30	40.37
	DR Congo	895.61	0.74	11.10	1.34	1.50	2.16	3.55	1.41	28.01	0.61	13.29	101.46	41.18	222.60	328.32	153.43
	Equatorial Guinea	14.03	4.02	5.02	0.01	0.00	0.13	0.26	0.13	0.37	0.01	0.16	2.13	33.24	4.28	4.14	1.94
	Eritrea	35.46	0.63	14.40	2.02	No data	No data	No data	No data	1.42	0.05	0.81	3.69	30.30	8.09	12.73	4.83
	eSwatini	11.60	3.29	41.42	0.03	0.04	0.03	0.11	0.04	0.53	0.01	0.12	2.80	26.34	2.25	3.89	1.40
	Ethiopia	1149.64	0.77	7.14	1.38	0.30	No data	No data	No data	35.94	1.31	23.97	111.06	32.34	354.45	401.23	164.21

Gabon	22.26	6.82	29.46	0.07	0.02	No data	No data	No data	0.83	0.02	0.35	3.19	31.61	6.37	6.68	3.13
Ghana	310.73	1.36	42.00	0.16	0.33	0.45	4.04	3.59	10.57	0.18	5.69	40.47	29.41	94.14	99.85	40.78
Guinea	131.33	0.83	1.24	0.13	0.10	0.10	1.37	0.07	3.94	0.08	2.16	14.35	36.36	35.86	47.97	20.40
Guinea-Bissau	19.68	1.27	6.85	0.04	No data	0.01	0.06	0.01	0.59	0.01	0.30	2.42	35.13	5.64	6.91	2.99
Kenya	537.71	1.57	11.66	0.29	0.40	1.41	3.88	3.41	13.86	0.29	8.22	70.71	28.75	163.68	186.71	68.68
Lesotho	21.42	0.69	32.57	0.02	0.02	0.03	0.16	0.04	1.25	0.02	0.34	5.16	26.81	5.19	6.08	2.46
Liberia	50.58	0.38	5.32	0.02	0.04	0.02	0.24	0.28	1.72	0.04	0.89	6.02	33.04	14.77	17.60	7.23
Madagascar	276.91	1.81	1.46	0.22	0.11	No data	No data	No data	8.52	0.24	5.12	29.79	32.66	83.42	95.00	40.07
Malawi	191.30	0.36	4.39	0.15	No data	0.08	0.14	0.15	5.20	0.11	2.51	27.59	34.12	50.74	69.76	28.24
Mali	202.51	1.29	3.59	0.18	0.13	No data	No data	No data	4.99	0.10	2.73	20.91	41.54	47.30	77.73	35.19
Mauritania	46.50	1.87	9.25	0.21	No data	No data	No data	No data	1.53	0.03	0.81	5.20	33.69	13.59	15.51	6.76
Mauritius	12.72	25.33	35.15	0.00	0.12	0.04	0.16	0.25	1.72	0.04	0.58	2.67	10.20	3.98	2.32	0.63
Mozambique	312.55	0.84	6.85	0.11	0.23	No data	No data	No data	8.99	0.21	4.50	47.27	37.52	75.58	113.73	49.69
Namibia	25.41	4.18	19.54	0.16	No data	0.07	0.25	0.83	1.02	0.02	0.38	4.46	28.64	6.18	7.96	3.29
Niger	242.07	0.43	2.70	0.10	0.09	0.08	0.12	0.05	6.21	0.11	3.63	23.89	46.08	56.56	93.50	46.49
Nigeria	2061.40	3.81	11.79	2.15	3.72	0.91	23.90	9.35	57.17	0.82	35.02	232.99	37.91	547.24	737.18	329.61
Rwanda	129.52	1.34	12.04	0.35	1.10	0.14	1.40	0.69	3.96	0.09	2.58	14.69	31.70	38.28	43.54	18.42
São Tomé and Príncipe	2.19	0.53	19.24	0.01	No data	0.00	0.02	0.01	0.07	0.00	0.04	0.26	31.54	0.59	0.80	0.31
Senegal	167.44	0.69	3.13	0.19	No data	0.08	1.60	0.99	5.25	0.11	2.70	18.13	34.52	46.84	60.04	25.65
Seychelles	0.98	21.21	80.77	0.01	No data	0.01	0.04	0.07	0.08	0.00	0.04	0.17	17.10	0.25	0.21	0.08
Sierra Leone	79.77	0.25	2.24	0.09	0.13	0.08	0.16	0.05	2.41	0.05	1.24	9.67	33.41	24.25	27.75	11.23
South Africa	593.09	9.05	13.08	0.80	0.51	No data	No data	No data	36.64	0.63	13.35	126.34	20.51	172.36	154.01	56.75
South Sudan	111.94	2.62	6.95	1.85	0.50	No data	No data	No data	3.64	0.10	2.03	12.02	35.01	30.34	39.27	16.68
Tanzania	597.34	0.14	5.84	1.10	No data	0.42	0.75	1.79	15.16	0.36	9.76	67.08	36.70	168.42	215.34	94.89
The Gambia	24.17	1.02	15.45	0.01	0.05	0.08	0.28	0.28	0.61	0.01	0.33	2.65	38.54	6.22	8.66	4.00
Togo	82.79	0.77	4.10	0.10	0.04	0.03	1.07	1.21	2.45	0.04	1.39	10.01	33.11	23.06	28.73	11.86
Uganda	457.41	1.68	12.38	0.46	0.37	0.14	1.25	0.88	9.16	0.19	5.41	53.97	38.14	117.17	174.54	75.78
Zambia	183.84	11.87	13.38	0.16	No data	0.15	0.91	0.39	4.09	0.09	2.11	26.10	36.19	45.66	68.46	28.59

Zimbabwe	148.63	2.10	19.35	0.51	0.45	0.23	0.84	0.41	5.03	0.10	1.76	25.14	30.68	34.66	54.15	20.47	
Americas																	
Antigua and Barbuda	0.98	29.56	45.17	0.00	0.01	0.01	0.03	0.07	0.09	0.00	0.05	0.15	15.33	0.27	0.20	0.07	
Argentina	451.96	39.90	26.00	1.05	3.50	No data	No data	No data	46.19	2.17	21.85	52.56	17.02	157.88	104.77	36.74	
Barbados	2.87	24.84	30.60	0.01	0.02	No data	0.05	No data	0.45	0.02	0.19	0.43	10.65	0.74	0.50	0.15	
Belize	3.98	11.23	23.41	0.02	0.01	No data	No data	No data	0.20	0.01	0.10	0.56	20.79	1.03	1.11	0.38	
Bolivia	116.73	15.90	15.59	0.71	0.31	0.10	2.72	1.96	7.51	0.42	4.17	12.48	21.75	38.71	33.20	11.54	
Brazil	2125.59	21.64	101.19	7.30	3.19	6.37	26.96	27.25	177.83	8.88	111.87	250.71	13.92	866.94	440.94	141.67	
Canada	377.42	23.11	99.44	0.72	0.69	1.77	8.31	11.84	60.22	3.10	30.64	40.98	10.10	133.60	57.62	19.52	
Chile	191.16	25.91	133.25	1.22	0.65	0.88	3.90	2.49	21.34	0.99	10.90	22.77	12.43	72.63	36.54	11.44	
Colombia	508.83	21.85	13.31	4.81	1.60	1.55	5.37	3.62	41.41	1.79	23.76	58.42	14.88	206.24	114.39	36.49	
Costa Rica	50.94	28.94	34.14	0.00	0.05	0.26	0.69	0.87	4.95	0.20	2.52	6.84	13.97	19.80	10.33	3.41	
Cuba	113.27	84.22	75.61	0.76	0.43	0.86	2.79	2.53	14.97	0.91	8.20	15.97	10.17	39.43	17.91	5.55	
Dominica	0.72	11.19	64.39	0.00	No data	0.00	0.01	0.02	No data	No data	No data	No data	15.00	0.36	0.23	0.07	
Dominican Republic	108.48	15.27	13.80	0.71	0.32	0.26	2.03	1.26	7.38	0.37	4.30	13.18	19.51	38.37	28.07	9.80	
Ecuador	176.43	20.37	25.06	0.41	0.42	0.39	3.01	2.20	11.65	0.59	7.17	19.39	19.72	65.35	45.29	16.28	
El Salvador	64.86	15.66	18.34	0.42	0.34	0.07	0.92	0.72	5.28	0.23	2.31	8.69	18.25	22.27	16.56	5.64	
Grenada	1.13	14.07	62.84	0.00	0.01	0.01	0.05	0.07	0.11	0.00	0.05	0.17	16.47	0.29	0.24	0.09	
Guatemala	179.16	3.55	0.74	0.43	0.14	No data	No data	No data	8.83	0.33	3.80	22.33	24.56	60.25	56.04	20.28	
Guyana	7.87	8.02	10.40	0.03	0.03	0.03	0.10	0.08	0.57	0.02	0.27	1.19	19.97	2.57	2.08	0.72	
Haiti	114.03	2.34	6.80	0.00	0.17	No data	No data	No data	5.84	0.18	2.80	15.58	24.35	39.74	33.94	12.20	
Honduras	99.05	3.09	7.36	0.23	0.14	No data	No data	No data	4.80	0.18	2.32	12.35	21.60	36.97	29.23	9.96	
Jamaica	29.61	13.06	8.07	0.04	0.11	0.08	0.76	0.81	2.66	0.11	1.16	4.45	16.10	9.99	6.66	2.24	
Mexico	1289.33	23.83	23.96	3.36	4.30	2.51	18.15	25.55	104.92	3.03	36.97	210.48	17.60	420.10	323.13	107.98	
Nicaragua	66.25	9.78	15.33	0.12	0.12	0.05	0.66	0.43	3.77	0.13	1.85	8.52	20.64	24.36	18.25	6.45	
Panama	43.15	15.69	30.74	0.00	0.21	0.16	1.49	1.12	3.43	0.16	1.70	5.52	18.98	13.85	10.69	3.82	
Paraguay	71.33	13.54	16.60	0.27	0.25	No data	No data	No data	4.57	0.17	2.32	8.38	20.57	26.41	19.33	6.85	
Peru	329.72	13.05	24.40	1.58	1.04	0.24	8.25	4.74	23.26	1.41	16.58	35.84	17.95	127.88	74.12	27.63	

Saint Kitts and Nevis	0.53	26.76	42.19	0.00	No data	0.00	0.01	0.02	No data	No data	No data	No data	13.00	0.28	0.11	0.03
Saint Lucia	1.84	6.41	31.55	0.00	0.01	0.01	0.05	0.09	0.18	0.01	0.08	0.29	12.00	0.65	0.34	0.11
Saint Vincent and the Grenadines	1.11	6.65	70.15	0.00	0.01	0.01	0.03	0.03	0.11	0.00	0.05	0.18	14.24	0.34	0.24	0.07
Suriname	5.87	12.10	27.57	0.02	No data	No data	No data	No data	0.42	0.01	0.20	0.90	18.54	2.05	1.47	0.51
The Bahamas	3.93	20.07	45.67	0.01	0.04	0.03	0.09	0.26	0.30	0.01	0.17	0.62	13.97	1.22	0.86	0.26
Trinidad and Tobago	13.99	41.68	40.93	0.04	0.07	No data	No data	No data	1.64	0.05	0.68	2.39	12.94	4.60	2.68	0.86
Uruguay	34.74	50.79	19.41	0.22	0.27	0.21	0.88	0.67	4.79	0.26	1.97	4.07	13.86	11.40	6.93	2.33
United States	3310.03	26.12	145.48	22.60	9.75	4.83	4.09	4.19	538.21	18.73	200.24	404.50	11.60	1211.22	603.36	193.10
Venezuela	284.36	0.19	9.42	3.51	0.97	0.56	11.68	No data	22.75	0.68	11.01	36.56	17.88	79.50	76.29	23.26

Eastern
Mediterranean

Afghanistan	389.28	2.78	1.76	3.23	1.57	0.37	11.91	No data	12.00	0.16	4.28	60.19	32.49	80.69	139.08	53.12
Bahrain	17.02	9.26	24.94	0.19	No data	0.01	0.17	0.36	0.65	0.01	0.25	2.98	13.99	8.28	2.78	1.05
Djibouti	9.88	2.24	7.29	0.13	No data	No data	No data	No data	0.46	0.01	0.26	1.30	21.47	3.79	2.64	0.97
Egypt	1023.34	4.52	19.26	8.36	5.00	5.75	17.71	11.48	60.28	1.14	22.75	160.09	26.38	292.62	287.37	121.36
Iran	839.93	15.84	4.43	8.73	0.60	2.64	20.25	29.95	58.77	1.53	26.16	122.06	18.78	299.62	177.87	74.28
Iraq	402.23	7.08	20.45	2.09	0.44	No data	No data	No data	14.77	0.28	5.50	54.01	29.08	118.51	131.94	52.09
Jordan	102.03	23.24	28.21	1.16	0.50	No data	No data	No data	4.44	0.10	1.67	14.39	21.98	31.85	31.55	10.22
Kuwait	42.71	26.46	74.15	0.25	0.18	0.01	0.54	0.29	1.78	0.02	0.99	7.77	13.94	18.90	8.13	2.82
Lebanon	68.25	21.04	16.74	0.80	No data	0.12	0.79	0.69	5.52	0.16	1.97	11.09	17.55	23.98	16.23	5.46
Libya	68.71	20.91	65.31	0.07	0.10	0.40	0.65	0.05	3.46	0.08	1.21	11.97	18.83	25.42	17.42	6.01
Morocco	369.11	7.31	13.89	2.46	0.65	0.38	3.91	2.03	30.45	0.70	12.60	57.36	18.94	128.78	89.89	32.12
Oman	51.07	20.03	41.97	0.47	No data	No data	No data	No data	1.54	0.03	0.60	8.14	19.19	24.52	8.64	4.39
Pakistan	2208.92	9.80	6.68	9.36	3.54	4.48	35.01	12.18	97.10	2.67	49.08	271.55	28.25	704.77	679.07	274.07
Qatar	28.81	24.85	72.63	0.22	No data	0.05	0.34	0.29	0.73	0.01	0.30	5.16	9.54	16.36	3.49	1.32
Saudi Arabia	348.14	26.12	54.76	2.52	No data	2.50	3.08	2.72	14.05	0.27	6.05	57.13	17.80	146.26	75.37	29.17
Somalia	158.93	0.23	1.12	0.20	0.06	No data	No data	No data	4.50	0.11	2.64	15.74	41.75	39.99	59.97	27.48
Sudan	438.49	2.62	6.95	1.24	0.50	No data	No data	No data	16.93	0.36	7.57	59.59	32.18	126.91	146.90	59.82

Syria	175.01	12.87	15.41	2.39	0.28	No data	No data	No data	8.91	0.24	4.03	24.72	23.69	62.77	47.51	18.47
Tunisia	118.19	13.03	25.14	0.48	0.15	1.03	1.59	1.06	10.81	0.33	4.73	17.25	17.56	43.23	25.26	9.74
United Arab Emirates	98.90	25.28	57.27	0.63	0.22	0.08	0.42	0.17	2.18	0.02	0.91	19.09	10.33	55.60	12.91	4.85
Yemen	298.26	5.25	7.85	0.44	1.50	0.29	0.24	0.00	9.18	0.18	4.48	38.69	30.45	96.20	98.74	38.87

Europe

Albania	28.78	12.16	36.50	0.09	0.10	No data	No data	No data	3.99	0.16	1.94	3.61	11.78	7.35	5.11	1.63
Andorra	0.77	33.33	40.13	0.00	No data	No data	No data	No data	No data	No data	No data	No data	7.20	0.49	0.13	0.03
Armenia	29.63	44.02	61.07	0.49	No data	0.29	0.33	0.23	3.84	0.14	1.49	4.71	13.99	9.73	5.63	2.02
Austria	90.06	51.70	2.63	0.21	0.29	0.45	2.08	2.31	15.82	0.79	6.51	11.76	9.70	31.45	12.62	4.42
Azerbaijan	101.39	34.46	64.34	0.82	No data	0.28	No data	0.78	8.02	0.21	3.57	16.60	14.00	38.95	21.24	8.14
Belarus	94.49	51.91	110.03	1.55	0.31	1.40	2.93	0.98	14.47	0.62	6.28	14.65	9.90	28.69	14.76	5.38
Belgium	115.90	30.71	194.61	0.32	0.38	0.66	2.62	1.36	20.15	1.09	8.43	14.43	10.30	37.16	19.24	6.25
Bosnia and Herzegovina	32.81	21.62	57.33	0.11	0.17	0.32	0.37	0.41	6.06	0.19	2.05	5.10	8.11	11.28	4.92	1.31
Bulgaria	69.48	40.33	48.16	0.31	0.24	0.65	1.74	1.51	14.05	0.52	5.02	10.01	8.90	21.27	9.85	3.07
Croatia	41.05	30.00	81.22	0.18	0.21	0.39	0.90	0.92	8.25	0.37	3.00	5.60	9.00	12.68	5.92	1.81
Cyprus	12.07	19.51	52.51	0.16	0.07	0.05	0.15	0.50	1.56	0.07	0.76	1.41	10.46	4.45	2.03	0.64
Czech Republic	107.09	41.21	83.96	0.22	0.41	1.08	3.23	1.56	20.63	0.66	6.72	15.94	10.70	32.94	15.71	5.50
Denmark	57.92	40.10	103.20	0.15	0.11	0.33	1.17	1.02	10.69	0.43	4.02	7.72	10.60	18.37	9.43	3.05
Estonia	13.27	44.83	111.56	0.06	0.04	0.06	0.45	0.28	2.57	0.12	0.87	2.03	10.90	3.71	2.05	0.68
Finland	55.41	38.12	147.37	0.25	0.07	0.24	1.26	0.87	10.69	0.55	4.82	6.71	8.60	17.05	8.80	2.60
France	652.74	32.67	114.71	3.07	1.72	4.20	13.11	8.55	111.96	7.62	55.62	67.97	11.30	211.72	114.56	35.64
Georgia	39.89	71.20	47.29	0.26	0.42	0.19	0.68	0.25	6.14	0.23	2.20	6.52	13.47	12.06	7.27	2.64
Germany	837.84	42.49	132.35	1.80	3.16	5.70	20.47	13.75	162.77	9.90	67.24	102.89	9.50	273.14	114.35	40.06
Greece	104.23	54.79	36.33	1.46	0.55	0.60	1.46	2.72	19.49	1.48	9.02	12.13	8.10	34.54	14.95	4.04
Hungary	96.60	34.08	69.16	0.40	0.36	0.90	2.84	1.75	18.85	0.64	6.35	14.12	9.60	30.15	13.77	4.55
Iceland	3.41	40.78	162.13	0.00	0.01	0.02	0.12	0.10	0.48	0.02	0.23	0.42	12.00	1.05	0.65	0.20
Ireland	49.38	33.13	161.00	0.09	0.15	0.25	0.87	1.62	6.54	0.26	2.90	6.62	12.50	15.52	9.92	3.08
Israel	86.56	46.25	3.30	1.78	0.28	0.29	1.45	1.58	9.23	0.46	4.55	8.49	20.80	26.18	21.67	8.36

