

THE LANCET Oncology

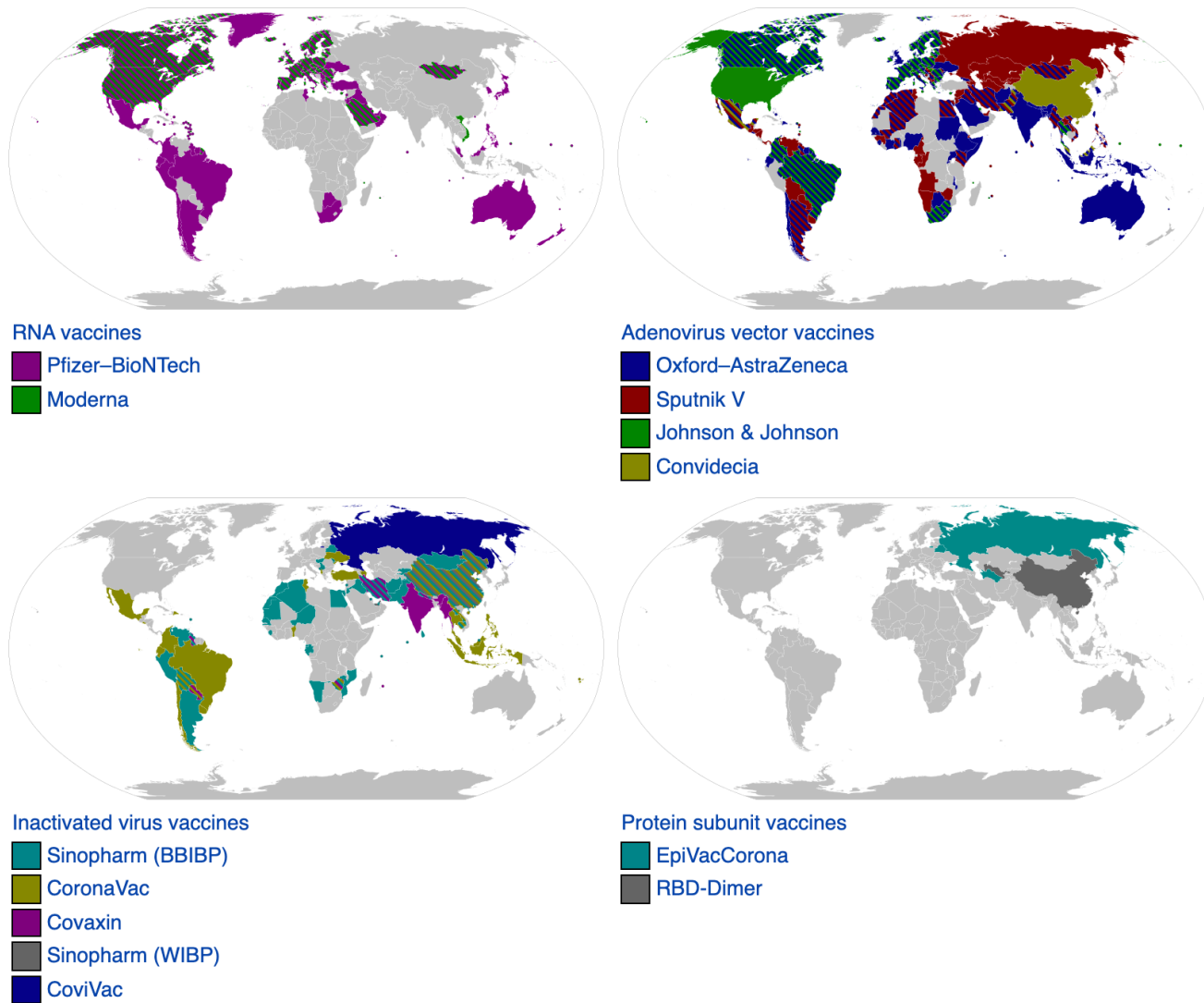
Supplementary appendix

This appendix formed part of the original submission. We post it as supplied by the authors.