Italy	604.62	39.77	57.40	3.47	3.00	3.41	10.17	10.69	116.28	8.72	55.42	69.40	7.30	209.14	81.71	22.92
Kazakhstan	187.77	39.80	72.94	0.71	0.08	2.51	5.37	No data	15.39	0.51	7.05	25.49	21.77	47.17	45.38	18.95
Kyrgyzstan	65.24	22.13	59.45	0.11	No data	0.31	1.95	1.43	3.26	0.10	1.92	8.32	27.10	20.07	18.00	7.46
Latvia	18.86	31.91	47.52	0.06	0.09	0.16	0.69	0.31	3.73	0.16	1.31	2.87	10.00	5.28	2.74	1.12
Lithuania	27.22	63.53	98.47	0.34	0.08	0.28	0.98	0.37	5.35	0.27	1.86	4.23	10.00	7.46	3.86	1.43
Luxembourg	6.26	30.09	121.74	0.02	0.02	No data	0.12	0.10	0.89	0.04	0.33	1.01	10.30	2.29	0.95	0.33
Malta	4.42	28.60	94.83	0.02	0.02	0.04	0.10	0.14	0.86	0.03	0.35	0.57	9.20	1.37	0.60	0.21
Moldova	40.34	32.07	49.24	0.07	0.02	0.15	0.38	0.16	5.05	0.16	2.41	6.87	10.10	16.14	6.20	1.99
Monaco	0.39	75.07	201.61	0.00	No data	0.05	0.02	0.08	No data	No data	No data	No data	5.90	0.13	0.04	0.01
Montenegro	6.28	27.56	52.29	0.12	0.05	0.04	0.13	No data	0.97	0.03	0.38	0.86	11.73	2.08	1.12	0.36
Netherlands	171.35	36.05	111.84	0.41	0.50	0.65	3.54	3.32	30.88	1.40	13.29	22.13	9.70	54.98	27.58	8.47
Macedonia	20.83	28.74	37.92	0.16	0.12	0.23	0.38	0.29	3.01	0.09	1.22	3.10	10.81	7.41	3.38	1.10
Norway	54.21	29.16	182.25	0.23	0.18	0.29	1.17	0.89	8.33	0.40	3.89	6.69	10.40	18.29	9.20	2.96
Poland	378.47	23.79	68.93	1.91	1.00	3.38	9.00	3.40	68.29	2.90	26.98	52.25	10.20	129.12	54.35	18.52
Portugal	101.97	51.24	69.75	0.52	0.50	0.56	2.00	2.50	20.38	1.18	8.38	14.26	8.50	31.61	14.03	3.94
Romania	192.38	29.81	73.89	1.26	0.47	1.98	4.92	2.19	34.09	1.58	14.23	26.12	9.60	62.92	29.53	9.25
Russia	1459.34	37.49	85.43	14.54	7.57	23.73	57.99	18.15	230.51	8.62	87.94	235.76	11.50	411.20	237.65	90.97
San Marino	0.34	61.09	82.07	0.00	No data	0.00	0.00	0.00	No data	No data	No data	No data	6.80	0.18	0.05	0.02
Serbia	87.37	31.13	60.86	0.32	0.28	0.60	1.21	0.83	15.98	0.51	5.64	12.07	9.20	30.19	14.00	4.14
Slovakia	54.60	34.16	3.19	0.16	0.22	0.47	1.58	0.98	8.85	0.29	3.60	8.02	10.60	18.84	8.02	2.79
Slovenia	20.79	30.86	99.75	0.07	0.08	0.20	0.48	0.36	3.99	0.19	1.59	2.80	9.40	6.59	2.97	1.00
Spain	467.55	38.72	57.30	1.96	1.68	2.26	8.74	13.97	78.57	5.53	38.70	58.60	7.90	162.93	67.08	19.36
Sweden	100.99	39.84	118.16	0.30	0.21	0.56	2.27	1.40	18.30	0.87	7.03	13.20	11.40	31.70	16.51	5.90
Switzerland	86.55	42.96	175.36	0.21	0.19	0.40	1.96	1.55	14.28	0.81	6.80	10.61	10.00	30.22	12.31	4.46
Tajikistan	95.38	21.03	47.53	0.17	No data	0.21	1.04	0.30	3.52	0.08	1.90	12.12	30.76	30.22	28.94	13.31
Turkey	843.39	18.49	27.11	5.12	4.13	2.08	9.28	12.96	77.07	2.36	30.78	123.46	16.03	299.66	195.25	63.87
Turkmenistan	60.31	22.25	44.27	0.42	0.25	No data	No data	No data	3.21	0.09	1.59	8.73	23.83	19.54	16.21	6.51
United Kingdom	678.86	28.12	81.72	1.48	1.49	4.06	12.42	15.75	111.35	5.73	48.60	86.37	11.00	225.11	113.06	38.51
Ukraine	437.34	29.92	66.61	2.97	1.59	3.18	9.99	3.04	71.13	3.06	29.21	72.20	8.70	145.97	66.25	20.73

	Uzbekistan	334.69	23.74	112.80	0.68	No data	No data	6.31	No data	18.39	0.44	8.88	50.19	23.30	102.63	84.07	33.74
South-East Asia																	
	Bangladesh	1646.89	5.81	4.12	2.21	2.56	No data	No data	No data	80.17	3.65	47.27	190.36	18.18	668.47	438.65	141.73
	Bhutan	7.72	4.24	18.52	0.06	No data	0.05	0.03	0.05	0.42	0.02	0.25	0.89	17.26	3.27	1.91	0.63
	India	13800.04	8.57	17.27	30.31	19.26	1.88	0.37	0.01	861.52	28.85	505.74	2108.30	17.86	5436.48	3426.54	1098.70
	Indonesia	2735.24	4.27	24.15	6.76	5.90	2.40	50.79	No data	177.28	4.71	93.26	429.48	18.07	996.92	677.88	231.68
	Maldives	5.41	45.63	64.28	0.05	0.05	0.03	0.13	0.41	0.19	0.01	0.11	0.78	14.20	2.22	0.93	0.35
	Myanmar	544.10	6.77	9.99	5.13	0.93	0.71	8.18	9.86	35.91	0.78	17.74	88.24	17.55	184.47	137.69	44.00
	Nepal	291.37	7.49	31.08	1.12	0.67	0.00	0.00	0.00	16.04	0.45	8.72	34.97	19.89	111.63	84.47	26.36
	North Korea	257.79	36.83	44.49	18.80	No data	0.44	0.76	0.37	24.93	0.92	12.98	42.53	13.89	83.33	50.04	17.01
	Sri Lanka	214.13	10.04	21.80	3.17	0.76	7.13	5.02	2.38	23.38	0.67	11.15	31.84	15.83	59.37	48.93	16.27
	Thailand	698.00	8.05	27.59	4.55	2.11	1.70	12.23	25.85	81.38	4.37	48.38	110.51	10.34	244.44	117.77	35.01
	Timor-Leste	13.18	7.22	16.68	0.02	No data	0.00	0.06	0.02	0.56	0.02	0.29	1.65	29.42	4.04	4.37	1.73
Western Pacific																	
	Australia	255.00	36.78	125.51	0.58	0.55	1.54	6.43	8.91	35.02	1.99	18.52	26.28	12.60	85.39	46.10	16.34
	Brunei	4.37	16.09	58.97	0.08	0.04	0.03	0.05	0.17	0.28	0.01	0.13	0.73	14.90	1.48	0.96	0.31
	Cambodia	167.19	1.93	6.86	1.91	0.64	0.16	1.55	0.60	7.81	0.20	4.64	22.98	22.46	59.24	46.26	17.30
	China	14393.24	19.80	26.62	26.95	20.00	36.92	81.90	26.98	1402.43	70.37	1024.96	2114.19	10.90	6104.69	2445.00	815.15
	Cook Islands	0.18	14.12	67.43	0.00	No data	No data	No data	No data	No data	No data	No data	No data	13.70	0.05	0.02	0.01
	Federated States of Micronesia	1.15	0.26	20.43	0.00	No data	No data	No data	No data	0.07	0.00	0.02	0.24	22.82	0.30	0.33	0.12
	Fiji	8.96	8.60	33.75	0.04	0.04	0.04	0.13	0.18	0.69	0.01	0.16	2.08	21.28	2.17	2.32	0.87
	Japan	1264.76	24.12	121.53	2.61	2.88	6.00	36.60	36.40	275.31	24.05	134.76	146.92	7.40	364.56	160.35	46.55
	Kiribati	1.19	2.04	38.34	0.00	0.01	No data	No data	No data	0.06	0.00	0.02	0.27	27.89	0.23	0.36	0.15
	Laos	72.76	3.73	9.52	0.03	No data	0.13	0.28	0.21	3.22	0.08	1.65	10.41	23.55	25.86	21.32	7.76
	Malaysia	323.66	15.36	34.68	1.36	1.30	0.65	1.96	1.88	22.67	0.73	12.08	49.29	16.75	125.69	73.10	25.88
	Marshall Islands	0.59	4.23	33.39	0.00	No data	No data	No data	No data	No data	No data	No data	No data	23.80	0.39	0.25	0.09
	Mongolia	32.78	28.59	38.94	0.18	No data	0.21	0.70	0.36	1.52	0.04	0.83	4.47	24.13	11.42	8.34	3.70

Nauru	0.11	13.46	76.64	0.00	No data	0.00	0.00	0.00	No data	No data	No data	No data	23.20	0.05	0.03	0.01
New Zealand	48.22	35.90	124.48	0.09	0.12	0.22	1.00	1.22	6.69	0.35	3.67	4.92	11.98	16.56	9.08	2.95
Niue	0.02	0.29	125.00	0.00	0.00	0.00	0.00	0.00	No data	No data	No data	No data	9.00	0.01	0.00	0.00
Palau	0.18	14.21	72.63	0.00	No data	0.00	0.00	0.01	No data	No data	No data	No data	14.00	0.13	0.05	0.01
Papua New Guinea	89.47	0.70	4.55	0.04	0.05	0.02	0.12	No data	3.95	0.05	1.37	17.31	27.07	25.67	27.73	10.69
Philippines	1095.81	6.00	49.35	1.53	1.70	1.10	25.83	12.24	62.84	1.67	29.82	162.55	20.55	352.25	312.41	103.30
Samoa	1.98	3.45	24.89	0.00	0.01	0.01	0.02	0.03	0.12	0.00	0.04	0.33	24.38	0.49	0.63	0.26
Singapore	58.50	22.94	62.43	0.81	0.10	2.55	2.62	3.07	7.14	0.29	4.82	8.70	8.80	17.83	7.03	2.54
Solomon Islands	6.87	1.94	21.64	0.00	0.01	0.00	0.04	0.01	0.28	0.01	0.10	1.16	32.44	1.74	2.28	1.00
South Korea	512.69	23.61	73.01	36.80	1.18	1.93	8.23	14.25	72.75	3.95	42.01	72.31	6.40	164.59	67.85	18.61
Tonga	1.06	5.40	41.57	0.00	0.00	0.00	0.01	0.01	0.07	0.00	0.02	0.20	24.30	0.26	0.34	0.12
Tuvalu	0.12	9.11	42.59	0.00	No data	No data	No data	No data	No data	No data	No data	No data	23.70	0.06	0.03	0.01
Vanuatu	3.07	1.65	14.25	0.00	0.01	No data	No data	No data	0.13	0.00	0.04	0.55	29.60	0.77	0.99	0.41
Vietnam	973.39	8.28	14.46	5.48	No data	3.15	17.74	27.53	75.93	3.70	40.25	144.90	16.75	354.06	204.65	77.48

^aUnit used in this table is 0.1 millions people if not specified.

Table. S4. Estimates of target population sizes for COVID-19 vaccination on a national scale, using multiple imputation procedure and bootstrap method for missing data on the number of essential workers who ensure basic life needs.

WHO region	Country	Total	Maintaining essential core societal services (100,000; mean, 95%CI)			Reducing severe COVID-19 disease (100,000)				Reducing symptomatic infections and/or to stop virus transmission (100,000; mean, 95%CI)			Total no. of potential vaccine recipients, excluding SARS-CoV- 2 infected individuals	
			Healthcare worker	Police and military	Other essential workers	People aged ≥60 years with at least one underlying condition	People aged ≥80 without any underlying conditions	People aged 60- 79 years without any underlying conditions	People aged <60 years with at least one underlying condition	Pregnant women	Healthy adults (20-59 years)	School aged children and young people (5- 19 years) without any underlying conditions		Young children (0-4 years) without any underlying conditions
Africa	Subtotal	11201.63	14.42	32.48	206.95(144.04,290.53)	357.66	7.89	189.88	1374.93	390.55	3042.46(2958.82,3105.33)	3901.99	1682.45	11126.02
	Algeria	438.51	1.43	4.47	6.62(2.6,11.26)	30.17	0.94	12.33	62.76	10.65	152.43(147.79,156.44)	107.87	48.85	437.91
	Angola	328.66	0.20	0.99	15.75(7.6,28.23)	8.05	0.15	3.83	38.10	13.39	68.42(55.93,76.56)	123.40	56.39	328.54
	Benin	121.23	0.06	0.12	2.93	3.99	0.10	2.07	13.83	4.39	32.76	42.40	18.58	121.20
	Botswana	23.52	0.14	0.19	0.53	1.23	0.02	0.40	5.18	0.58	5.54	7.03	2.68	23.44
	Burkina Faso	209.03	0.20	0.37	1.09	5.20	0.09	2.92	22.93	7.93	57.78	76.82	33.70	209.01
	Burundi	118.91	0.11	0.49	0.03(0.01,0.04)	2.95	0.07	1.83	12.31	4.64	33.46(33.44,33.48)	43.04	19.99	118.90
	Cameroon	265.46	0.02	0.24	6.59(1.41,12.02)	7.29	0.14	3.99	31.42	9.39	71.83(66.4,77.01)	94.30	40.25	265.24
	Cape Verde	5.56	0.01	0.03	0.28	0.27	0.01	0.14	0.77	0.11	1.97	1.46	0.51	5.47
	Central African Republic	48.30	0.01	0.12	0.46(0.1,0.98)	1.46	0.03	0.67	6.09	1.71	12.15(11.62,12.5)	18.47	7.14	48.25
	Chad	164.26	0.05	0.35	1.55(0.68,2.45)	4.17	0.09	2.21	16.84	6.93	40.99(40.09,41.86)	62.46	28.63	164.24
	Comoros	8.70	0.01	0.01	0.02	0.27	0.01	0.16	0.95	0.28	2.87	2.91	1.21	8.69
	Congo	55.18	0.04	0.12	1.2(0.73,1.77)	1.70	0.03	0.77	7.42	1.81	14.87(14.3,15.34)	19.23	7.99	55.13
	Cote d'Ivoire	263.78	0.22	0.25	4.89(1.83,8.93)	7.98	0.13	4.24	31.87	9.43	72.09(68.05,75.15)	92.30	40.37	263.57
	Democratic Republic of the Congo	895.61	1.06	2.84	7.13	28.01	0.61	13.29	101.46	36.88	222.60	328.32	153.43	895.50
	Equatorial Guinea	14.03	0.01	0.01	0.52	0.37	0.01	0.16	2.13	0.47	4.28	4.14	1.94	13.98
	Eritrea	35.46	0.05	2.02	1.03(0.4,1.75)	1.42	0.05	0.81	3.69	1.07	7.76(7.04,8.39)	12.73	4.83	35.46

Ethiopia	1149.64	0.91	1.68	23.41(5.84,47.62)	35.94	1.31	23.97	111.06	37.18	348.73(324.52,366.31)	401.23	164.21	1086.56
Gabon	22.26	0.08	0.09	0.96(0.36,1.67)	0.83	0.02	0.35	3.19	0.70	6.22(5.51,6.82)	6.68	3.13	22.17
Ghana	310.73	1.35	0.49	8.08	10.57	0.18	5.69	40.47	9.14	94.14	99.85	40.78	310.24
Guinea	131.33	0.03	0.23	1.54	3.94	0.08	2.16	14.35	4.78	35.86	47.97	20.40	131.20
Guinea-Bissau	19.68	0.02	0.04	0.07	0.59	0.01	0.30	2.42	0.69	5.64	6.91	2.99	19.66
Kenya	537.71	0.71	0.69	8.70	13.86	0.29	8.22	70.71	15.46	163.68	186.71	68.68	537.09
Lesotho	21.42	0.07	0.04	0.23	1.25	0.02	0.34	5.16	0.57	5.19	6.08	2.46	21.40
Liberia	50.58	0.03	0.06	0.54	1.72	0.04	0.89	6.02	1.67	14.77	17.60	7.23	50.56
Madagascar	276.91	0.09	0.33	2.1(0.59,4.18)	8.52	0.24	5.12	29.79	9.04	86.61(84.53,88.12)	95.00	40.07	276.74
Malawi	191.30	0.09	0.15	0.37	5.20	0.11	2.51	27.59	6.53	50.74	69.76	28.24	191.24
Mali	202.51	0.10	0.31	2.84(0.76,5.74)	4.99	0.10	2.73	20.91	8.41	49.19(46.29,51.27)	77.73	35.19	202.47
Mauritania	46.50	0.05	0.21	1.41(0.64,2.42)	1.53	0.03	0.81	5.20	1.57	13.42(12.4,14.18)	15.51	6.76	46.42
Mauritius	12.72	0.08	0.12	0.45	1.72	0.04	0.58	2.67	0.13	3.98	2.32	0.63	12.71
Mozambique	312.55	0.24	0.34	2.21(0.54,4.73)	8.99	0.21	4.50	47.27	11.73	73.66(71.14,75.33)	113.73	49.69	312.42
Namibia	25.41	0.06	0.16	1.15	1.02	0.02	0.38	4.46	0.73	6.18	7.96	3.29	25.28
Niger	242.07	0.08	0.19	0.25	6.21	0.11	3.63	23.89	11.15	56.56	93.50	46.49	242.05
Nigeria	2061.40	3.22	5.87	34.15	57.17	0.82	35.02	232.99	78.14	547.24	737.18	329.61	2060.75
Rwanda	129.52	0.17	1.45	2.24	3.96	0.09	2.58	14.69	4.11	38.28	43.54	18.42	129.47
Sao Tome and Principe	2.19	0.00	0.01	0.03	0.07	0.00	0.04	0.26	0.07	0.59	0.80	0.31	2.18
Senegal	167.44	0.06	0.19	2.67	5.25	0.11	2.70	18.13	5.78	46.84	60.04	25.65	167.28
Seychelles	0.98	0.01	0.01	0.12	0.08	0.00	0.04	0.17	0.02	0.25	0.21	0.08	0.98
Sierra Leone	79.77	0.02	0.22	0.29	2.41	0.05	1.24	9.67	2.66	24.25	27.75	11.23	79.75
South Africa	593.09	1.31	1.31	15.2(5.67,27.37)	36.64	0.63	13.35	126.34	12.16	175.38(163.2,184.9)	154.01	56.75	585.71
South Sudan	111.94	0.11	2.35	1.09(0.17,2.43)	3.64	0.10	2.03	12.02	3.92	30.74(29.39,31.66)	39.27	16.68	111.91
Swaziland	11.60	0.05	0.07	0.17	0.53	0.01	0.12	2.80	0.31	2.25	3.89	1.40	11.54
Tanzania	597.34	0.36	1.10	22.74(19.62,26.89)	15.16	0.36	9.76	67.08	21.92	148.64(144.49,151.76)	215.34	94.89	597.34
The Gambia	24.17	0.04	0.06	0.65	0.61	0.01	0.33	2.65	0.93	6.22	8.66	4.00	24.13
Togo	82.79	0.04	0.14	2.32	2.45	0.04	1.39	10.01	2.74	23.06	28.73	11.86	82.76

	Uganda	457.41	0.64	0.83	17.41(15.03,20.59)	9.16	0.19	5.41	53.97	17.44	102.03(98.85,104.41)	174.54	75.78	457.27
	Zambia	183.84	0.46	0.16	1.46	4.09	0.09	2.11	26.10	6.65	45.66	68.46	28.59	183.67
	Zimbabwe	148.63	0.32	0.96	1.48	5.03	0.10	1.76	25.14	4.56	34.66	54.15	20.47	148.54
Americas	Subtotal	10181.19108.83	79.78		256.13(230.61,286.33)	1130.63	45.16	512.35	1277.47	148.97	3730.76(3700.56,3756.3)	2173.64	717.50	9567.54
	Antigua and Barbuda	0.98	0.01	0.01	0.11	0.09	0.00	0.05	0.15	0.02	0.27	0.20	0.07	0.98
	Argentina	451.96	2.98	4.55	15.28(7.61,22.68)	46.19	2.17	21.85	52.56	7.69	157.18(149.78,164.85)	104.77	36.74	439.59
	Barbados	2.87	0.02	0.03	0.21(0.12,0.3)	0.45	0.02	0.19	0.43	0.03	0.86(0.76,0.95)	0.50	0.15	2.87
	Belize	3.98	0.01	0.03	0.12(0.04,0.21)	0.20	0.01	0.10	0.56	0.08	1.38(1.29,1.46)	1.11	0.38	3.94
	Bolivia	116.73	0.37	1.02	4.78	7.51	0.42	4.17	12.48	2.54	38.71	33.20	11.54	115.31
	Brazil	2125.59	26.11	10.49	60.57	177.83	8.88	111.87	250.71	29.60	866.94	440.94	141.67	1920.27
	Canada	377.42	4.63	1.41	21.91	60.22	3.10	30.64	40.98	3.81	133.60	57.62	19.52	374.82
	Chile	191.16	3.04	1.87	7.27	21.34	0.99	10.90	22.77	2.38	72.63	36.54	11.44	185.95
	Colombia	508.83	1.79	6.41	10.55	41.41	1.79	23.76	58.42	7.57	206.24	114.39	36.49	497.46
	Costa Rica	50.94	0.32	0.05	1.81	4.95	0.20	2.52	6.84	0.71	19.80	10.33	3.41	49.78
	Cuba	113.27	1.81	1.19	6.18	14.97	0.91	8.20	15.97	1.15	39.43	17.91	5.55	113.19
	Dominica	0.68	0.01	0.00	0.04	0.00	0.00	0.03	0.01	0.01	0.30	0.22	0.07	0.68
	Dominican Republic	108.48	0.32	1.03	3.55	7.38	0.37	4.30	13.18	2.12	38.37	28.07	9.80	101.21
	Ecuador	176.43	0.80	0.83	5.60	11.65	0.59	7.17	19.39	3.48	65.35	45.29	16.28	97.58
	El Salvador	64.86	0.22	0.76	1.70	5.28	0.23	2.31	8.69	1.18	22.27	16.56	5.64	64.51
	Grenada	1.13	0.01	0.01	0.13	0.11	0.00	0.05	0.17	0.02	0.29	0.24	0.09	1.12
	Guatemala	179.16	0.08	0.57	4.46(2.95,5.87)	8.83	0.33	3.80	22.33	4.40	58.04(56.63,59.56)	56.04	20.28	178.04
	Guyana	7.87	0.01	0.06	0.22	0.57	0.02	0.27	1.19	0.16	2.57	2.08	0.72	7.82
	Haiti	114.03	0.10	0.17	4.46(1.62,8.79)	5.84	0.18	2.80	15.58	2.78	35.97(31.64,38.81)	33.94	12.20	113.93
	Honduras	99.05	0.10	0.37	1.49(0.57,2.66)	4.80	0.18	2.32	12.35	2.14	36.11(34.94,37.03)	29.23	9.96	98.05
	Jamaica	29.61	0.06	0.15	1.65	2.66	0.11	1.16	4.45	0.48	9.99	6.66	2.24	29.52
	Mexico	1289.33	6.16	7.66	49.07(42.36,58.04)	104.92	3.03	36.97	210.48	22.69	417.23(408.26,423.95)	323.13	107.98	1279.71
	Nicaragua	66.25	0.17	0.24	1.14	3.77	0.13	1.85	8.52	1.37	24.36	18.25	6.45	66.20
	Panama	43.15	0.20	0.21	2.77	3.43	0.16	1.70	5.52	0.82	13.85	10.69	3.82	41.76

	Paraguay	71.33	0.22	0.52	2.71(2.34,3.21)	4.57	0.17	2.32	8.38	1.47	24.79(24.29,25.16)	19.33	6.85	70.66
	Peru	329.72	1.23	2.62	13.24	23.26	1.41	16.58	35.84	5.92	127.88	74.12	27.63	320.52
	Saint Kitts and Nevis	0.51	0.00	0.00	0.04	0.00	0.01	0.07	0.01	0.01	0.23	0.11	0.03	0.51
	Saint Lucia	1.84	0.01	0.01	0.14	0.18	0.01	0.08	0.29	0.02	0.65	0.34	0.11	1.84
	Saint Vincent and the Grenadines	1.11	0.01	0.01	0.07	0.11	0.00	0.05	0.18	0.02	0.34	0.24	0.07	1.11
	Suriname	5.87	0.02	0.02	0.62(0.16,1.1)	0.42	0.01	0.20	0.90	0.11	1.58(1.1,2.04)	1.47	0.51	5.81
	The Bahamas	3.93	0.03	0.05	0.37	0.30	0.01	0.17	0.62	0.05	1.22	0.86	0.26	3.86
	Trinidad and Tobago	13.99	0.12	0.11	0.8(0.16,1.84)	1.64	0.05	0.68	2.39	0.18	4.49(3.45,5.13)	2.68	0.86	13.94
	United States	3310.03	56.80	32.35	13.11	538.21	18.73	200.24	404.50	38.40	1211.22	603.36	193.10	3046.89
	Uruguay	34.74	0.24	0.49	1.76	4.79	0.26	1.97	4.07	0.48	11.40	6.93	2.33	34.70
	Venezuela	284.36	0.82	4.48	18.2(13.97,22.92)	22.75	0.68	11.01	36.56	5.08	85.22(80.51,89.45)	76.29	23.26	283.41
Eastern Mediterranean	Subtotal	7257.21	17.72	60.71	240.14(199.35,295.68)	358.51	8.41	158.03	1020.27	186.81	2316.26(2260.74,2357.06)	2062.76	827.68	6725.50
	Afghanistan	389.28	0.18	4.80	22.42(16.56,30.44)	12.00	0.16	4.28	60.19	12.65	80.41(72.39,86.26)	139.08	53.12	266.24
	Bahrain	17.02	0.06	0.19	0.54	0.65	0.01	0.25	2.98	0.24	8.28	2.78	1.05	16.18
	Djibouti	9.88	0.01	0.13	0.3(0.08,0.64)	0.46	0.01	0.26	1.30	0.21	3.58(3.25,3.8)	2.64	0.97	9.82
	Egypt	1023.34	2.43	13.36	34.95	60.28	1.14	22.75	160.09	26.99	292.62	287.37	121.36	1022.25
	Iran	839.93	1.70	9.33	52.84	58.77	1.53	26.16	122.06	15.78	299.62	177.87	74.28	658.40
	Iraq	402.23	1.11	2.53	19.17(6.94,33.11)	14.77	0.28	5.50	54.01	11.69	109.15(95.21,121.38)	131.94	52.09	397.24
	Jordan	102.03	0.52	1.66	2.64(1.17,4.4)	4.44	0.10	1.67	14.39	2.24	32.59(30.84,34.07)	31.55	10.22	100.94
	Kuwait	42.71	0.43	0.43	0.84	1.78	0.02	0.99	7.77	0.60	18.90	8.13	2.82	41.39
	Lebanon	68.25	0.26	0.80	1.60	5.52	0.16	1.97	11.09	1.20	23.98	16.23	5.46	67.31
	Libya	68.71	0.59	0.17	2.62(2.26,3.09)	3.46	0.08	1.21	11.97	1.29	23.89(23.41,24.25)	17.42	6.01	65.15
	Morocco	369.11	0.78	3.11	6.32	30.45	0.70	12.60	57.36	6.99	128.78	89.89	32.12	366.54
	Oman	51.07	0.32	0.47	3.79(1.26,6.59)	1.54	0.03	0.60	8.14	0.98	22.17(19.37,24.7)	8.64	4.39	49.88
	Pakistan	2208.92	3.64	12.90	51.67	97.10	2.67	49.08	271.55	62.40	704.77	679.07	274.07	2006.69
	Qatar	28.81	0.28	0.22	0.68	0.73	0.01	0.30	5.16	0.27	16.36	3.49	1.32	27.47
	Saudi Arabia	348.14	2.82	2.52	8.30	14.05	0.27	6.05	57.13	6.20	146.26	75.37	29.17	344.63

	Somalia	158.93	0.02	0.26	9.88(0.36,28.5)	4.50	0.11	2.64	15.74	6.64	31.71(13.1,41.23)	59.97	27.48	158.89
	Sudan	438.49	0.42	1.74	9.37(4.87,13.4)	16.93	0.36	7.57	59.59	14.11	121.69(117.66,126.19)	146.90	59.82	438.35
	Syria	175.01	0.49	2.67	7.34(3.24,12.9)	8.91	0.24	4.03	24.72	4.15	56.47(50.91,60.58)	47.51	18.47	174.94
	Tunisia	118.19	0.45	0.63	3.68	10.81	0.33	4.73	17.25	2.08	43.23	25.26	9.74	117.47
	United Arab Emirates	98.90	0.82	0.85	0.66	2.18	0.02	0.91	19.09	1.02	55.60	12.91	4.85	97.48
	Yemen	298.26	0.39	1.94	0.53	9.18	0.18	4.48	38.69	9.08	96.20	98.74	38.87	298.24
Europe	Subtotal	9328.89	107.62	84.46	437.78(430.42,447.89)	1448.16	72.78	615.20	1277.75	110.43	3029.72(3019.62,3037.09)	1595.61	549.43	8906.12
	Albania	28.78	0.14	0.19	4.32	3.99	0.16	1.94	3.61	0.34	7.35	5.11	1.63	28.54
	Andorra	0.86	0.01	0.00	0.03	0.00	0.04	0.17	0.01	0.01	0.43	0.13	0.03	0.92
	Armenia	29.63	0.31	0.49	0.86	3.84	0.14	1.49	4.71	0.41	9.73	5.63	2.02	28.56
	Austria	90.06	0.49	0.50	4.84	15.82	0.79	6.51	11.76	0.87	31.45	12.62	4.42	88.54
	Azerbaijan	101.39	1.00	0.82	2.37(1.77,2.88)	8.02	0.21	3.57	16.60	1.42	38.01(37.5,38.61)	21.24	8.14	100.74
	Belarus	94.49	1.53	1.86	5.31	14.47	0.62	6.28	14.65	0.94	28.69	14.76	5.38	93.43
	Belgium	115.90	2.61	0.70	4.65	20.15	1.09	8.43	14.43	1.19	37.16	19.24	6.25	110.89
	Bosnia and Herzegovina	32.81	0.26	0.28	1.10	6.06	0.19	2.05	5.10	0.27	11.28	4.92	1.31	32.18
	Bulgaria	69.48	0.61	0.55	3.90	14.05	0.52	5.02	10.01	0.62	21.27	9.85	3.07	68.73
	Croatia	41.05	0.46	0.39	2.21	8.25	0.37	3.00	5.60	0.37	12.68	5.92	1.81	40.38
	Cyprus	12.07	0.09	0.23	0.71	1.56	0.07	0.76	1.41	0.13	4.45	2.03	0.64	12.01
	Czech Republic	107.09	1.34	0.63	5.87	20.63	0.66	6.72	15.94	1.15	32.94	15.71	5.50	102.94
	Denmark	57.92	0.83	0.26	2.51	10.69	0.43	4.02	7.72	0.61	18.37	9.43	3.05	57.02
	Estonia	13.27	0.21	0.10	0.78	2.57	0.12	0.87	2.03	0.14	3.71	2.05	0.68	13.20
	Finland	55.41	1.03	0.32	2.36	10.69	0.55	4.82	6.71	0.48	17.05	8.80	2.60	55.23
	France	652.74	9.62	4.79	25.86	111.96	7.62	55.62	67.97	7.38	211.72	114.56	35.64	616.28
	Georgia	39.89	0.47	0.68	1.13	6.14	0.23	2.20	6.52	0.54	12.06	7.27	2.64	39.28
	Germany	837.84	14.65	4.96	39.92	162.77	9.90	67.24	102.89	7.96	273.14	114.35	40.06	800.12
	Greece	104.23	0.95	2.01	4.78	19.49	1.48	9.02	12.13	0.84	34.54	14.95	4.04	103.66
	Hungary	96.60	1.00	0.76	5.49	18.85	0.64	6.35	14.12	0.93	30.15	13.77	4.55	94.78
	Iceland	3.41	0.07	0.01	0.23	0.48	0.02	0.23	0.42	0.04	1.05	0.65	0.20	3.35

Ireland	49.38	0.96	0.24	2.74	6.54	0.26	2.90	6.62	0.62	15.52	9.92	3.08	47.79
Israel	86.56	0.43	2.06	3.32	9.23	0.46	4.55	8.49	1.80	26.18	21.67	8.36	83.37
Italy	604.62	5.88	6.47	24.27	116.28	8.72	55.42	69.40	4.41	209.14	81.71	22.92	435.65
Kazakhstan	187.77	2.12	0.79	12.24(9.42,17.29)	15.39	0.51	7.05	25.49	4.09	55.77(50.72,58.59)	45.38	18.95	186.21
Kyrgyzstan	65.24	0.53	0.11	3.69	3.26	0.10	1.92	8.32	1.77	20.07	18.00	7.46	64.61
Latvia	18.86	0.15	0.15	1.16	3.73	0.16	1.31	2.87	0.19	5.28	2.74	1.12	18.78
Lithuania	27.22	0.44	0.42	1.62	5.35	0.27	1.86	4.23	0.27	7.46	3.86	1.43	26.98
Luxembourg	6.26	0.10	0.04	0.74(0.23,1.76)	0.89	0.04	0.33	1.01	0.06	1.79(0.77,2.3)	0.95	0.33	5.92
Macedonia	20.83	0.14	0.28	0.89	3.01	0.09	1.22	3.10	0.23	7.41	3.38	1.10	20.44
Malta	4.42	0.05	0.04	0.28	0.86	0.03	0.35	0.57	0.04	1.37	0.60	0.21	4.35
Moldova	40.34	0.33	0.09	0.69	5.05	0.16	2.41	6.87	0.41	16.14	6.20	1.99	39.52
Monaco	0.31	0.01	0.00	0.01	0.00	0.04	0.09	0.00	0.00	0.11	0.03	0.01	0.32
Montenegro	6.28	0.05	0.17	0.46(0.36,0.55)	0.97	0.03	0.38	0.86	0.07	1.79(1.7,1.89)	1.12	0.36	6.05
Netherlands	171.35	2.53	0.91	7.51	30.88	1.40	13.29	22.13	1.66	54.98	27.58	8.47	167.25
Norway	54.21	1.15	0.41	2.34	8.33	0.40	3.89	6.69	0.56	18.29	9.20	2.96	53.98
Poland	378.47	3.51	2.91	15.78	68.29	2.90	26.98	52.25	3.86	129.12	54.35	18.52	373.00
Portugal	101.97	1.23	1.02	5.06	20.38	1.18	8.38	14.26	0.87	31.61	14.03	3.94	100.17
Romania	192.38	1.99	1.73	9.09	34.09	1.58	14.23	26.12	1.85	62.92	29.53	9.25	189.34
Russian Federation	1459.34	17.94	22.11	99.87	230.51	8.62	87.94	235.76	16.78	411.20	237.65	90.97	1441.38
San Marino	0.34	0.00	0.00	0.01	0.00	0.02	0.07	0.00	0.00	0.17	0.05	0.02	0.33
Serbia	87.37	0.80	0.60	2.64	15.98	0.51	5.64	12.07	0.80	30.19	14.00	4.14	86.75
Slovakia	54.60	0.20	0.38	3.03	8.85	0.29	3.60	8.02	0.58	18.84	8.02	2.79	53.84
Slovenia	20.79	0.27	0.15	1.04	3.99	0.19	1.59	2.80	0.20	6.59	2.97	1.00	20.34
Spain	467.55	4.49	3.64	24.97	78.57	5.53	38.70	58.60	3.69	162.93	67.08	19.36	432.75
Sweden	100.99	1.60	0.51	4.23	18.30	0.87	7.03	13.20	1.15	31.70	16.51	5.90	83.27
Switzerland	86.55	1.89	0.40	3.91	14.28	0.81	6.80	10.61	0.87	30.22	12.31	4.46	77.60
Tajikistan	95.38	0.65	0.17	1.54	3.52	0.08	1.90	12.12	2.93	30.22	28.94	13.31	95.26
Turkey	843.39	3.85	9.25	24.32	77.07	2.36	30.78	123.46	13.52	299.66	195.25	63.87	839.45
Turkmenistan	60.31	0.40	0.67	4.35(1.99,6.76)	3.21	0.09	1.59	8.73	1.44	17.12(14.71,19.48)	16.21	6.51	60.31

	Ukraine	437.34	4.22	4.56	16.21	71.13	3.06	29.21	72.20	3.80	145.97	66.25	20.73	432.65
	United Kingdom	678.86	7.46	2.97	32.23	111.35	5.73	48.60	86.37	7.47	225.11	113.06	38.51	633.68
	Uzbekistan	334.69	4.57	0.68	8.31(7.34,9.33)	18.39	0.44	8.88	50.19	7.80	117.62(116.6,118.59)	84.07	33.74	334.00
South-East Asia	Subtotal	20213.8752.48		104.42	191.42(162.14,225.34)	1301.78	44.45	745.89	3039.55	355.94	7775.32(7741.41,7804.6)	4989.18	1613.47	18433.27
	Bangladesh	1646.89	1.64	4.77	41.47(17.85,69.69)	80.17	3.65	47.27	190.36	29.95	667.24(639.02,690.86)	438.65	141.73	1642.69
	Bhutan	7.72	0.02	0.06	0.12	0.42	0.02	0.25	0.89	0.13	3.27	1.91	0.63	7.71
	India	13800.0435.66		49.57	2.27	861.52	28.85	505.74	2108.30	246.43	5436.48	3426.54	1098.70	12030.90
	Indonesia	2735.24	7.77	12.66	72.25(66.59,77.95)	177.28	4.71	93.26	429.48	49.43	978.83(973.14,984.49)	677.88	231.68	2730.86
	Maldives	5.41	0.06	0.10	0.57	0.19	0.01	0.11	0.78	0.08	2.22	0.93	0.35	5.29
	Myanmar	544.10	0.91	6.06	18.75	35.91	0.78	17.74	88.24	9.55	184.47	137.69	44.00	543.48
	Nepal	291.37	1.12	1.79	0.01	16.04	0.45	8.72	34.97	5.79	111.63	84.47	26.36	289.42
	North Korea	257.79	2.10	18.80	1.58	24.93	0.92	12.98	42.53	3.58	83.33	50.04	17.01	257.79
	Sri Lanka	214.13	0.68	3.93	14.53	23.38	0.67	11.15	31.84	3.39	59.37	48.93	16.27	213.99
	Thailand	698.00	2.49	6.66	39.78	81.38	4.37	48.38	110.51	7.22	244.44	117.77	35.01	697.96
	Timor-Leste	13.18	0.03	0.02	0.09	0.56	0.02	0.29	1.65	0.39	4.04	4.37	1.73	13.18
Western Pacific	Subtotal	19317.43106.11		107.14	374.56(374.14,375.03)	1978.98	107.50	1320.01	2790.82	227.47	7715.46(7715,7715.87)	3437.80	1151.61	18966.36
	Australia	255.00	4.14	1.13	16.87	35.02	1.99	18.52	26.28	3.21	85.39	46.10	16.34	254.72
	Brunei	4.37	0.03	0.12	0.17(0.14,0.2)	0.28	0.01	0.13	0.73	0.07	1.57(1.54,1.59)	0.96	0.31	4.37
	Cambodia	167.19	0.15	2.55	2.31	7.81	0.20	4.64	22.98	3.76	59.24	46.26	17.30	167.19
	China	14393.2466.81		46.95	145.80	1402.43	70.37	1024.96	2114.19	156.89	6104.69	2445.00	815.15	14046.88
	Cook Islands	0.09	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.04	0.02	0.01	0.13
	Federated States of Micronesia	1.15	0.00	0.00	0.09(0.03,0.16)	0.07	0.00	0.02	0.24	0.03	0.25(0.18,0.32)	0.33	0.12	1.15
	Fiji	8.96	0.04	0.08	0.35	0.69	0.01	0.16	2.08	0.19	2.17	2.32	0.87	8.96
	Japan	1264.76	18.42	5.49	79.00	275.31	24.05	134.76	146.92	9.36	364.56	160.35	46.55	1262.42
	Kiribati	1.19	0.00	0.01	0.05(0.04,0.05)	0.06	0.00	0.02	0.27	0.03	0.26(0.25,0.26)	0.36	0.15	1.24
	Laos	72.76	0.10	0.03	0.62	3.22	0.08	1.65	10.41	1.71	25.86	21.32	7.76	72.76
	Malaysia	323.66	1.62	2.66	4.50	22.67	0.73	12.08	49.29	5.42	125.69	73.10	25.88	323.26

Marshall Islands	0.78	0.00	0.00	0.03	0.00	0.00	0.05	0.02	0.02	0.32	0.24	0.08	0.78
Mongolia	32.78	0.22	0.18	1.27	1.52	0.04	0.83	4.47	0.79	11.42	8.34	3.70	32.78
Nauru	0.10	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.05	0.03	0.01	0.10
New Zealand	48.22	0.77	0.21	2.44	6.69	0.35	3.67	4.92	0.58	16.56	9.08	2.95	48.21
Niue	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01
Palau	0.22	0.00	0.00	0.02	0.00	0.00	0.02	0.01	0.00	0.10	0.05	0.01	0.22
Papua New Guinea	89.47	0.05	0.09	0.53(0.23,0.86)	3.95	0.05	1.37	17.31	2.42	25.29(24.96,25.58)	27.73	10.69	89.46
Philippines	1095.81	6.07	3.23	39.17	62.84	1.67	29.82	162.55	22.51	352.25	312.41	103.30	1091.85
Samoa	1.98	0.01	0.01	0.06	0.12	0.00	0.04	0.33	0.05	0.49	0.63	0.26	1.98
Singapore	58.50	0.50	0.91	8.25	7.14	0.29	4.82	8.70	0.51	17.83	7.03	2.54	57.92
Solomon Islands	6.87	0.02	0.01	0.06	0.28	0.01	0.10	1.16	0.22	1.74	2.28	1.00	6.87
South Korea	512.69	4.95	37.98	24.41	72.75	3.95	42.01	72.31	3.28	164.59	67.85	18.61	512.42
Tonga	1.06	0.00	0.01	0.02	0.07	0.00	0.02	0.20	0.03	0.26	0.34	0.12	1.06
Tuvalu	0.11	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.05	0.03	0.01	0.22
Vanuatu	3.07	0.00	0.01	0.12(0.1,0.14)	0.13	0.00	0.04	0.55	0.09	0.72(0.7,0.74)	0.99	0.41	6.03
Vietnam	973.39	2.21	5.48	48.42	75.93	3.70	40.25	144.90	16.30	354.06	204.65	77.48	973.37

Note that imputed data were heighted and all individuals were considered in 194 countries.

Table. S5. Estimates of target population sizes for COVID-19 vaccination in 194 countries, considering the fraction of the population willing to accept COVID-19 vaccination in each WHO region.