Supplement to: Yusuf A, Sarfati D, Booth CM, et al. Cancer and COVID-19 vaccines: a complex global picture. *Lancet Oncol* 2021; published online April 27. [http://dx.doi.org/10.1016/S1470-2045\(21\)00244-8](http://dx.doi.org/10.1016/S1470-2045(21)00244-8).

Country	Pfizer BioNTech	Moderna	Covaxin	Sputnik V	Sinopharm (WB/WIBP)	CoronaVac	Convidecia	Johnson & Johnson	Oxford Astra-Zeneca	Healthcare workers	Cancer patients	Vaccination strategy?	Data collection?
Low and Middle Income Countries													
Argentina					X				X	2 nd Dose	2 nd Dose	National	National
Bolivia					X				X			No	Hospital
Brazil			X							2 nd Dose		Mixed	Hospital
Colombia								X	X	1 st Dose		National	National
Costa Rica									X	2 nd Dose		National	No
El Salvador												No	No
Ghana			X	X						1 st Dose		National	No
Guatemala													
India										2 nd Dose	1 st Dose	National	National
Iraq													
Jordan				X						Mixed	1 st Dose	National	National
Kenya										1 st Dose		National	National
Lebanon				X					X	1 st Dose	1 st Dose	National	National
Malaysia										2 nd Dose		National	National
Mexico				X		X	X					No	No
Myanmar				X					X	1 st Dose		Mixed	Hospital
Nigeria													
Pakistan										2 nd Dose		National	National
Peru	X									NA		National	National
Philippines						X			X			National	National
Rwanda								X	X	Mixed		No	National
South Africa	X								X	1 st Dose		National	No
Sri Lanka	X									1 st Dose		National	No
Turkey										2 nd Dose	1 st dose	National	National
Uruguay						X						National	National
Venezuela										Mixed		No	Hospital
Zambia													
High Income Countries													
Canada										1 st dose	1 st dose	National	National
Chile									X	Mixed	1 st Dose	National	National
NZ								X	X	1 st dose		National	National
Singapore		X				X				Mixed		National	No
UK										1 st Dose	1 st Dose	National	National
USA										Mixed	Mixed	Mixed	Hospital

e-appendix Table 1: Overview of vaccination availability in countries that participated in the survey. Countries in grey do not have access to any vaccines to date. Green boxes indicate vaccines available. A blue cross indicates that a vaccine has been approved for emergency use, but not available; a red cross indicates that a deal has been reached with this company, and doses are in the process of being sent. The last four columns indicate whether cancer healthcare workers and/or patients are being vaccinated – and if so (green) at what level (1st and/or 2nd dose); whether the country follows a vaccination strategy; and how vaccination data is collected. Date collected from COVID-19 and Cancer Taskforce and other open source literature up to and including 31st March 2021.



e-appendix Figure 1 Map of type and global availability of COVID-19 vaccines (as of 31 March 2021)

e-appendix Table 2 Open source intelligence on vaccine in the countries used to supplement survey

ARGENTINA – SINOPHARM, 1 million deal, FEB 26TH - <https://www.reuters.com/article/us-health-coronavirus-argentina-vaccine/argentina-receives-first-delivery-of-sinopharm-vaccines-idUSKBN2AQ06T>

BOLIVIA – ASTRA, contract with India’s Serum Institute for 5 mil doses, JAN 13TH - <https://www.reuters.com/article/healthbolivia-india-idUSKBN29I28V>

BRAZIL – COVAXIN, contract with Bharat Biotech for 20 mil doses, FEB 26TH - https://www.business-standard.com/article/current-affairs/brazil-signs-covid-vaccine-deal-with-bharat-biotech-for-20-mn-covaxin-doses-121022600141_1.html

COLOMBIA – J&J, contract with Janssen for 9 mil doses, DEC 31ST - <https://www.reuters.com/article/uk-health-coronavirus-colombia-vaccine-idUKKBN295013>