Goals of vaccination ^{a,b}	All (mean, 95%CI)	WHO region (millions; mean, 95%CI)					
		Africa	Americas	Eastern Mediterranean	Europe	Western Pacific	South-East Asia
Maintaining essential core societal services							
Subtotal	181.3 (157.1, 205.6)	13.3 (8.3, 18.3)	32.0 (29.8, 34.3)	24.4 (17, 31.9)	42.5 (39.1, 45.9)	43.0 (38, 48.1)	25.9 (24.8, 27.0)
Healthcare workers	28.9 (26.0, 31.8)	0.7 (0.5, 1.0)	7.8 (7.3, 8.4)	1.4 (1.0, 1.8)	7.3 (6.7, 7.9)	7.8 (6.9, 8.7)	3.9 (3.7, 4.0)
Police and military	33.4 (29.2, 37.5)	1.7 (1.0, 2.3)	5.8 (5.4, 6.2)	4.7 (3.3, 6.1)	5.7 (5.2, 6.1)	7.8 (6.9, 8.8)	7.7 (7.4, 8.1)
Other essential workers	118.9 (101.8, 136.1)	10.8 (6.7, 14.9)	18.4 (17.2, 19.7)	18.4 (12.8, 24)	29.6 (27.2, 31.9)	27.5 (24.3, 30.7)	14.2 (13.6, 14.8)
Reducing severe COVID-19 disease							
Subtotal	1515.7 (1335.5, 1697.7)	107.9 (67.3, 148.7)	217.4 (202.3, 232.8)	121.2 (84.3, 158.2)	233.3 (214.7, 252)	458.4 (405.2, 512.2)	377.6 (361.9, 393.8)
People aged ≥60 years with at least one underlying condition	467.3 (417.5, 517.5)	18.7 (11.7, 25.8)	81.4 (75.8, 87.2)	27.5 (19.1, 35.9)	97.7 (89.9, 105.6)	144.9 (128.0, 161.9)	97.0 (93.0, 101.2)
People aged ≥80 years without any underlying conditions	20.4 (18.4, 22.4)	0.4 (0.3, 0.6)	3.2 (3.0, 3.5)	0.6 (0.4, 0.8)	4.9 (4.5, 5.3)	7.9 (7.0, 8.8)	3.3 (3.1, 3.4)
People aged 60-79 years without any underlying conditions	252.6 (225.8, 279.7)	9.9 (6.2, 13.7)	36.9 (34.3, 39.5)	12.1 (8.4, 15.8)	41.5 (38.2, 44.8)	96.6 (85.4, 108.0)	55.6 (53.3, 58.0)
People aged 20-59 years with at least one underlying condition	679.4 (594.2, 765.4)	58.4 (36.4, 80.5)	85.1 (79.2, 91.1)	66.6 (46.4, 87.0)	81.7 (75.2, 88.3)	192.4 (170.0, 215)	195.2 (187.1, 203.6)
Pregnant women	96.1 (79.6, 112.6)	20.4 (12.7, 28.2)	10.7 (10.0, 11.5)	14.3 (10.0, 18.7)	7.4 (6.8, 8.0)	16.6 (14.7, 18.6)	26.5 (25.4, 27.7)
Reducing symptomatic infections and/or to stop virus transmission							
Subtotal	1953.6 (1715, 2194.7)	159.1 (99.2, 219.3)	268.6 (250.0, 287.7)	177.4 (123.4, 231.6)	204.5 (188.2, 220.9)	564.7 (499.2, 631.1)	579.2 (555.1, 604.1)
Healthy adults (20-59 years)	1953.6 (1715, 2194.7)	159.1 (99.2, 219.3)	268.6 (250.0, 287.7)	177.4 (123.4, 231.6)	204.5 (188.2, 220.9)	564.7 (499.2, 631.1)	579.2 (555.1, 604.1)
Total	3650.5 (3207.6, 4097.9)	280.3 (174.7, 386.4)	518.0 (482.0, 554.7)	322.9 (224.7, 421.6)	480.4 (442.0, 518.8)	1066.2 (942.4, 1191.4)	982.8 (941.9, 1025)

^a: mean predictive values were used to estimate the 95% confidence interval of target population sizes.

^b: School-age children, infants and toddlers were not directly prioritized as a target population, recommended by WHO.

Table. S6. The estimates of target population sizes for COVID-19 vaccination by goals of vaccination program on a national level, assuming 0% of total people with underlying conditions in 11 countries without available data on the age-specific prevalence of underlying conditions.

WHO region	Country	Total	Maintaining essential core societal services (100,000)			Reducing severe COVID-19 disease (100,000)					Reducing symptomatic infections and/or to stop virus transmission (100,000)			Total no. of potential vaccine recipients, excluding SARS-CoV-2 individuals
			Healthcare workers	Police and military	Other essential workers	People aged ≥ 60 years with at least one underlying condition	People aged ≥ 80 years without any underlying conditions	People aged 60-79 years without any underlying conditions	People aged < 60 years with at least one underlying condition	Pregnant women	Healthy adults (20-59 years)	School aged children and young people (5-19 years) without any underlying conditions	Young children (0-4 years) without any underlying conditions	
Americas														
	Dominica	0.68	0.01	0.00	0.04	-	0.00	0.03	-	0.01	0.31	0.23	0.07	0.68
	Saint Kitts and Nevis	0.51	0.00	0.00	0.04	-	0.01	0.08	-	0.01	0.23	0.11	0.03	0.51
Europe														
	Andorra	0.86	0.01	0.00	0.11	-	0.04	0.17	-	0.01	0.36	0.13	0.03	0.84
	Monaco	0.31	0.01	0.00	0.10	-	0.04	0.09	-	0.00	0.02	0.04	0.01	0.31
	San Marino	0.34	0.00	0.00	0.01	-	0.02	0.07	-	0.00	0.17	0.05	0.02	0.33
Western Pacific														
	Cook Islands	0.09	0.00	0.00	0.02	-	0.00	0.01	-	0.00	0.02	0.02	0.01	0.09
	Marshall Islands	0.78	0.00	0.00	0.04	-	0.00	0.05	-	0.02	0.32	0.25	0.09	0.78
	Nauru	0.10	0.00	0.00	0.00	-	0.00	0.01	-	0.00	0.05	0.03	0.01	0.10
	Niue	0.01	0.00	0.00	0.00	-	0.00	0.00	-	0.00	0.01	0.00	0.00	0.01
	Palau	0.22	0.00	0.00	0.02	-	0.01	0.03	-	0.00	0.11	0.05	0.01	0.22
	Tuvalu	0.11	0.00	0.00	0.02	-	0.00	0.01	-	0.00	0.03	0.03	0.01	0.11

-: Data not available.

Table. S7. National estimates of target population sizes for COVID-19 vaccination in 104 countries with data on each target population from official reports.

WHO region	Country (n=104)	Total	Maintaining essential core societal services (100,000)			Reducing severe COVID-19 disease (100,000)				Reducing symptomatic infections and/or to stop virus transmission (100,000)			Total no. of potential vaccine recipients, excluding SARS-CoV-2 individuals (100,000s)	
			Healthcare workers	Police and military	Other essential workers	People aged ≥60 years with at least one underlying condition	People aged ≥80 years without any underlying conditions	People aged 60-79 years without any underlying conditions	People aged <60 years with at least one underlying condition	Pregnant women	Healthy adults (20-59 years)	School aged children and young people (5-19 years) without any underlying conditions		Young children (0-4 years) without any underlying conditions
Africa	Subtotal	4787.77	6.41	11.58	62.11	129.9	2.38	75.66	573.27	171.92	1302.47	1714.13	737.92	4785.49
	Benin	121.23	0.06	0.12	2.93	3.99	0.10	2.07	13.83	4.39	32.76	42.40	18.58	121.20
	Botswana	23.52	0.14	0.19	0.53	1.23	0.02	0.40	5.18	0.58	5.54	7.03	2.68	23.44
	Burkina Faso	209.03	0.20	0.37	1.09	5.20	0.09	2.92	22.93	7.93	57.78	76.82	33.70	209.01
	Equatorial Guinea	14.03	0.01	0.01	0.52	0.37	0.01	0.16	2.13	0.47	4.28	4.14	1.94	13.98
	eSwatini	11.60	0.05	0.07	0.17	0.53	0.01	0.12	2.80	0.31	2.25	3.89	1.40	11.54
	Guinea-Bissau	19.68	0.02	0.04	0.07	0.59	0.01	0.30	2.42	0.69	5.64	6.91	2.99	19.66
	Kenya	537.71	0.71	0.69	8.70	13.86	0.29	8.22	70.71	15.46	163.68	186.71	68.68	537.09
	Lesotho	21.42	0.07	0.04	0.23	1.25	0.02	0.34	5.16	0.57	5.19	6.08	2.46	21.40
	Malawi	191.30	0.09	0.15	0.37	5.20	0.11	2.51	27.59	6.53	50.74	69.76	28.24	191.24
	Mauritius	12.72	0.08	0.12	0.45	1.72	0.04	0.58	2.67	0.13	3.98	2.32	0.63	12.71
	Namibia	25.41	0.06	0.16	1.15	1.02	0.02	0.38	4.46	0.73	6.18	7.96	3.29	25.28
	Nigeria	2061.40	3.22	5.87	34.15	57.17	0.82	35.02	232.99	78.14	547.24	737.18	329.61	2060.75
	Rwanda	129.52	0.17	1.45	2.24	3.96	0.09	2.58	14.69	4.11	38.28	43.54	18.42	129.47
	São Tomé and Príncipe	2.19	0.00	0.01	0.03	0.07	0.00	0.04	0.26	0.07	0.59	0.80	0.31	2.18
	Senegal	167.44	0.06	0.19	2.67	5.25	0.11	2.70	18.13	5.78	46.84	60.04	25.65	167.28
	Seychelles	0.98	0.01	0.01	0.12	0.08	0.00	0.04	0.17	0.02	0.25	0.21	0.08	0.98
	Tanzania	597.34	0.36	1.10	2.96	15.16	0.36	9.76	67.08	21.92	168.42	215.34	94.89	597.34
	Uganda	457.41	0.64	0.83	2.27	9.16	0.19	5.41	53.97	17.44	117.17	174.54	75.78	457.27
	Zambia	183.84	0.46	0.16	1.46	4.09	0.09	2.11	26.10	6.65	45.66	68.46	28.59	183.67

Americas	Subtotal	8908.41	104.14	68.71	201.92	1031.33	41.18	465.2	1119.6	124.15	3312.98	1836.92	602.28	8312.51
	Antigua and Barbuda	0.98	0.01	0.01	0.11	0.09	0.00	0.05	0.15	0.02	0.27	0.20	0.07	0.98
	Bolivia	116.73	0.37	1.02	4.78	7.51	0.42	4.17	12.48	2.54	38.71	33.20	11.54	115.31
	Brazil	2125.59	26.11	10.49	60.57	177.83	8.88	111.87	250.71	29.60	866.94	440.94	141.67	1920.27
	Canada	377.42	4.63	1.41	21.91	60.22	3.10	30.64	40.98	3.81	133.60	57.62	19.52	374.82
	Chile	191.16	3.04	1.87	7.27	21.34	0.99	10.90	22.77	2.38	72.63	36.54	11.44	185.95
	Colombia	508.83	1.79	6.41	10.55	41.41	1.79	23.76	58.42	7.57	206.24	114.39	36.49	497.46
	Costa Rica	50.94	0.32	0.05	1.81	4.95	0.20	2.52	6.84	0.71	19.80	10.33	3.41	49.78
	Cuba	113.27	1.81	1.19	6.18	14.97	0.91	8.20	15.97	1.15	39.43	17.91	5.55	113.19
	Dominican Republic	108.48	0.32	1.03	3.55	7.38	0.37	4.30	13.18	2.12	38.37	28.07	9.80	101.21
	Ecuador	176.43	0.80	0.83	5.60	11.65	0.59	7.17	19.39	3.48	65.35	45.29	16.28	97.58
	El Salvador	64.86	0.22	0.76	1.70	5.28	0.23	2.31	8.69	1.18	22.27	16.56	5.64	64.51
	Grenada	1.13	0.01	0.01	0.13	0.11	0.00	0.05	0.17	0.02	0.29	0.24	0.09	1.12
	Guyana	7.87	0.01	0.06	0.22	0.57	0.02	0.27	1.19	0.16	2.57	2.08	0.72	7.82
	Jamaica	29.61	0.06	0.15	1.65	2.66	0.11	1.16	4.45	0.48	9.99	6.66	2.24	29.52
	Mexico	1289.33	6.16	7.66	46.20	104.92	3.03	36.97	210.48	22.69	420.10	323.13	107.98	1279.71
	Nicaragua	66.25	0.17	0.24	1.14	3.77	0.13	1.85	8.52	1.37	24.36	18.25	6.45	66.20
	Peru	329.72	1.23	2.62	13.24	23.26	1.41	16.58	35.84	5.92	127.88	74.12	27.63	320.52
	Saint Vincent and the Grenadines	1.11	0.01	0.01	0.07	0.11	0.00	0.05	0.18	0.02	0.34	0.24	0.07	1.11
	The Bahamas	3.93	0.03	0.05	0.37	0.30	0.01	0.17	0.62	0.05	1.22	0.86	0.26	3.86
	United States	3310.03	56.80	32.35	13.11	538.21	18.73	200.24	404.50	38.40	1211.22	603.36	193.10	3046.89
	Uruguay	34.74	0.24	0.49	1.76	4.79	0.26	1.97	4.07	0.48	11.40	6.93	2.33	34.70
Eastern Mediterranean	Subtotal	4132.3	10.86	33.27	105.15	212.24	5.04	94.21	577.33	105.58	1346.47	1171.62	470.56	3916.22
	Bahrain	17.02	0.06	0.19	0.54	0.65	0.01	0.25	2.98	0.24	8.28	2.78	1.05	16.18
	Egypt	1023.34	2.43	13.36	34.95	60.28	1.14	22.75	160.09	26.99	292.62	287.37	121.36	1022.25
	Lebanon	68.25	0.26	0.80	1.60	5.52	0.16	1.97	11.09	1.20	23.98	16.23	5.46	67.31
	Libya	68.71	0.59	0.17	1.09	3.46	0.08	1.21	11.97	1.29	25.42	17.42	6.01	65.15
	Morocco	369.11	0.78	3.11	6.32	30.45	0.70	12.60	57.36	6.99	128.78	89.89	32.12	366.54

	Pakistan	2208.92	3.64	12.90	51.67	97.10	2.67	49.08	271.55	62.40	704.77	679.07	274.07	2006.69
	Qatar	28.81	0.28	0.22	0.68	0.73	0.01	0.30	5.16	0.27	16.36	3.49	1.32	27.47
	Saudi Arabia	348.14	2.82	2.52	8.30	14.05	0.27	6.05	57.13	6.20	146.26	75.37	29.17	344.63
Europe	Subtotal	6198.15	76.38	48.94	274.98	1070.01	59.55	465.71	797.34	63.93	2047.18	974.05	320.11	5802.82
	Armenia	29.63	0.31	0.49	0.86	3.84	0.14	1.49	4.71	0.41	9.73	5.63	2.02	28.56
	Austria	90.06	0.49	0.50	4.84	15.82	0.79	6.51	11.76	0.87	31.45	12.62	4.42	88.54
	Belarus	94.49	1.53	1.86	5.31	14.47	0.62	6.28	14.65	0.94	28.69	14.76	5.38	93.43
	Belgium	115.90	2.61	0.70	4.65	20.15	1.09	8.43	14.43	1.19	37.16	19.24	6.25	110.89
	Bosnia and Herzegovina	32.81	0.26	0.28	1.10	6.06	0.19	2.05	5.10	0.27	11.28	4.92	1.31	32.18
	Bulgaria	69.48	0.61	0.55	3.90	14.05	0.52	5.02	10.01	0.62	21.27	9.85	3.07	68.73
	Croatia	41.05	0.46	0.39	2.21	8.25	0.37	3.00	5.60	0.37	12.68	5.92	1.81	40.38
	Cyprus	12.07	0.09	0.23	0.71	1.56	0.07	0.76	1.41	0.13	4.45	2.03	0.64	12.01
	Czech Republic	107.09	1.34	0.63	5.87	20.63	0.66	6.72	15.94	1.15	32.94	15.71	5.50	102.94
	Denmark	57.92	0.83	0.26	2.51	10.69	0.43	4.02	7.72	0.61	18.37	9.43	3.05	57.02
	Estonia	13.27	0.21	0.10	0.78	2.57	0.12	0.87	2.03	0.14	3.71	2.05	0.68	13.20
	Finland	55.41	1.03	0.32	2.36	10.69	0.55	4.82	6.71	0.48	17.05	8.80	2.60	55.23
	France	652.74	9.62	4.79	25.86	111.96	7.62	55.62	67.97	7.38	211.72	114.56	35.64	616.28
	Georgia	39.89	0.47	0.68	1.13	6.14	0.23	2.20	6.52	0.54	12.06	7.27	2.64	39.28
	Germany	837.84	14.65	4.96	39.92	162.77	9.90	67.24	102.89	7.96	273.14	114.35	40.06	800.12
	Greece	104.23	0.95	2.01	4.78	19.49	1.48	9.02	12.13	0.84	34.54	14.95	4.04	103.66
	Iceland	3.41	0.07	0.01	0.23	0.48	0.02	0.23	0.42	0.04	1.05	0.65	0.20	3.35
	Ireland	49.38	0.96	0.24	2.74	6.54	0.26	2.90	6.62	0.62	15.52	9.92	3.08	47.79
	Israel	86.56	0.43	2.06	3.32	9.23	0.46	4.55	8.49	1.80	26.18	21.67	8.36	83.37
	Italy	604.62	5.88	6.47	24.27	116.28	8.72	55.42	69.40	4.41	209.14	81.71	22.92	435.65
	Kyrgyzstan	65.24	0.53	0.11	3.69	3.26	0.10	1.92	8.32	1.77	20.07	18.00	7.46	64.61
	Latvia	18.86	0.15	0.15	1.16	3.73	0.16	1.31	2.87	0.19	5.28	2.74	1.12	18.78
	Lithuania	27.22	0.44	0.42	1.62	5.35	0.27	1.86	4.23	0.27	7.46	3.86	1.43	26.98
	Moldova	40.34	0.33	0.09	0.69	5.05	0.16	2.41	6.87	0.41	16.14	6.20	1.99	39.52
	Netherlands	171.35	2.53	0.91	7.51	30.88	1.40	13.29	22.13	1.66	54.98	27.58	8.47	167.25

	Macedonia	20.83	0.14	0.28	0.89	3.01	0.09	1.22	3.10	0.23	7.41	3.38	1.10	20.44
	Norway	54.21	1.15	0.41	2.34	8.33	0.40	3.89	6.69	0.56	18.29	9.20	2.96	53.98
	Poland	378.47	3.51	2.91	15.78	68.29	2.90	26.98	52.25	3.86	129.12	54.35	18.52	373.00
	Portugal	101.97	1.23	1.02	5.06	20.38	1.18	8.38	14.26	0.87	31.61	14.03	3.94	100.17
	Romania	192.38	1.99	1.73	9.09	34.09	1.58	14.23	26.12	1.85	62.92	29.53	9.25	189.34
	Serbia	87.37	0.80	0.60	2.64	15.98	0.51	5.64	12.07	0.80	30.19	14.00	4.14	86.75
	Slovakia	54.60	0.20	0.38	3.03	8.85	0.29	3.60	8.02	0.58	18.84	8.02	2.79	53.84
	Slovenia	20.79	0.27	0.15	1.04	3.99	0.19	1.59	2.80	0.20	6.59	2.97	1.00	20.34
	Spain	467.55	4.49	3.64	24.97	78.57	5.53	38.70	58.60	3.69	162.93	67.08	19.36	432.75
	Sweden	100.99	1.60	0.51	4.23	18.30	0.87	7.03	13.20	1.15	31.70	16.51	5.90	83.27
	Switzerland	86.55	1.89	0.40	3.91	14.28	0.81	6.80	10.61	0.87	30.22	12.31	4.46	77.60
	Tajikistan	95.38	0.65	0.17	1.54	3.52	0.08	1.90	12.12	2.93	30.22	28.94	13.31	95.26
	Ukraine	437.34	4.22	4.56	16.21	71.13	3.06	29.21	72.20	3.80	145.97	66.25	20.73	432.65
	United Kingdom	678.86	7.46	2.97	32.23	111.35	5.73	48.60	86.37	7.47	225.11	113.06	38.51	633.68
South-East Asia	Subtotal	14776.73	40.3	75.11	43.84	968.81	34.18	567.64	2263.88	257.75	5771.56	3600.63	1153.08	13007.54
	Bhutan	7.72	0.02	0.06	0.12	0.42	0.02	0.25	0.89	0.13	3.27	1.91	0.63	7.71
	India	13800.04	35.66	49.57	2.27	861.52	28.85	505.74	2108.30	246.43	5436.48	3426.54	1098.70	12030.90
	North Korea	257.79	2.10	18.80	1.58	24.93	0.92	12.98	42.53	3.58	83.33	50.04	17.01	257.79
	Thailand	698.00	2.49	6.66	39.78	81.38	4.37	48.38	110.51	7.22	244.44	117.77	35.01	697.96
	Timor-Leste	13.18	0.03	0.02	0.09	0.56	0.02	0.29	1.65	0.39	4.04	4.37	1.73	13.18
Western Pacific	Subtotal	18839.45	103.64	104.13	366.72	1944.94	106.36	1302.55	2716.52	218.58	7543.54	3322.59	1109.91	18485.64
	Australia	255.00	4.14	1.13	16.87	35.02	1.99	18.52	26.28	3.21	85.39	46.10	16.34	254.72
	Brunei	4.37	0.03	0.12	0.25	0.28	0.01	0.13	0.73	0.07	1.48	0.96	0.31	4.37
	Cambodia	167.19	0.15	2.55	2.31	7.81	0.20	4.64	22.98	3.76	59.24	46.26	17.30	167.19
	China	14393.24	66.81	46.95	145.80	1402.43	70.37	1024.96	2114.19	156.89	6104.69	2445.00	815.15	14046.88
	Fiji	8.96	0.04	0.08	0.35	0.69	0.01	0.16	2.08	0.19	2.17	2.32	0.87	8.96
	Japan	1264.76	18.42	5.49	79.00	275.31	24.05	134.76	146.92	9.36	364.56	160.35	46.55	1262.42
	Laos	72.76	0.10	0.03	0.62	3.22	0.08	1.65	10.41	1.71	25.86	21.32	7.76	72.76

Mongolia	32.78	0.22	0.18	1.27	1.52	0.04	0.83	4.47	0.79	11.42	8.34	3.70	32.78
Philippines	1095.81	6.07	3.23	39.17	62.84	1.67	29.82	162.55	22.51	352.25	312.41	103.30	1091.85
Singapore	58.50	0.50	0.91	8.25	7.14	0.29	4.82	8.70	0.51	17.83	7.03	2.54	57.92
South Korea	512.69	4.95	37.98	24.41	72.75	3.95	42.01	72.31	3.28	164.59	67.85	18.61	512.42
Vietnam	973.39	2.21	5.48	48.42	75.93	3.70	40.25	144.90	16.30	354.06	204.65	77.48	973.37

Table. S8. National estimates of target population sizes for COVID-19 vaccination among those who are willing to accept COVID-19 vaccination.

WHO region	Country (n=104)	Total	Maintaining essential core societal services (100,000; mean,95%CI)			Reducing severe COVID-19 disease (100,000; mean,95%CI)					Reducing symptomatic infections and/or to stop virus transmission (100,000; mean, 95%CI)		
			Healthcare workers	Police and military	Other essential workers	People aged 60 years with at least one underlying condition	People aged ≥80 years without any underlying conditions	People aged 79 years without any underlying conditions	60- People aged <60 years with at least one underlying condition	Pregnant women	Healthy adults (20-59 years)	School aged children and young people (5-19 years) without any underlying conditions	Young children (0-4 years) without any underlying conditions
Africa													
	Benin	63.4 (39.5, 87.4)	0 (0, 0)	0.1 (0, 0.1)	1.5 (1, 2.1)	2.1 (1.3, 2.9)	0.1 (0, 0.1)	1.1 (0.7, 1.5)	7.2 (4.5, 10)	2.3 (1.4, 3.2)	17.1 (10.7, 23.6)	22.2 (13.8, 30.6)	9.7 (6.1, 13.4)
	Botswana	12.3 (7.7, 17)	0.1 (0, 0.1)	0.1 (0.1, 0.1)	0.3 (0.2, 0.4)	0.6 (0.4, 0.9)	0 (0, 0)	0.2 (0.1, 0.3)	2.7 (1.7, 3.7)	0.3 (0.2, 0.4)	2.9 (1.8, 4)	3.7 (2.3, 5.1)	1.4 (0.9, 1.9)
	Burkina Faso	109.3 (68.1, 150.7)	0.1 (0.1, 0.1)	0.2 (0.1, 0.3)	0.6 (0.4, 0.8)	2.7 (1.7, 3.7)	0 (0, 0.1)	1.5 (1, 2.1)	12 (7.5, 16.5)	4.1 (2.6, 5.7)	30.2 (18.8, 41.7)	40.2 (25, 55.4)	17.6 (11, 24.3)
	Equatorial Guinea	7.3 (4.6, 10.1)	0 (0, 0)	0 (0, 0)	0.3 (0.2, 0.4)	0.2 (0.1, 0.3)	0 (0, 0)	0.1 (0.1, 0.1)	1.1 (0.7, 1.5)	0.2 (0.2, 0.3)	2.2 (1.4, 3.1)	2.2 (1.3, 3)	1 (0.6, 1.4)
	Guinea-Bissau	10.3 (6.4, 14.2)	0 (0, 0)	0 (0, 0)	0 (0, 0)	0.3 (0.2, 0.4)	0 (0, 0)	0.2 (0.1, 0.2)	1.3 (0.8, 1.7)	0.4 (0.2, 0.5)	3 (1.8, 4.1)	3.6 (2.3, 5)	1.6 (1, 2.2)
	Kenya	281.2 (175.3, 387.7)	0.4 (0.2, 0.5)	0.4 (0.2, 0.5)	4.6 (2.8, 6.3)	7.2 (4.5, 10)	0.2 (0.1, 0.2)	4.3 (2.7, 5.9)	37 (23.1, 51)	8.1 (5, 11.1)	85.6 (53.4, 118)	97.6 (60.9, 134.6)	35.9 (22.4, 49.5)
	Lesotho	11.2 (7, 15.4)	0 (0, 0.1)	0 (0, 0)	0.1 (0.1, 0.2)	0.7 (0.4, 0.9)	0 (0, 0)	0.2 (0.1, 0.2)	2.7 (1.7, 3.7)	0.3 (0.2, 0.4)	2.7 (1.7, 3.7)	3.2 (2, 4.4)	1.3 (0.8, 1.8)
	Malawi	100 (62.4, 137.9)	0 (0, 0.1)	0.1 (0, 0.1)	0.2 (0.1, 0.3)	2.7 (1.7, 3.8)	0.1 (0, 0.1)	1.3 (0.8, 1.8)	14.4 (9, 19.9)	3.4 (2.1, 4.7)	26.5 (16.5, 36.6)	36.5 (22.7, 50.3)	14.8 (9.2, 20.4)
	Mauritius	6.7 (4.1, 9.2)	0 (0, 0.1)	0.1 (0, 0.1)	0.2 (0.1, 0.3)	0.9 (0.6, 1.2)	0 (0, 0)	0.3 (0.2, 0.4)	1.4 (0.9, 1.9)	0.1 (0, 0.1)	2.1 (1.3, 2.9)	1.2 (0.8, 1.7)	0.3 (0.2, 0.5)
	Namibia	13.3 (8.3, 18.3)	0 (0, 0)	0.1 (0.1, 0.1)	0.6 (0.4, 0.8)	0.5 (0.3, 0.7)	0 (0, 0)	0.2 (0.1, 0.3)	2.3 (1.5, 3.2)	0.4 (0.2, 0.5)	3.2 (2, 4.5)	4.2 (2.6, 5.7)	1.7 (1.1, 2.4)
	Nigeria	1158.5 (601.9, 1717.1)	1.8 (0.9, 2.7)	3.3 (1.7, 4.9)	19.2 (10, 28.5)	32.1 (16.7, 47.6)	0.5 (0.2, 0.7)	19.7 (10.2, 29.2)	130.9 (68, 194.1)	43.9 (22.8, 65.1)	307.5 (159.8, 455.8)	414.3 (215.3, 614.1)	185.2 (96.2, 274.6)
	Rwanda	67.7 (42.2, 93.4)	0.1 (0.1, 0.1)	0.8 (0.5, 1)	1.2 (0.7, 1.6)	2.1 (1.3, 2.9)	0 (0, 0.1)	1.3 (0.8, 1.9)	7.7 (4.8, 10.6)	2.1 (1.3, 3)	20 (12.5, 27.6)	22.8 (14.2, 31.4)	9.6 (6, 13.3)
	Sao Tome and Principe	1.1 (0.7, 1.6)	0 (0, 0)	0 (0, 0)	0 (0, 0)	0 (0, 0.1)	0 (0, 0)	0 (0, 0)	0.1 (0.1, 0.2)	0 (0, 0)	0.3 (0.2, 0.4)	0.4 (0.3, 0.6)	0.2 (0.1, 0.2)
	Senegal	87.6 (54.6, 120.7)	0 (0, 0)	0.1 (0.1, 0.1)	1.4 (0.9, 1.9)	2.7 (1.7, 3.8)	0.1 (0, 0.1)	1.4 (0.9, 1.9)	9.5 (5.9, 13.1)	3 (1.9, 4.2)	24.5 (15.3, 33.8)	31.4 (19.6, 43.3)	13.4 (8.4, 18.5)
	Seychelles	0.5 (0.3, 0.7)	0 (0, 0)	0 (0, 0)	0.1 (0, 0.1)	0 (0, 0.1)	0 (0, 0)	0 (0, 0)	0.1 (0.1, 0.1)	0 (0, 0)	0.1 (0.1, 0.2)	0.1 (0.1, 0.2)	0 (0, 0.1)
	Swaziland	6.1 (3.8, 8.4)	0 (0, 0)	0 (0, 0.1)	0.1 (0.1, 0.1)	0.3 (0.2, 0.4)	0 (0, 0)	0.1 (0, 0.1)	1.5 (0.9, 2)	0.2 (0.1, 0.2)	1.2 (0.7, 1.6)	2 (1.3, 2.8)	0.7 (0.5, 1)
	Tanzania	312.4 (194.7, 430.7)	0.2 (0.1, 0.3)	0.6 (0.4, 0.8)	1.5 (1, 2.1)	7.9 (4.9, 10.9)	0.2 (0.1, 0.3)	5.1 (3.2, 7)	35.1 (21.9, 48.4)	11.5 (7.1, 15.8)	88.1 (54.9, 121.4)	112.6 (70.2, 155.3)	49.6 (30.9, 68.4)
	Uganda	239.2 (149.1, 329.8)	0.3 (0.2, 0.5)	0.4 (0.3, 0.6)	1.2 (0.7, 1.6)	4.8 (3, 6.6)	0.1 (0.1, 0.1)	2.8 (1.8, 3.9)	28.2 (17.6, 38.9)	9.1 (5.7, 12.6)	61.3 (38.2, 84.5)	91.3 (56.9, 125.8)	39.6 (24.7, 54.6)
	Zambia	96.1 (59.9, 132.5)	0.2 (0.2, 0.3)	0.1 (0.1, 0.1)	0.8 (0.5, 1.1)	2.1 (1.3, 3)	0 (0, 0.1)	1.1 (0.7, 1.5)	13.6 (8.5, 18.8)	3.5 (2.2, 4.8)	23.9 (14.9, 32.9)	35.8 (22.3, 49.4)	15 (9.3, 20.6)
Americas													
	Antigua and Barbuda	0.7 (0.7, 0.8)	0 (0, 0)	0 (0, 0)	0.1 (0.1, 0.1)	0.1 (0.1, 0.1)	0 (0, 0)	0 (0, 0)	0.1 (0.1, 0.1)	0 (0, 0)	0.2 (0.2, 0.2)	0.1 (0.1, 0.2)	0.1 (0, 0.1)

Bolivia	84 (78.2, 90)	0.3 (0.2, 0.3)	0.7 (0.7, 0.8)	3.4 (3.2, 3.7)	5.4 (5, 5.8)	0.3 (0.3, 0.3)	3 (2.8, 3.2)	9 (8.4, 9.6)	1.8 (1.7, 2)	27.9 (25.9, 29.8)	23.9 (22.2, 25.6)	8.3 (7.7, 8.9)
Brazil	1815.3 (1760, 1868.4)	22.3 (21.6, 23)	9 (8.7, 9.2)	51.7 (50.2, 53.2)	151.9 (147.2, 156.3)	7.6 (7.4, 7.8)	95.5 (92.6, 98.3)	214.1 (207.6, 220.4)	25.3 (24.5, 26)	740.4 (717.8, 762)	376.6 (365.1, 387.6)	121 (117.3, 124.5)
Canada	281.6 (238.9, 324.6)	3.5 (2.9, 4)	1.1 (0.9, 1.2)	16.3 (13.9, 18.8)	44.9 (38.1, 51.8)	2.3 (2, 2.7)	22.9 (19.4, 26.4)	30.6 (25.9, 35.2)	2.8 (2.4, 3.3)	99.7 (84.6, 114.9)	43 (36.5, 49.6)	14.6 (12.4, 16.8)
Chile	137.6 (128.1, 147.4)	2.2 (2, 2.3)	1.3 (1.3, 1.4)	5.2 (4.9, 5.6)	15.4 (14.3, 16.5)	0.7 (0.7, 0.8)	7.8 (7.3, 8.4)	16.4 (15.3, 17.6)	1.7 (1.6, 1.8)	52.3 (48.7, 56)	26.3 (24.5, 28.2)	8.2 (7.7, 8.8)
Colombia	366.4 (340.9, 392.3)	1.3 (1.2, 1.4)	4.6 (4.3, 4.9)	7.6 (7.1, 8.1)	29.8 (27.7, 31.9)	1.3 (1.2, 1.4)	17.1 (15.9, 18.3)	42.1 (39.1, 45)	5.5 (5.1, 5.8)	148.5 (138.2, 159)	82.4 (76.6, 88.2)	26.3 (24.4, 28.1)
Costa Rica	36.7 (34.1, 39.3)	0.2 (0.2, 0.2)	0 (0, 0)	1.3 (1.2, 1.4)	3.6 (3.3, 3.8)	0.1 (0.1, 0.2)	1.8 (1.7, 1.9)	4.9 (4.6, 5.3)	0.5 (0.5, 0.5)	14.3 (13.3, 15.3)	7.4 (6.9, 8)	2.5 (2.3, 2.6)
Cuba	81.6 (75.9, 87.3)	1.3 (1.2, 1.4)	0.9 (0.8, 0.9)	4.4 (4.1, 4.8)	10.8 (10, 11.5)	0.7 (0.6, 0.7)	5.9 (5.5, 6.3)	11.5 (10.7, 12.3)	0.8 (0.8, 0.9)	28.4 (26.4, 30.4)	12.9 (12, 13.8)	4 (3.7, 4.3)
Dominican Republic	78.1 (72.7, 83.6)	0.2 (0.2, 0.2)	0.7 (0.7, 0.8)	2.6 (2.4, 2.7)	5.3 (4.9, 5.7)	0.3 (0.2, 0.3)	3.1 (2.9, 3.3)	9.5 (8.8, 10.2)	1.5 (1.4, 1.6)	27.6 (25.7, 29.6)	20.2 (18.8, 21.6)	7.1 (6.6, 7.6)
Ecuador	126.9 (121.2, 132.7)	0.6 (0.6, 0.6)	0.6 (0.6, 0.6)	4 (3.8, 4.2)	8.4 (8, 8.8)	0.4 (0.4, 0.4)	5.2 (4.9, 5.4)	13.9 (13.3, 14.6)	2.5 (2.4, 2.6)	47 (44.9, 49.1)	32.6 (31.1, 34.1)	11.7 (11.2, 12.2)
El Salvador	46.7 (43.5, 50)	0.2 (0.1, 0.2)	0.5 (0.5, 0.6)	1.2 (1.1, 1.3)	3.8 (3.5, 4.1)	0.2 (0.2, 0.2)	1.7 (1.6, 1.8)	6.3 (5.8, 6.7)	0.9 (0.8, 0.9)	16 (14.9, 17.2)	11.9 (11.1, 12.8)	4.1 (3.8, 4.4)
Grenada	0.8 (0.8, 0.9)	0 (0, 0)	0 (0, 0)	0.1 (0.1, 0.1)	0.1 (0.1, 0.1)	0 (0, 0)	0 (0, 0)	0.1 (0.1, 0.1)	0 (0, 0)	0.2 (0.2, 0.2)	0.2 (0.2, 0.2)	0.1 (0.1, 0.1)
Guyana	5.7 (5.3, 6.1)	0 (0, 0)	0 (0, 0)	0.2 (0.1, 0.2)	0.4 (0.4, 0.4)	0 (0, 0)	0.2 (0.2, 0.2)	0.9 (0.8, 0.9)	0.1 (0.1, 0.1)	1.9 (1.7, 2)	1.5 (1.4, 1.6)	0.5 (0.5, 0.6)
Jamaica	21.3 (19.8, 22.8)	0 (0, 0)	0.1 (0.1, 0.1)	1.2 (1.1, 1.3)	1.9 (1.8, 2)	0.1 (0.1, 0.1)	0.8 (0.8, 0.9)	3.2 (3, 3.4)	0.3 (0.3, 0.4)	7.2 (6.7, 7.7)	4.8 (4.5, 5.1)	1.6 (1.5, 1.7)
Mexico	983.8 (942.5, 1023.7)	4.7 (4.5, 4.9)	5.8 (5.6, 6.1)	35.3 (33.8, 36.7)	80.1 (76.7, 83.3)	2.3 (2.2, 2.4)	28.2 (27, 29.4)	160.6 (153.9, 167.1)	17.3 (16.6, 18)	320.5 (307.1, 333.6)	246.6 (236.2, 256.6)	82.4 (78.9, 85.7)
Nicaragua	47.7 (44.4, 51.1)	0.1 (0.1, 0.1)	0.2 (0.2, 0.2)	0.8 (0.8, 0.9)	2.7 (2.5, 2.9)	0.1 (0.1, 0.1)	1.3 (1.2, 1.4)	6.1 (5.7, 6.6)	1 (0.9, 1.1)	17.5 (16.3, 18.8)	13.1 (12.2, 14.1)	4.6 (4.3, 5)
Peru	237.4 (220.9, 254.2)	0.9 (0.8, 1)	1.9 (1.8, 2)	9.5 (8.9, 10.2)	16.7 (15.6, 17.9)	1 (0.9, 1.1)	11.9 (11.1, 12.8)	25.8 (24, 27.6)	4.3 (4, 4.6)	92.1 (85.7, 98.6)	53.4 (49.7, 57.1)	19.9 (18.5, 21.3)
Saint Vincent and the Grenadines	0.8 (0.7, 0.9)	0 (0, 0)	0 (0, 0)	0 (0, 0.1)	0.1 (0.1, 0.1)	0 (0, 0)	0 (0, 0)	0.1 (0.1, 0.1)	0 (0, 0)	0.2 (0.2, 0.3)	0.2 (0.2, 0.2)	0.1 (0.1, 0.1)
The Bahamas	2.8 (2.6, 3)	0 (0, 0)	0 (0, 0)	0.3 (0.2, 0.3)	0.2 (0.2, 0.2)	0 (0, 0)	0.1 (0.1, 0.1)	0.4 (0.4, 0.5)	0 (0, 0)	0.9 (0.8, 0.9)	0.6 (0.6, 0.7)	0.2 (0.2, 0.2)
United States	2227.6 (2072.1, 2386.5)	38.2 (35.6, 41)	21.8 (20.3, 23.3)	8.8 (8.2, 9.5)	362.2 (336.9, 388.1)	12.6 (11.7, 13.5)	134.8 (125.4, 144.4)	272.2 (253.2, 291.6)	25.8 (24, 27.7)	815.2 (758.2, 873.3)	406.1 (377.7, 435)	130 (120.9, 139.2)
Uruguay	25 (23.3, 26.8)	0.2 (0.2, 0.2)	0.4 (0.3, 0.4)	1.3 (1.2, 1.4)	3.4 (3.2, 3.7)	0.2 (0.2, 0.2)	1.4 (1.3, 1.5)	2.9 (2.7, 3.1)	0.3 (0.3, 0.4)	8.2 (7.6, 8.8)	5 (4.6, 5.3)	1.7 (1.6, 1.8)
Eastern Mediterranean												
Bahrain	13 (9.1, 17)	0 (0, 0.1)	0.1 (0.1, 0.2)	0.4 (0.3, 0.5)	0.5 (0.3, 0.6)	0 (0, 0)	0.2 (0.1, 0.2)	2.3 (1.6, 3)	0.2 (0.1, 0.2)	6.3 (4.4, 8.3)	2.1 (1.5, 2.8)	0.8 (0.6, 1.1)
Egypt	906.7 (879.1, 933.3)	2.2 (2.1, 2.2)	11.8 (11.5, 12.2)	31 (30, 31.9)	53.4 (51.8, 55)	1 (1, 1)	20.2 (19.5, 20.7)	141.8 (137.5, 146)	23.9 (23.2, 24.6)	259.3 (251.4, 266.9)	254.6 (246.8, 262.1)	107.5 (104.3, 110.7)
Lebanon	52.3 (36.4, 68.3)	0.2 (0.1, 0.3)	0.6 (0.4, 0.8)	1.2 (0.9, 1.6)	4.2 (2.9, 5.5)	0.1 (0.1, 0.2)	1.5 (1, 2)	8.5 (5.9, 11.1)	0.9 (0.6, 1.2)	18.4 (12.8, 24)	12.4 (8.6, 16.2)	4.2 (2.9, 5.5)
Libya	52.6 (36.6, 68.7)	0.5 (0.3, 0.6)	0.1 (0.1, 0.2)	0.8 (0.6, 1.1)	2.7 (1.8, 3.5)	0.1 (0, 0.1)	0.9 (0.6, 1.2)	9.2 (6.4, 12)	1 (0.7, 1.3)	19.5 (13.5, 25.4)	13.3 (9.3, 17.4)	4.6 (3.2, 6)
Morocco	282.7 (196.7, 369.1)	0.6 (0.4, 0.8)	2.4 (1.7, 3.1)	4.8 (3.4, 6.3)	23.3 (16.2, 30.5)	0.5 (0.4, 0.7)	9.6 (6.7, 12.6)	43.9 (30.6, 57.4)	5.4 (3.7, 7)	98.6 (68.6, 128.8)	68.9 (47.9, 89.9)	24.6 (17.1, 32.1)
Pakistan	1692 (1177.4, 2208.9)	2.8 (1.9, 3.6)	9.9 (6.9, 12.9)	39.6 (27.5, 51.7)	74.4 (51.8, 97.1)	2 (1.4, 2.7)	37.6 (26.2, 49.1)	208 (144.7, 271.5)	47.8 (33.3, 62.4)	539.9 (375.6, 704.8)	520.2 (361.9, 679.1)	209.9 (146.1, 274.1)