AstraZeneca, approved for emergency use, waiting for 61.5 million vaccines, 10mil doses of which are Astra, FEB 24TH - <https://news.yahoo.com/colombia-approves-emergency-astrazeneca-coronavirus-002049404.html>

COSTA RICA – AstraZeneca, 35.3 mil doses sent to Latin America via the Covax mechanism including Costa from mid-feb to June, FEB 1ST - <https://ticotimes.net/2021/02/01/covax-will-ship-astrazeneca-vaccines-to-costa-rica-latin-america-in-mid-february>

EL SALVADOR – No deal yet, but conversations with SPUTNIK - <https://brazilian.report/coronavirus-brazil-live-blog/2021/02/11/guatemala-to-receive-covid-19-vaccines-from-russia-in-march/>

GHANA – OXFORD-ASTRAZENECA 600,000 doses rolled out nationally - <https://www.bbc.co.uk/news/world-africa-56239136>

GUATEMALA – No deal yet, but Sputnik deal negotiated - <https://brazilian.report/coronavirus-brazil-live-blog/2021/02/11/guatemala-to-receive-covid-19-vaccines-from-russia-in-march/>

INDIA – COVAXIN and ASTRAZENECA - <https://www.bbc.co.uk/news/world-asia-india-55748124>

IRAQ – No deal yet - http://www.xinhuanet.com/english/2021-02/01/c_139713769.htm

JORDAN – SPUTNIK, 1 thousand doses sent to Gaza, FEB 17TH - <http://www.jordantimes.com/news/region/first-batch-covid-vaccine-arrives-gaza>

KENYA – <https://www.afro.who.int/news/kenya-receives-covid-19-vaccines-and-launches-landmark-national-campaign>

LEBANON – SPUTNIK, approved for emergency use, however none ordered, FEB 5TH - <https://www.reuters.com/article/health-coronavirus-lebanon-vaccine-int-idUSKBN2A522Z>

ASTRAZENECA, ordered 2.73 mil doses via Covax mechanism, 2.1 from Pfizer, so rest from Astra likely “COVAX has notified Lebanese authorities that the first shipment of AstraZeneca vaccine would arrive in the last week of February”, JAN 30TH - <https://english.alarabiya.net/coronavirus/2021/01/30/Coronavirus-Lebanon-expects-to-receive-Pfizer-AstraZeneca-COVID-19-vaccine-shipments-in-February>

MALAYSIA – PFIZER to be rolled out, 24th Feb - <https://www.ft.com/content/1375400c-799a-4248-98e1-8a876926f885>

MEXICO – SPUTNIK, received 200,000 doses Monday 22nd feb, FEB 23RD - <https://apnews.com/article/pandemics-education-germany-coronavirus-pandemic-a701656afd29401f310eaf5b3e17c98e>

SINOVAC, also received 200,000 doses Saturday 20th feb, FEB 21ST - <https://www.msn.com/en-us/news/world/mexico-receives-200000-doses-of-chinas-sinovac-covid-19-vaccine/ar-BB1dRiHk>

MYANMAR – SPUTNIK, approved vaccine FEB 6TH - <https://www.rt.com/russia/514818-myanmar-approves-sputnik-vaccine/>

NIGERIA – ASTRAZENA to arrive, 28th Feb - <https://www.bbc.com/pidgin/tori-56228118>

PAKISTAN – PFIZER AND ASTRAZENECA, likely to get 17.1 mil doses via Covax mechanism till June. 7 mil doses of Astra during initial phase, rest from Pfizer (10.1) in second phase, FEB 18TH - <https://arynews.tv/en/pakistan-covid-19-vaccines-covax-astrazeneca-pfizer/>

Another article states that Pakistan will get 2.8 mil doses of Astra vaccine on March 2nd from COVAX, FEB 19TH -

<https://www.hindustantimes.com/world-news/pakistan-to-get-2-8-million-astrazeneca-covid-19-vaccine-doses-via-covax-program-101613719569662.html>