Qatar	22.1 (15.4, 28.8)	0.2 (0.1, 0.3)	0.2 (0.1, 0.2)	0.5 (0.4, 0.7)	0.6 (0.4, 0.7)	0 (0, 0)	0.2 (0.2, 0.3)	4 (2.8, 5.2)	0.2 (0.1, 0.3)	12.5 (8.7, 16.4)	2.7 (1.9, 3.5)	1 (0.7, 1.3)
Saudi Arabia	225.2 (214.8, 235.7)	1.8 (1.7, 1.9)	1.6 (1.6, 1.7)	5.4 (5.1, 5.6)	9.1 (8.7, 9.5)	0.2 (0.2, 0.2)	3.9 (3.7, 4.1)	37 (35.3, 38.7)	4 (3.8, 4.2)	94.6 (90.2, 99)	48.8 (46.5, 51)	18.9 (18, 19.7)

Europe

Armenia	20 (18.4, 21.6)	0.2 (0.2, 0.2)	0.3 (0.3, 0.4)	0.6 (0.5, 0.6)	2.6 (2.4, 2.8)	0.1 (0.1, 0.1)	1 (0.9, 1.1)	3.2 (2.9, 3.4)	0.3 (0.3, 0.3)	6.6 (6, 7.1)	3.8 (3.5, 4.1)	1.4 (1.3, 1.5)
Austria	60.8 (55.9, 65.7)	0.3 (0.3, 0.4)	0.3 (0.3, 0.4)	3.3 (3, 3.5)	10.7 (9.8, 11.5)	0.5 (0.5, 0.6)	4.4 (4, 4.7)	7.9 (7.3, 8.6)	0.6 (0.5, 0.6)	21.2 (19.5, 22.9)	8.5 (7.8, 9.2)	3 (2.7, 3.2)
Belarus	63.8 (58.7, 68.9)	1 (1, 1.1)	1.3 (1.2, 1.4)	3.6 (3.3, 3.9)	9.8 (9, 10.6)	0.4 (0.4, 0.4)	4.2 (3.9, 4.6)	9.9 (9.1, 10.7)	0.6 (0.6, 0.7)	19.4 (17.8, 20.9)	10 (9.2, 10.8)	3.6 (3.3, 3.9)
Belgium	78.2 (72, 84.5)	1.8 (1.6, 1.9)	0.5 (0.4, 0.5)	3.1 (2.9, 3.4)	13.6 (12.5, 14.7)	0.7 (0.7, 0.8)	5.7 (5.2, 6.1)	9.7 (9, 10.5)	0.8 (0.7, 0.9)	25.1 (23.1, 27.1)	13 (11.9, 14)	4.2 (3.9, 4.6)
Bosnia and Herzegovina	22.1 (20.4, 23.9)	0.2 (0.2, 0.2)	0.2 (0.2, 0.2)	0.7 (0.7, 0.8)	4.1 (3.8, 4.4)	0.1 (0.1, 0.1)	1.4 (1.3, 1.5)	3.4 (3.2, 3.7)	0.2 (0.2, 0.2)	7.6 (7, 8.2)	3.3 (3.1, 3.6)	0.9 (0.8, 1)
Bulgaria	46.9 (43.1, 50.7)	0.4 (0.4, 0.4)	0.4 (0.3, 0.4)	2.6 (2.4, 2.8)	9.5 (8.7, 10.2)	0.4 (0.3, 0.4)	3.4 (3.1, 3.7)	6.8 (6.2, 7.3)	0.4 (0.4, 0.5)	14.4 (13.2, 15.5)	6.7 (6.1, 7.2)	2.1 (1.9, 2.2)
Croatia	27.7 (25.5, 29.9)	0.3 (0.3, 0.3)	0.3 (0.2, 0.3)	1.5 (1.4, 1.6)	5.6 (5.1, 6)	0.3 (0.2, 0.3)	2 (1.9, 2.2)	3.8 (3.5, 4.1)	0.2 (0.2, 0.3)	8.6 (7.9, 9.2)	4 (3.7, 4.3)	1.2 (1.1, 1.3)
Cyprus	8.1 (7.5, 8.8)	0.1 (0.1, 0.1)	0.2 (0.1, 0.2)	0.5 (0.4, 0.5)	1.1 (1, 1.1)	0 (0, 0.1)	0.5 (0.5, 0.6)	0.9 (0.9, 1)	0.1 (0.1, 0.1)	3 (2.8, 3.2)	1.4 (1.3, 1.5)	0.4 (0.4, 0.5)
Czech Republic	72.3 (66.5, 78.1)	0.9 (0.8, 1)	0.4 (0.4, 0.5)	4 (3.6, 4.3)	13.9 (12.8, 15)	0.4 (0.4, 0.5)	4.5 (4.2, 4.9)	10.8 (9.9, 11.6)	0.8 (0.7, 0.8)	22.2 (20.5, 24)	10.6 (9.8, 11.5)	3.7 (3.4, 4)
Denmark	39.1 (36, 42.2)	0.6 (0.5, 0.6)	0.2 (0.2, 0.2)	1.7 (1.6, 1.8)	7.2 (6.6, 7.8)	0.3 (0.3, 0.3)	2.7 (2.5, 2.9)	5.2 (4.8, 5.6)	0.4 (0.4, 0.4)	12.4 (11.4, 13.4)	6.4 (5.9, 6.9)	2.1 (1.9, 2.2)
Estonia	9 (8.2, 9.7)	0.1 (0.1, 0.2)	0.1 (0.1, 0.1)	0.5 (0.5, 0.6)	1.7 (1.6, 1.9)	0.1 (0.1, 0.1)	0.6 (0.5, 0.6)	1.4 (1.3, 1.5)	0.1 (0.1, 0.1)	2.5 (2.3, 2.7)	1.4 (1.3, 1.5)	0.5 (0.4, 0.5)
Finland	38.2 (37.1, 39.3)	0.7 (0.7, 0.7)	0.2 (0.2, 0.2)	1.6 (1.6, 1.7)	7.4 (7.2, 7.6)	0.4 (0.4, 0.4)	3.3 (3.2, 3.4)	4.6 (4.5, 4.8)	0.3 (0.3, 0.3)	11.8 (11.4, 12.1)	6.1 (5.9, 6.2)	1.8 (1.7, 1.8)
France	464.7 (422.3, 507.2)	6.8 (6.2, 7.5)	3.4 (3.1, 3.7)	18.4 (16.7, 20.1)	79.7 (72.4, 87)	5.4 (4.9, 5.9)	39.6 (36, 43.2)	48.4 (44, 52.8)	5.3 (4.8, 5.7)	150.7 (137, 164.5)	81.6 (74.1, 89)	25.4 (23.1, 27.7)
Georgia	26.9 (24.8, 29.1)	0.3 (0.3, 0.3)	0.5 (0.4, 0.5)	0.8 (0.7, 0.8)	4.1 (3.8, 4.5)	0.2 (0.1, 0.2)	1.5 (1.4, 1.6)	4.4 (4, 4.8)	0.4 (0.3, 0.4)	8.1 (7.5, 8.8)	4.9 (4.5, 5.3)	1.8 (1.6, 1.9)
Germany	573.1 (544.6, 601.6)	10 (9.5, 10.5)	3.4 (3.2, 3.6)	27.3 (25.9, 28.7)	111.3 (105.8, 116.9)	6.8 (6.4, 7.1)	46 (43.7, 48.3)	70.4 (66.9, 73.9)	5.4 (5.2, 5.7)	186.8 (177.5, 196.1)	78.2 (74.3, 82.1)	27.4 (26, 28.8)
Greece	70.4 (64.7, 76)	0.6 (0.6, 0.7)	1.4 (1.2, 1.5)	3.2 (3, 3.5)	13.2 (12.1, 14.2)	1 (0.9, 1.1)	6.1 (5.6, 6.6)	8.2 (7.5, 8.8)	0.6 (0.5, 0.6)	23.3 (21.4, 25.2)	10.1 (9.3, 10.9)	2.7 (2.5, 2.9)
Iceland	2.3 (2.1, 2.5)	0 (0, 0.1)	0 (0, 0)	0.2 (0.1, 0.2)	0.3 (0.3, 0.4)	0 (0, 0)	0.2 (0.1, 0.2)	0.3 (0.3, 0.3)	0 (0, 0)	0.7 (0.7, 0.8)	0.4 (0.4, 0.5)	0.1 (0.1, 0.1)
Ireland	33.3 (30.7, 36)	0.6 (0.6, 0.7)	0.2 (0.1, 0.2)	1.8 (1.7, 2)	4.4 (4.1, 4.8)	0.2 (0.2, 0.2)	2 (1.8, 2.1)	4.5 (4.1, 4.8)	0.4 (0.4, 0.4)	10.5 (9.6, 11.3)	6.7 (6.2, 7.2)	2.1 (1.9, 2.2)
Israel	58.4 (53.8, 63.1)	0.3 (0.3, 0.3)	1.4 (1.3, 1.5)	2.2 (2.1, 2.4)	6.2 (5.7, 6.7)	0.3 (0.3, 0.3)	3.1 (2.8, 3.3)	5.7 (5.3, 6.2)	1.2 (1.1, 1.3)	17.7 (16.3, 19.1)	14.6 (13.5, 15.8)	5.6 (5.2, 6.1)
Italy	434.1 (334.4, 534.5)	4.2 (3.2, 5.2)	4.6 (3.6, 5.7)	17.4 (13.4, 21.5)	83.5 (64.3, 102.8)	6.3 (4.8, 7.7)	39.8 (30.6, 49)	49.8 (38.4, 61.4)	3.2 (2.4, 3.9)	150.2 (115.7, 184.9)	58.7 (45.2, 72.2)	16.5 (12.7, 20.3)
Kyrgyzstan	44 (40.5, 47.6)	0.4 (0.3, 0.4)	0.1 (0.1, 0.1)	2.5 (2.3, 2.7)	2.2 (2, 2.4)	0.1 (0.1, 0.1)	1.3 (1.2, 1.4)	5.6 (5.2, 6.1)	1.2 (1.1, 1.3)	13.5 (12.5, 14.6)	12.1 (11.2, 13.1)	5 (4.6, 5.4)
Latvia	12.7 (11.7, 13.8)	0.1 (0.1, 0.1)	0.1 (0.1, 0.1)	0.8 (0.7, 0.8)	2.5 (2.3, 2.7)	0.1 (0.1, 0.1)	0.9 (0.8, 1)	1.9 (1.8, 2.1)	0.1 (0.1, 0.1)	3.6 (3.3, 3.9)	1.8 (1.7, 2)	0.8 (0.7, 0.8)
Lithuania	18.4 (16.9, 19.8)	0.3 (0.3, 0.3)	0.3 (0.3, 0.3)	1.1 (1, 1.2)	3.6 (3.3, 3.9)	0.2 (0.2, 0.2)	1.3 (1.2, 1.4)	2.9 (2.6, 3.1)	0.2 (0.2, 0.2)	5 (4.6, 5.4)	2.6 (2.4, 2.8)	1 (0.9, 1)
Macedonia	14.1 (12.9, 15.2)	0.1 (0.1, 0.1)	0.2 (0.2, 0.2)	0.6 (0.6, 0.7)	2 (1.9, 2.2)	0.1 (0.1, 0.1)	0.8 (0.8, 0.9)	2.1 (1.9, 2.3)	0.2 (0.1, 0.2)	5 (4.6, 5.4)	2.3 (2.1, 2.5)	0.7 (0.7, 0.8)
Moldova	27.2 (25.1, 29.4)	0.2 (0.2, 0.2)	0.1 (0.1, 0.1)	0.5 (0.4, 0.5)	3.4 (3.1, 3.7)	0.1 (0.1, 0.1)	1.6 (1.5, 1.8)	4.6 (4.3, 5)	0.3 (0.3, 0.3)	10.9 (10, 11.8)	4.2 (3.9, 4.5)	1.3 (1.2, 1.5)

Netherlands	115.7 (106.4, 124.9)	1.7 (1.6, 1.8)	0.6 (0.6, 0.7)	5.1 (4.7, 5.5)	20.8 (19.2, 22.5)	0.9 (0.9, 1)	9 (8.3, 9.7)	14.9 (13.7, 16.1)	1.1 (1, 1.2)	37.1 (34.1, 40.1)	18.6 (17.1, 20.1)	5.7 (5.3, 6.2)
Norway	36.6 (33.7, 39.5)	0.8 (0.7, 0.8)	0.3 (0.3, 0.3)	1.6 (1.5, 1.7)	5.6 (5.2, 6.1)	0.3 (0.2, 0.3)	2.6 (2.4, 2.8)	4.5 (4.2, 4.9)	0.4 (0.4, 0.4)	12.3 (11.4, 13.3)	6.2 (5.7, 6.7)	2 (1.8, 2.2)
Poland	255.5 (235, 275.9)	2.4 (2.2, 2.6)	2 (1.8, 2.1)	10.6 (9.8, 11.5)	46.1 (42.4, 49.8)	2 (1.8, 2.1)	18.2 (16.8, 19.7)	35.3 (32.4, 38.1)	2.6 (2.4, 2.8)	87.2 (80.2, 94.1)	36.7 (33.8, 39.6)	12.5 (11.5, 13.5)
Portugal	68.8 (63.3, 74.3)	0.8 (0.8, 0.9)	0.7 (0.6, 0.7)	3.4 (3.1, 3.7)	13.8 (12.7, 14.9)	0.8 (0.7, 0.9)	5.7 (5.2, 6.1)	9.6 (8.9, 10.4)	0.6 (0.5, 0.6)	21.3 (19.6, 23)	9.5 (8.7, 10.2)	2.7 (2.4, 2.9)
Romania	129.9 (119.5, 140.2)	1.3 (1.2, 1.5)	1.2 (1.1, 1.3)	6.1 (5.6, 6.6)	23 (21.2, 24.9)	1.1 (1, 1.2)	9.6 (8.8, 10.4)	17.6 (16.2, 19)	1.2 (1.1, 1.3)	42.5 (39.1, 45.9)	19.9 (18.3, 21.5)	6.2 (5.7, 6.7)
Serbia	59 (54.3, 63.7)	0.5 (0.5, 0.6)	0.4 (0.4, 0.4)	1.8 (1.6, 1.9)	10.8 (9.9, 11.6)	0.3 (0.3, 0.4)	3.8 (3.5, 4.1)	8.1 (7.5, 8.8)	0.5 (0.5, 0.6)	20.4 (18.7, 22)	9.4 (8.7, 10.2)	2.8 (2.6, 3)
Slovakia	36.9 (33.9, 39.8)	0.1 (0.1, 0.1)	0.3 (0.2, 0.3)	2 (1.9, 2.2)	6 (5.5, 6.4)	0.2 (0.2, 0.2)	2.4 (2.2, 2.6)	5.4 (5, 5.8)	0.4 (0.4, 0.4)	12.7 (11.7, 13.7)	5.4 (5, 5.8)	1.9 (1.7, 2)
Slovenia	14 (12.9, 15.2)	0.2 (0.2, 0.2)	0.1 (0.1, 0.1)	0.7 (0.6, 0.8)	2.7 (2.5, 2.9)	0.1 (0.1, 0.1)	1.1 (1, 1.2)	1.9 (1.7, 2)	0.1 (0.1, 0.1)	4.5 (4.1, 4.8)	2 (1.8, 2.2)	0.7 (0.6, 0.7)
Spain	347.4 (332.9, 362.3)	3.3 (3.2, 3.5)	2.7 (2.6, 2.8)	18.5 (17.8, 19.3)	58.4 (55.9, 60.9)	4.1 (3.9, 4.3)	28.8 (27.6, 30)	43.5 (41.7, 45.4)	2.7 (2.6, 2.9)	121.1 (116, 126.3)	49.8 (47.8, 52)	14.4 (13.8, 15)
Sweden	65.8 (62.2, 69.6)	1 (1, 1.1)	0.3 (0.3, 0.3)	2.8 (2.6, 2.9)	11.9 (11.3, 12.6)	0.6 (0.5, 0.6)	4.6 (4.3, 4.8)	8.6 (8.1, 9.1)	0.8 (0.7, 0.8)	20.7 (19.5, 21.8)	10.8 (10.2, 11.4)	3.8 (3.6, 4.1)
Switzerland	58.4 (53.7, 63.1)	1.3 (1.2, 1.4)	0.3 (0.2, 0.3)	2.6 (2.4, 2.8)	9.6 (8.9, 10.4)	0.5 (0.5, 0.6)	4.6 (4.2, 5)	7.2 (6.6, 7.7)	0.6 (0.5, 0.6)	20.4 (18.8, 22)	8.3 (7.6, 9)	3 (2.8, 3.2)
Tajikistan	64.4 (59.2, 69.5)	0.4 (0.4, 0.5)	0.1 (0.1, 0.1)	1 (1, 1.1)	2.4 (2.2, 2.6)	0.1 (0.1, 0.1)	1.3 (1.2, 1.4)	8.2 (7.5, 8.8)	2 (1.8, 2.1)	20.4 (18.8, 22)	19.5 (18, 21.1)	9 (8.3, 9.7)
Ukraine	295.2 (271.6, 318.8)	2.8 (2.6, 3.1)	3.1 (2.8, 3.3)	10.9 (10.1, 11.8)	48 (44.2, 51.9)	2.1 (1.9, 2.2)	19.7 (18.1, 21.3)	48.7 (44.8, 52.6)	2.6 (2.4, 2.8)	98.5 (90.6, 106.4)	44.7 (41.1, 48.3)	14 (12.9, 15.1)
United Kingdom	490.8 (411.4, 570.9)	5.4 (4.5, 6.3)	2.1 (1.8, 2.5)	23.3 (19.5, 27.1)	80.5 (67.5, 93.6)	4.1 (3.5, 4.8)	35.1 (29.5, 40.9)	62.4 (52.3, 72.6)	5.4 (4.5, 6.3)	162.8 (136.4, 189.3)	81.7 (68.5, 95.1)	27.8 (23.3, 32.4)
South-East Asia												
Bhutan	5.7 (5.5, 6)	0 (0, 0)	0 (0, 0)	0.1 (0.1, 0.1)	0.3 (0.3, 0.3)	0 (0, 0)	0.2 (0.2, 0.2)	0.7 (0.6, 0.7)	0.1 (0.1, 0.1)	2.4 (2.3, 2.5)	1.4 (1.4, 1.5)	0.5 (0.4, 0.5)
India	10281 (9853.2, 10722.6)	26.6 (25.5, 27.7)	36.9 (35.4, 38.5)	1.7 (1.6, 1.8)	641.8 (615.1, 669.4)	21.5 (20.6, 22.4)	376.8 (361.1, 393)	1570.7 (1505.3, 1638.1)	183.6 (175.9, 191.5)	4050.2 (3881.6, 4224.1)	2552.8 (2446.5, 2662.4)	818.5 (784.5, 853.7)
North Korea	192.1 (184.1, 200.3)	1.6 (1.5, 1.6)	1.4 (1.3, 1.4)	1.2 (1.1, 1.2)	18.6 (17.8, 19.4)	0.7 (0.7, 0.7)	9.7 (9.3, 10.1)	31.7 (30.4, 33)	2.7 (2.6, 2.8)	62.1 (59.5, 64.7)	37.3 (35.7, 38.9)	12.7 (12.1, 13.2)
Thailand	520 (498.4, 542.3)	1.9 (1.8, 1.9)	5 (4.8, 5.2)	29.6 (28.4, 30.9)	60.6 (58.1, 63.2)	3.3 (3.1, 3.4)	36 (34.5, 37.6)	82.3 (78.9, 85.9)	5.4 (5.2, 5.6)	182.1 (174.5, 189.9)	87.7 (84.1, 91.5)	26.1 (25, 27.2)
Timor-Leste	9.8 (9.4, 10.2)	0 (0, 0)	0 (0, 0)	0.1 (0.1, 0.1)	0.4 (0.4, 0.4)	0 (0, 0)	0.2 (0.2, 0.2)	1.2 (1.2, 1.3)	0.3 (0.3, 0.3)	3 (2.9, 3.1)	3.3 (3.1, 3.4)	1.3 (1.2, 1.3)
Western Pacific												
Australia	206.3 (203, 209.6)	3.3 (3.3, 3.4)	0.9 (0.9, 0.9)	13.6 (13.4, 13.9)	28.3 (27.9, 28.8)	1.6 (1.6, 1.6)	15 (14.7, 15.2)	21.3 (20.9, 21.6)	2.6 (2.6, 2.6)	69.1 (68, 70.2)	37.3 (36.7, 37.9)	13.2 (13, 13.4)
Brunei	3.2 (2.8, 3.6)	0 (0, 0)	0.1 (0.1, 0.1)	0.2 (0.2, 0.2)	0.2 (0.2, 0.2)	0 (0, 0)	0.1 (0.1, 0.1)	0.5 (0.5, 0.6)	0 (0, 0.1)	1.1 (1, 1.2)	0.7 (0.6, 0.8)	0.2 (0.2, 0.3)
Cambodia	122.4 (108.2, 136.8)	0.1 (0.1, 0.1)	1.9 (1.6, 2.1)	1.7 (1.5, 1.9)	5.7 (5.1, 6.4)	0.1 (0.1, 0.2)	3.4 (3, 3.8)	16.8 (14.9, 18.8)	2.7 (2.4, 3.1)	43.4 (38.3, 48.5)	33.9 (29.9, 37.8)	12.7 (11.2, 14.1)
China	10305.6 (7829.9, 12795.6)	47.8 (36.3, 59.4)	33.6 (25.5, 41.7)	104.4 (79.3, 129.6)	1004.1 (762.9, 1246.8)	50.4 (38.3, 62.6)	733.9 (557.6, 911.2)	1513.8 (1150.1, 1879.5)	112.3 (85.3, 139.5)	4371 (3321, 5427.1)	1750.6 (1330.1, 2173.6)	583.7 (443.4, 724.7)
Fiji	6.6 (5.8, 7.3)	0 (0, 0)	0.1 (0.1, 0.1)	0.3 (0.2, 0.3)	0.5 (0.4, 0.6)	0 (0, 0)	0.1 (0.1, 0.1)	1.5 (1.3, 1.7)	0.1 (0.1, 0.2)	1.6 (1.4, 1.8)	1.7 (1.5, 1.9)	0.6 (0.6, 0.7)
Japan	925.8 (818.3, 1034.6)	13.5 (11.9, 15.1)	4 (3.6, 4.5)	57.8 (51.1, 64.6)	201.5 (178.1, 225.2)	17.6 (15.6, 19.7)	98.6 (87.2, 110.2)	107.5 (95.1, 120.2)	6.9 (6.1, 7.7)	266.9 (235.9, 298.2)	117.4 (103.7, 131.2)	34.1 (30.1, 38.1)
Laos	53.3 (47.1, 59.5)	0.1 (0.1, 0.1)	0 (0, 0)	0.5 (0.4, 0.5)	2.4 (2.1, 2.6)	0.1 (0, 0.1)	1.2 (1.1, 1.3)	7.6 (6.7, 8.5)	1.3 (1.1, 1.4)	18.9 (16.7, 21.2)	15.6 (13.8, 17.4)	5.7 (5, 6.3)

Mongolia	24 (21.2, 26.8)	0.2 (0.1, 0.2)	0.1 (0.1, 0.1)	0.9 (0.8, 1)	1.1 (1, 1.2)	0 (0, 0)	0.6 (0.5, 0.7)	3.3 (2.9, 3.7)	0.6 (0.5, 0.6)	8.4 (7.4, 9.3)	6.1 (5.4, 6.8)	2.7 (2.4, 3)
Philippines	802.1 (709, 896.4)	4.4 (3.9, 5)	2.4 (2.1, 2.6)	28.7 (25.3, 32)	46 (40.7, 51.4)	1.2 (1.1, 1.4)	21.8 (19.3, 24.4)	119 (105.2, 133)	16.5 (14.6, 18.4)	257.8 (227.9, 288.1)	228.7 (202.1, 255.5)	75.6 (66.8, 84.5)
Singapore	39.7 (37.7, 41.8)	0.3 (0.3, 0.4)	0.6 (0.6, 0.6)	5.6 (5.3, 5.9)	4.9 (4.6, 5.1)	0.2 (0.2, 0.2)	3.3 (3.1, 3.4)	5.9 (5.6, 6.2)	0.3 (0.3, 0.4)	12.1 (11.5, 12.7)	4.8 (4.5, 5)	1.7 (1.6, 1.8)
South Korea	409.1 (394.3, 424)	4 (3.8, 4.1)	30.3 (29.2, 31.4)	19.5 (18.8, 20.2)	58.1 (55.9, 60.2)	3.2 (3, 3.3)	33.5 (32.3, 34.7)	57.7 (55.6, 59.8)	2.6 (2.5, 2.7)	131.3 (126.6, 136.1)	54.1 (52.2, 56.1)	14.9 (14.3, 15.4)
Vietnam	712.5 (629.8, 796.2)	1.6 (1.4, 1.8)	4 (3.5, 4.5)	35.4 (31.3, 39.6)	55.6 (49.1, 62.1)	2.7 (2.4, 3)	29.5 (26, 32.9)	106.1 (93.8, 118.5)	11.9 (10.5, 13.3)	259.2 (229.1, 289.6)	149.8 (132.4, 167.4)	56.7 (50.1, 63.4)

Table. S9. Vaccine capacity of phase III COVID-19 candidate vaccines as announced by their manufacturers.

Vaccine	COVID-19 Vaccine developer/manufacturer	Year	Amount (billion)	Reference
BNT162	Pfizer	2020/2021	0.1/1.3	https://www.pfizer.com/news/press-release/press-release-detail/pfizer-and-biontech-announce-vaccine-candidate-against
mRNA-1273	Moderna, NIAID	2021	0.5~1	https://investors.modernatx.com/news-releases/news-release-details/moderna-announces-supply-agreement-ministry-public-health-supply
Gam-COVID-Vac	Gamaleya Research Institute	2021	0.5	https://sputnikvaccine.com/chn/newsroom/glava-voz-v-evrope-uveren-v-uspehe-tretej-fazy-issledovaniya-sputnik-v/; http://sputniknews.cn/society/202010201032337670/
Ad26.COV2.S	Janssen Pharmaceutical Companies	2021	1	https://www.jnj.com/johnson-johnson-initiates-pivotal-global-phase-3-clinical-trial-of-janssens-covid-19-vaccine-candidate
NVX-CoV2373	Novavax	2021	2	https://ir.novavax.com/node/15226/pdf

ChAdOx1 nCoV-19	AstraZeneca	2020/2021	0.4/3	https://www.astrazeneca.com/media-centre/press-releases/2020/astrazeneca-concludes-agreement-with-the-european-commission-for-the-supply-of-up-to-400-million-doses-of-azd1222-covid-19-vaccine.html
BBIBP-CorV /WIBP*	Sinopharm	2021	1	http://www.sinopharm.com/s/1223-4126-38630.html
CoronaVac*	Sinovac, Instituto Butantan	2021	0.18	https://revistapesquisa.fapesp.br/para-ganhar-tempo/
Anhui Zhifei vaccine*	Anhui Zhifei Longcom Biopharmaceutical/Institute of Microbiology, Chinese Academy of Sciences	2021	Not available	Not available
Ad5-nCoV*	CanSino Biological Inc	2021	Not available	Not available
COVAXIN	Bharat Biotech	2021	1	https://www.bharatbiotech.com/images/press/Bharat-Biotech-Inks-licensing-deal-with-washington-university-school-to-advance-COVID-19-intranasal-vaccine.pdf

*: The Chinese government has announced that the production capacity for those four vaccines in China is expected to reach 0.61 billion doses in 2020 and up to 1 billion in 2021.

Table. S10. Summary of the inclusion and exclusion criteria for clinical trials of COVID-19 vaccine, regarding measurement of pre-existing antibody in clinical trials.

Vaccine	Inclusion and exclusion criteria	Reference
CoronaVac	Anyone who tests positive in serum IgG or IgM antibodies to SARS-CoV-2 were excluded.	1. Yanjun Zhang et al. Immunogenicity and Safety of a SARS-CoV-2 Inactivated Vaccine in Healthy Adults Aged 18-59 years: Report of the Randomized, Double-blind, and Placebo-controlled Phase 2 Clinical Trial, MedRxiv.
Ad5-nCoV	Anyone who tests positive in serum IgG or IgM antibodies to SARS-CoV-2 were excluded.	1. Feng-Cai Zhu et al. Safety, tolerability, and immunogenicity of a recombinant adenovirus type-5 vectored COVID-19 vaccine: a dose-escalation, open-label, non-randomised, first-in-human trial, Lancet. 2. Feng-Cai Zhu et al. Immunogenicity and safety of a recombinant adenovirus type-5-vectored COVID-19 vaccine in healthy adults aged 18 years or older: a randomised, double-blind, placebocontrolled, phase 2 trial, Lancet.
BBIBP-CorV	Anyone who tests positive in serum IgG or IgM antibodies to SARS-CoV-2 were excluded.	1. Shengli Xia et al. Safety and immunogenicity of an inactivated SARS-CoV-2 vaccine, BBIBP-CorV: a randomised, double-blind, placebo-controlled, phase 1/2 trial, Lancet Infect Dis.
WBIP	Anyone who tests positive in serum IgG or IgM antibodies to	1. Shengli Xia et al. Effect of an Inactivated Vaccine Against

SARS-CoV-2 were excluded.

SARS-CoV-2 on Safety and Immunogenicity Outcomes, JAMA.

Ad26.COVS.S	All participants were screened by locally available serological assays for detection of previous infection with SARS-CoV-2 with a maximum of 25 seropositive participants allowed between Cohort 1a and Cohort 3 (N=771).	1. Jerald Sadoff et al. Safety and immunogenicity of the Ad26.COVS.S COVID-19 vaccine candidate: interim results 1 of a phase 1/2a, double-blind, randomized, placebo-controlled trial, MedRxiv.
Gam-COVID-Vac	Included adult volunteers who had a negative RT-PCR results and tested negative in IgG and IgM antibodies to SARS-CoV-2.	1. Denis Y Logunov et al. Safety and immunogenicity of an rAd26 and rAd5 vector-based heterologous prime-boost COVID-19 vaccine in two formulations: two open, non-randomised phase 1/2 studies from Russia, Lancet.
BNT162b1, BNT162b2	Anyone who tests positive in serum IgG or IgM antibodies to SARS-CoV-2 at the screening visit was excluded.	1. Mark J. Mulligan et al. Phase I/II study of COVID-19 RNA vaccine BNT162b1 in adults, Nature. 2. Ugur Sahin et al. COVID-19 vaccine BNT162b1 elicits human antibody and TH1 T-cell responses, Nature. 3. Edward E. Walsh et al. Safety and Immunogenicity of Two RNA-Based Covid-19 Vaccine Candidates, New England Journal of Medicine.
mRNA-1273	The confirmation of SARS-CoV-2 infection was not performed by serology test or RT-PCR test before enrollment.	1. L.A. Jackson et al. An mRNA Vaccine against SARS-CoV-2 Preliminary Report, New England Journal of Medicine. 2. E.J. Anderson et al. Safety and Immunogenicity of SARS-CoV-2 mRNA-1273 Vaccine in Older Adults, New England

NVX-CoV2373	Anyone who tested positive at screening by RT-PCR or ELISA along with participants exposed to persons with confirmed SARS-CoV-2 were excluded.	Journal of Medicine. 1. C. Keech et al. Phase 1–2 Trial of a SARS-CoV-2 Recombinant Spike Protein Nanoparticle Vaccine, New England Journal of Medicine.
ChAdOx1 nCoV-19	Participants who had a history of laboratory confirmed COVID-19 or seropositivity for SARS-CoV-2 at screening once an antibody test became available were included before enrolment.	1. Pedro M Folegatti et al. Safety and immunogenicity of the ChAdOx1 nCoV-19 vaccine against SARS-CoV-2: a preliminary report of a phase 1/2, single-blind, randomised controlled trial, Lancet.

Figure. S1. Global and regional estimates of potential acceptance of a COVID-19 vaccine.

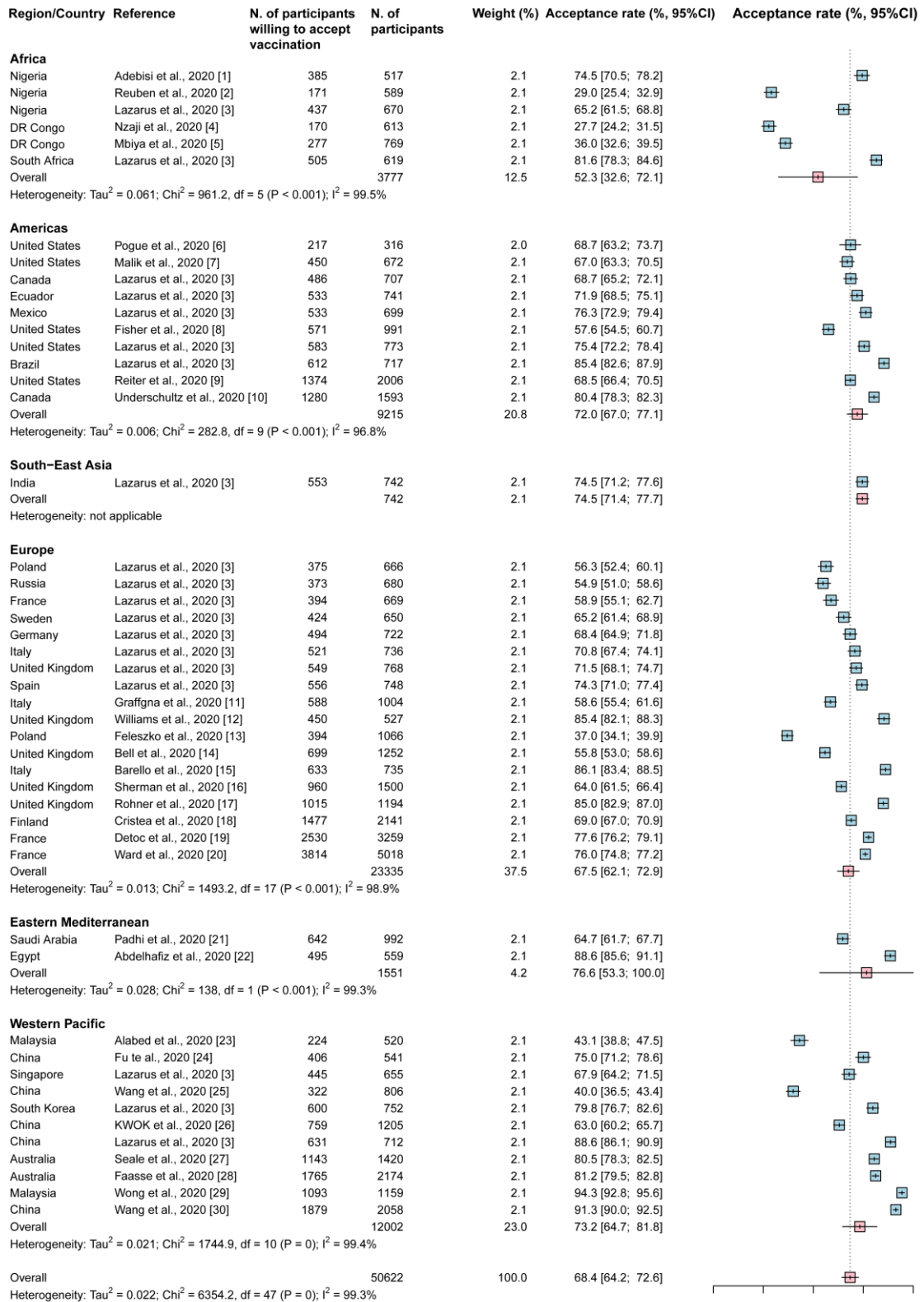


Figure. S2. Age distribution of target populations for COVID-19 vaccination program across regions, by goals of vaccination program.

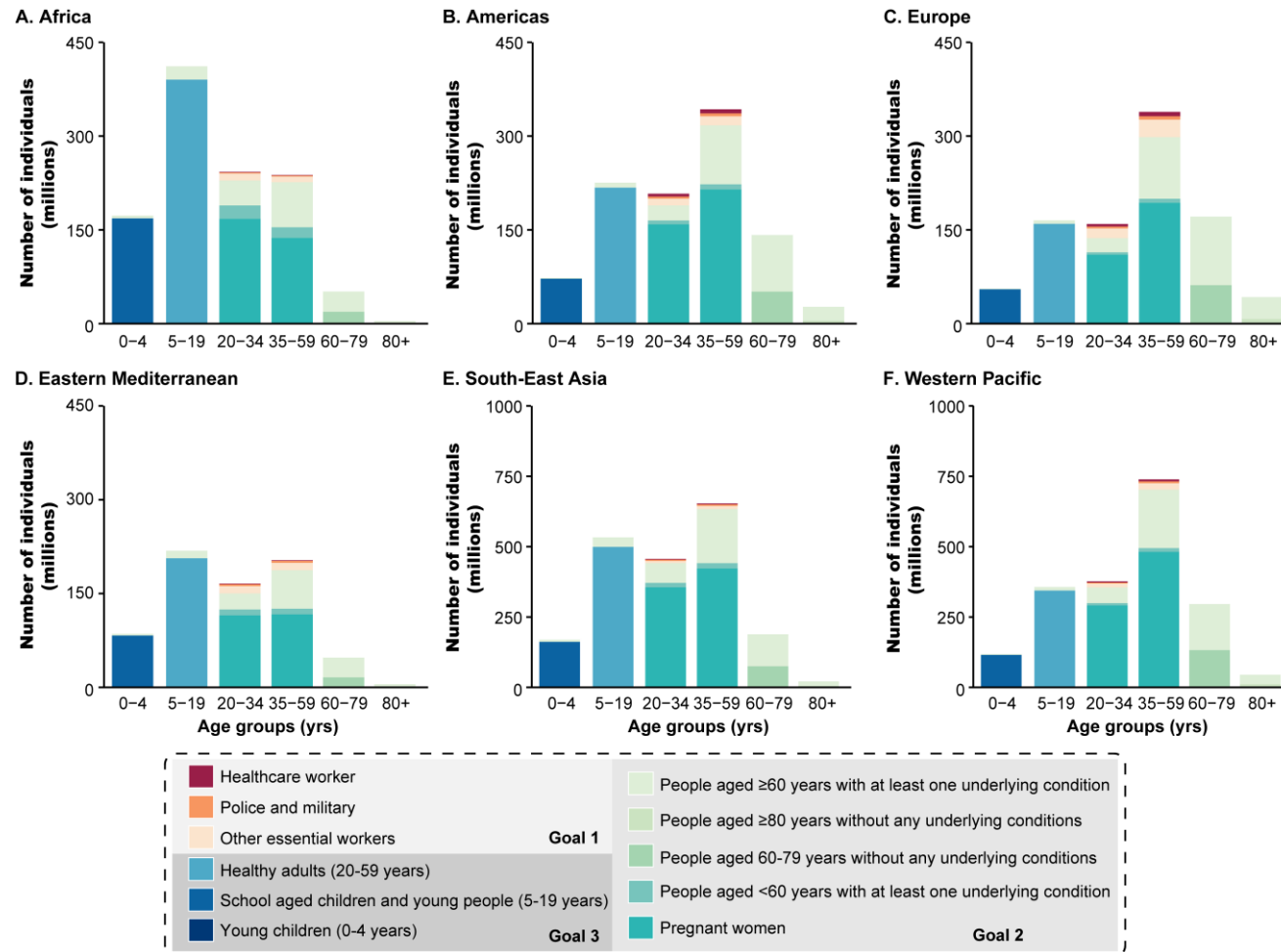


Figure. S3. National estimates of the size of each target population for COVID-19 vaccination in Africa, Americas and Western Pacific regions, by goals of vaccination program.

Note that three letters on the x-axis are ISO Alpha 3 Code.

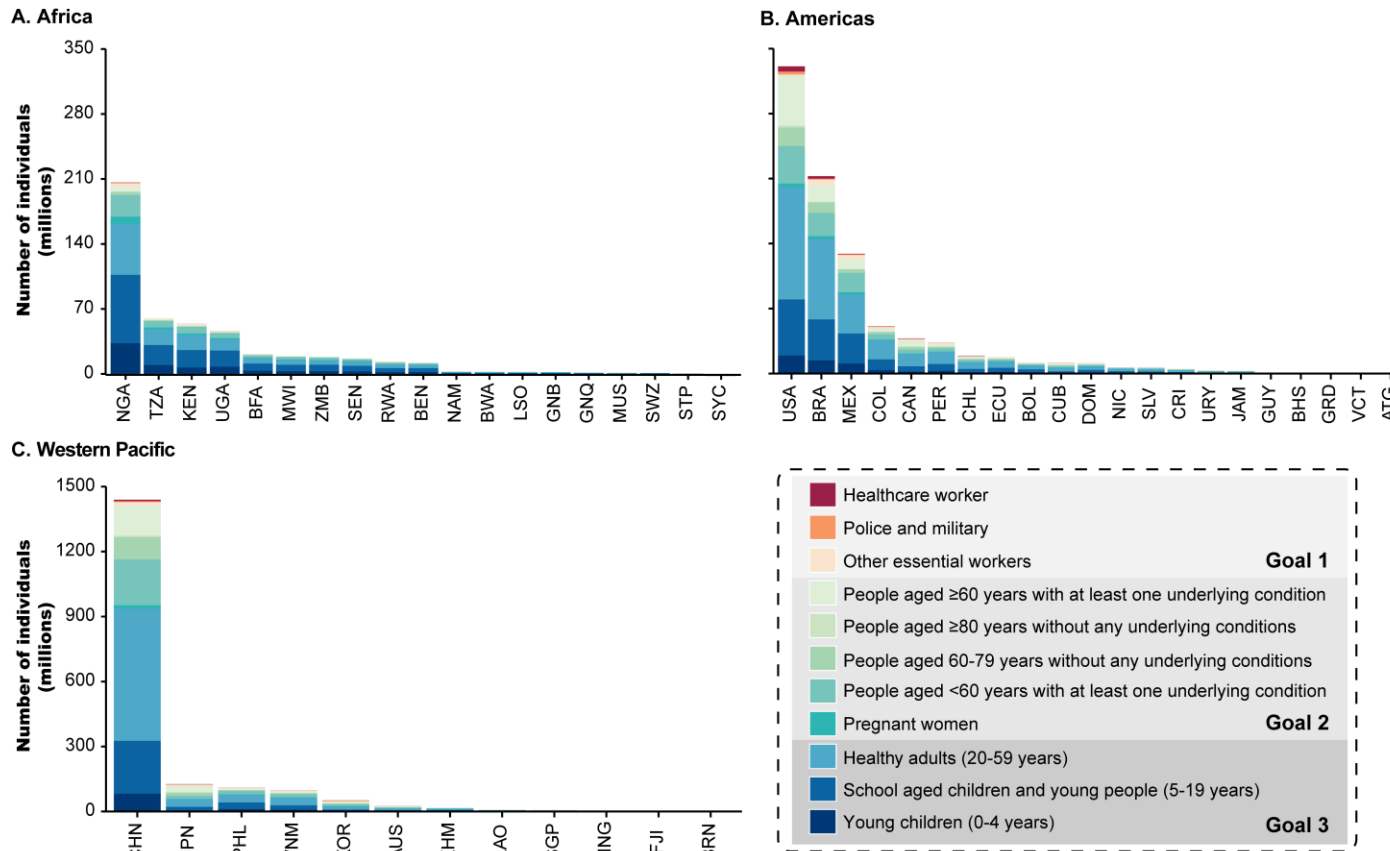
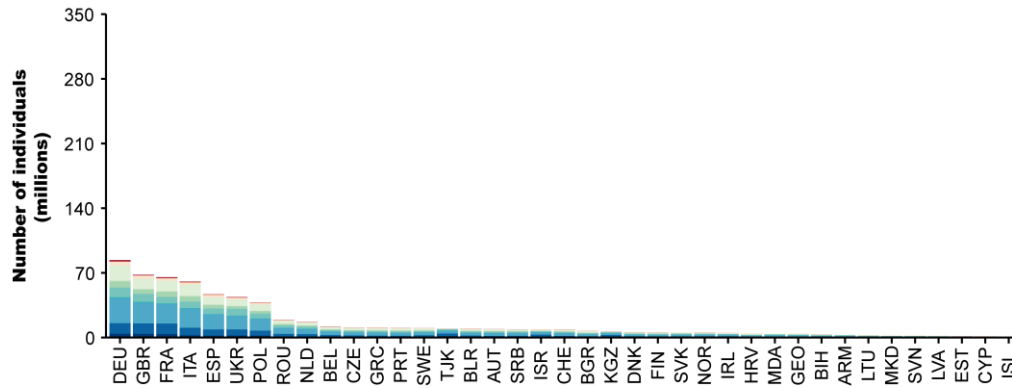


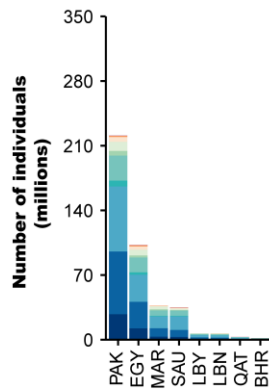
Figure. S4. National estimates of the size of each target population for COVID-19 vaccination in Europe, Eastern Mediterranean and South-East Asia regions, by goals of vaccination program.

Note that three letters on the x-axis are ISO Alpha 3 Code.

A. Europe



B. Eastern Mediterranean



C. South-East Asia

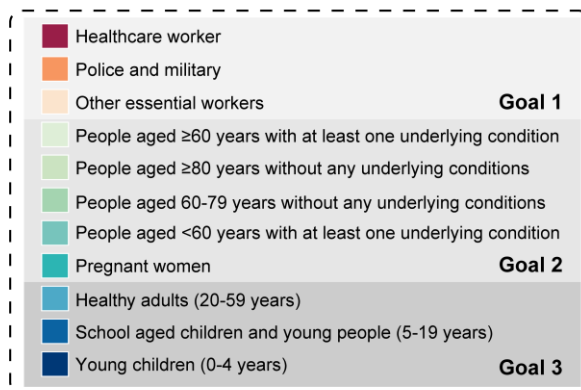
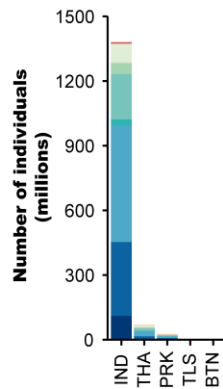


Figure. S5. Proportion of each target population for COVID-19 vaccination in Africa, Americas and Western Pacific regions.
 Note that three letters on the x-axis are ISO Alpha 3 Code.

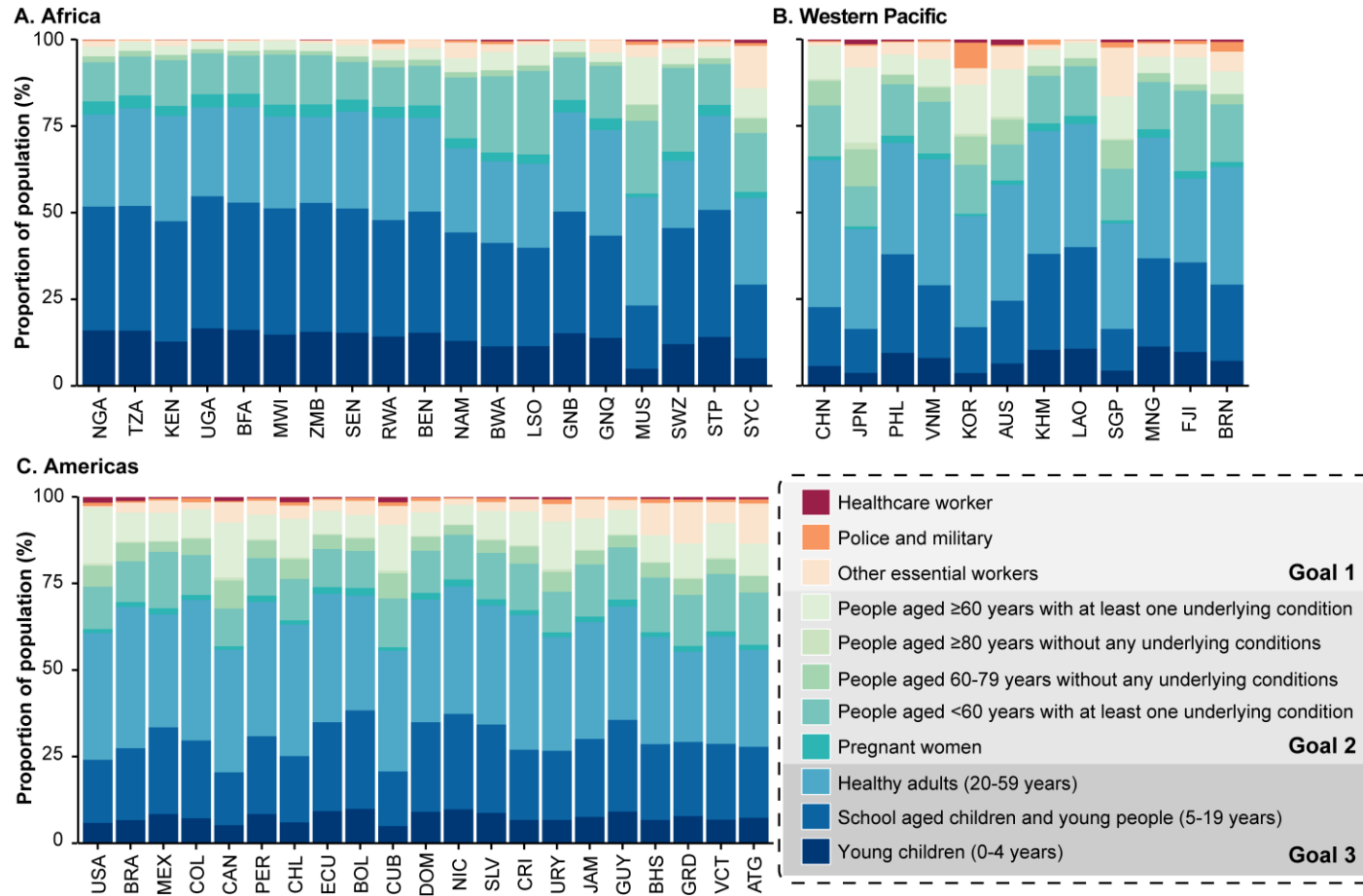
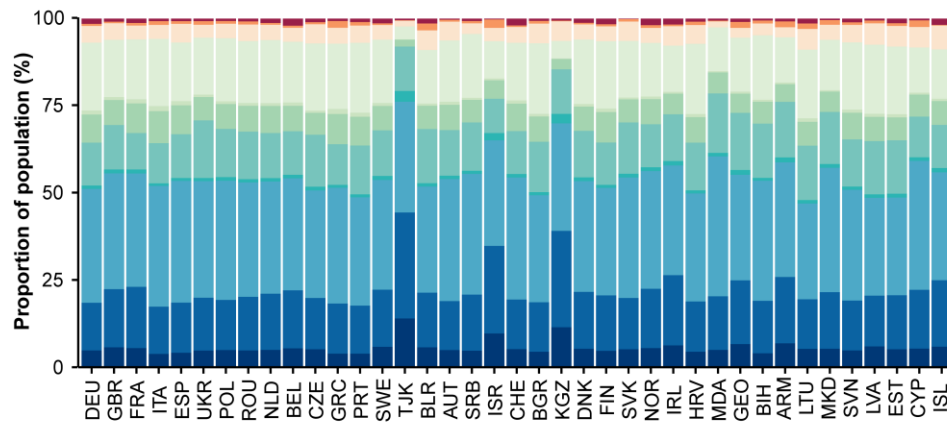


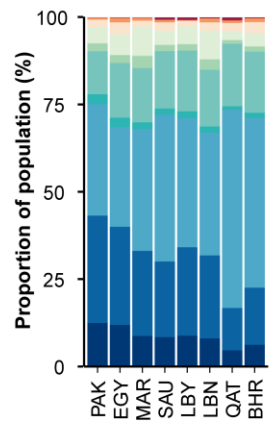
Figure. S6. Proportion of each target population for COVID-19 vaccination in Europe, Eastern Mediterranean and South–East Asia regions.

Note that three letters on the x-axis are ISO Alpha 3 Code.

A. Europe



B. Eastern Mediterranean



C. South-East Asia

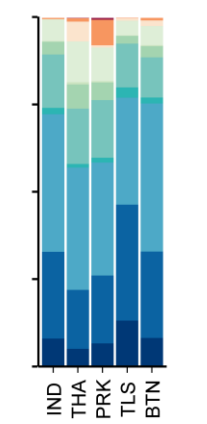
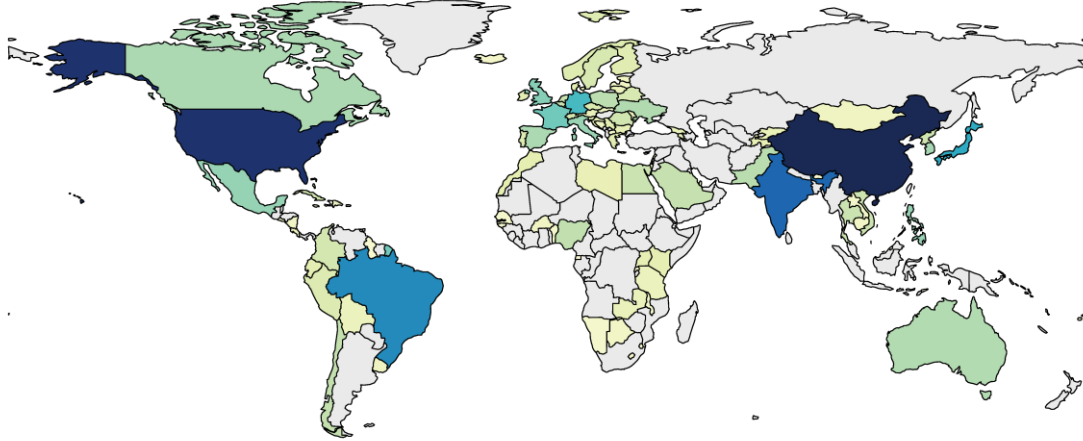


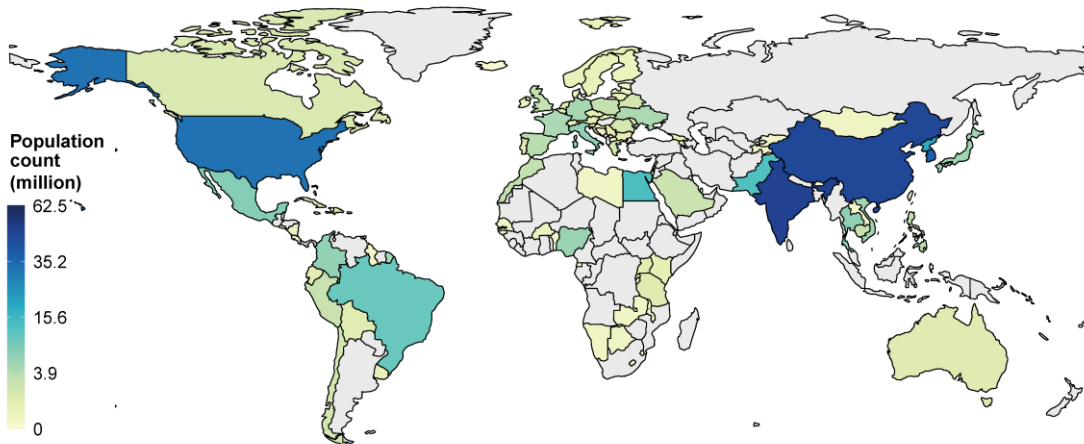
Figure. S7. The size of essential workers in 104 countries data on each target population from official statistics.

Note that the grey color refers to there is no data available on each target population.

A. Target population to maintain an effective healthcare system



B. Target population to maintain national and social security



C. Target population to maintain normal living supplies

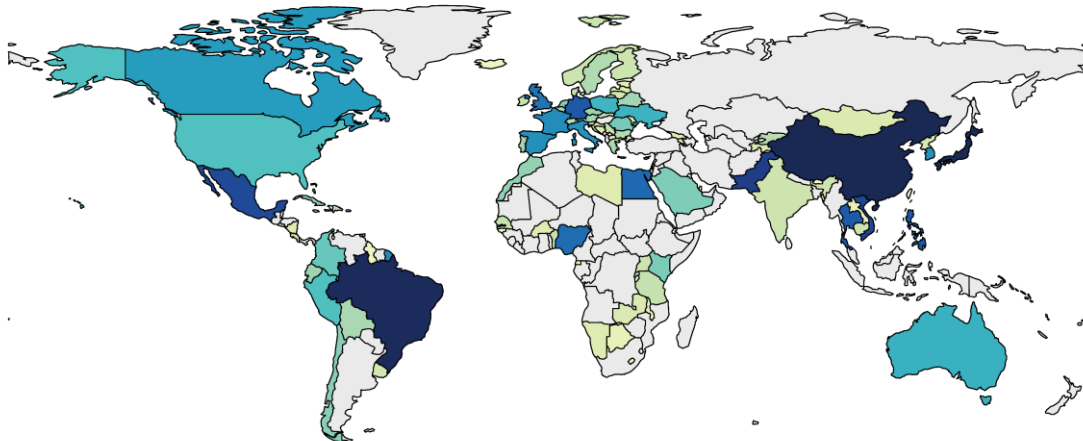
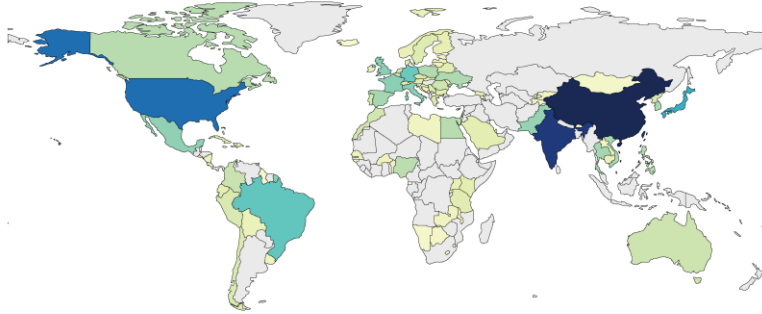


Figure. S8. The size of target population to reduce severe COVID-19 disease, to reduce symptomatic infections and/or to stop virus transmission in 104 countries with data on each target population from official statistics.

Note that the grey color refers to there is no data available on each target population.

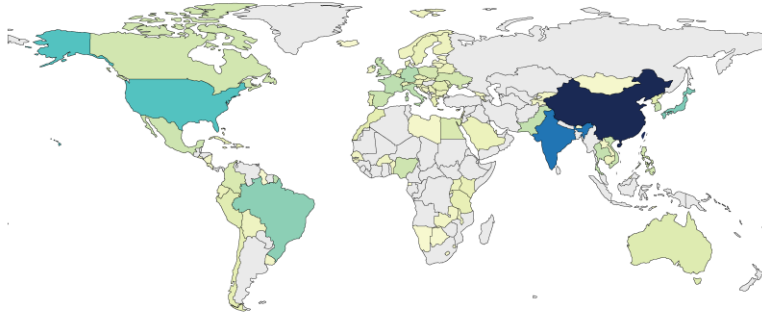
A. People aged ≥ 60 years with at least one underlying condition



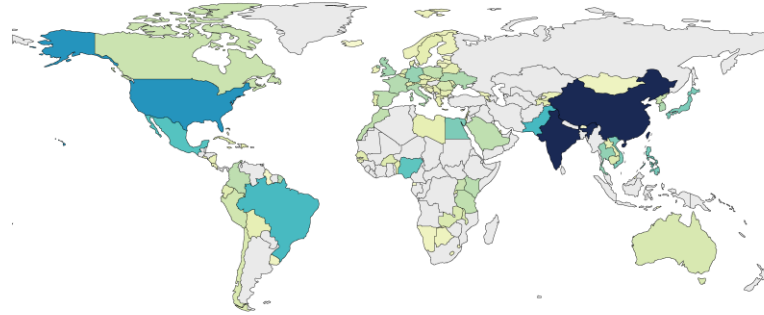
B. People aged ≥ 80 years without any underlying conditions



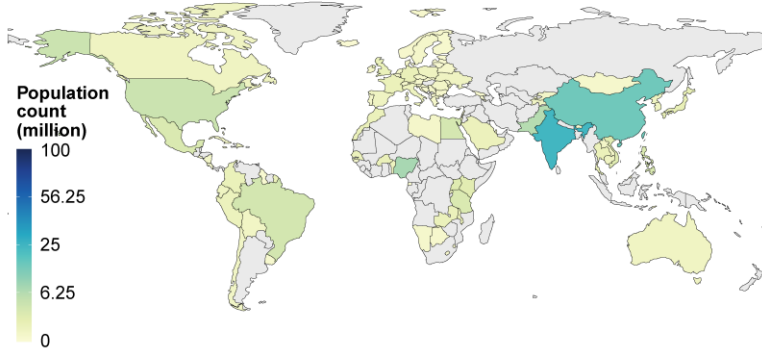
C. People aged 60-79 years without any underlying conditions



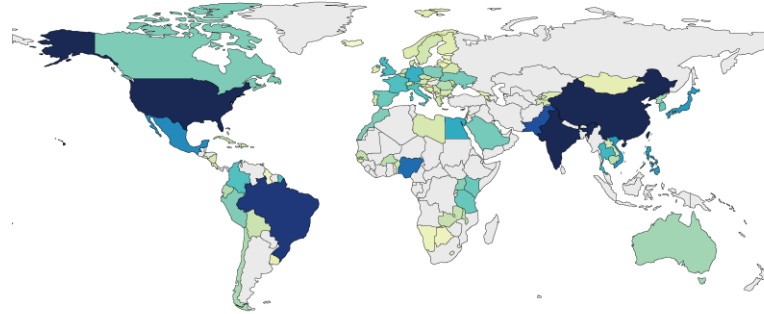
D. People aged 20-59 years with at least one underlying condition



E. Pregnant women



F. Healthy adults (20-59 years)



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