SPUTNIK, approved for emergency use, JAN 24th - <https://www.businesstoday.in/current/world/pakistan-approves-sputnik-v-covid-vaccine-for-emergency-use/story/428939.html>

Another article says a Pakistani lab will soon receive Sputnik vaccine for commercial sale, FEB 15TH -

<https://www.khaleejtimes.com/coronavirus-pandemic/covid-vaccine-pakistan-lab-expects-sputnik-v-doses-for-commercial-sale-in-a-week>

CANSINO BIO, approved for emergency use, however none ordered, FEB 12TH - <https://www.reuters.com/article/us-health-coronavirus-pakistan-vaccine-e/exclusive-pakistan-approves-chinese-cansinobio-covid-19-vaccine-for-emergency-use-health-minister-idUSKBN2AC1FG?edition-redirect=ca>

PERU – <https://health.economictimes.indiatimes.com/news/pharma/peru-secures-23-1-million-future-coronavirus-vaccine-doses-from-pfizer-covax/79457254>

PHILIPPINES – ASTRAZENECA, set to receive 525,600 doses on Monday 29th feb, FEB 27TH -

<https://www.philstar.com/headlines/2021/02/27/2080786/philippines-get-first-doses-astrazeneca-covid-19-vaccine-monday>

SINOVAC, approved for emergency use, however none ordered, FEB 22ND - <https://news.abs-cbn.com/video/news/02/22/21/ph-approves-sinovac-covid-19-vaccine-for-emergency-use>

RWANDA – J&J AND ASTRAZENECA, set to receive 2.6 mil doses from Pfizer (500,000), J&J (1 mil) and Astra (1 mil) through the African Union’s African Vaccine Acquisition Task Team (AVATT) initiative by April, FEB 9TH - <https://www.newtimes.co.rw/news/rwanda-get-26-million-covid-19-vaccine-doses-through-au-framework>

SOUTH AFRICA – PFIZER, committed 20 mil doses to SA, expected end of first quarter of 2021, FEB 17TH - <https://www.bbc.co.uk/news/world-africa-55675806>

ASTRAZENECA, received 1 mil doses early in feb from India, FEB 17TH - <https://www.bbc.co.uk/news/world-africa-55675806>

SRI LANKA – ASTRAZENECA/COVISHIELD, received 500,000 Covishield doses gifted from India in late January. Has ordered ~13.5 mil Astra doses, FEB 25TH - <https://www.thehindu.com/news/international/sri-lanka-receives-500000-doses-of-covid-19-vaccines-from-india/article33933291.ece>

SYRIA – No deal yet - <https://www.aljazeera.com/news/2021/2/20/israel-paying-millions-to-supply-covid-19-doses-to-syria>

TURKEY – SINOVAC - <https://www.dailysabah.com/turkey/turkeyexceeds-2-million-covid-19-vaccinations/news>

URUGUAY – SINOVAC, deal apparently reached along with Pfizer in January for supply, no details, JAN 23RD - <https://en.mercopress.com/2021/01/23/uruguay-acquired-pfizer-and-sinovac-vaccines-details-will-be-announced-saturday>

VENEZUELA – SPUTNIC - <https://www.france24.com/en/live-news/20210218-venezuela-kicks-off-covid-vaccine-program>

ZAMBIA – 8.7 million doses of COVID-19 vaccines secured this month by the African Union - <https://allianceforscience.cornell.edu/blog/2021/01/zambia-to-receive-8-7-million-doses-of-covid-19-vaccines-under-au-initiative/>

CANADA – ASTRAZENECA, now approved, ordered 20 mil doses and due to receive 1.9mil from COVAX mechanism in first half of 2021, FEB 27TH - <https://uk.news.yahoo.com/canada-approves-astrazenecas-covid-19-000124343.html>

CHILE – ASTRAZENECA, approved for emergency use, however none ordered, JAN 27TH - <https://www.reuters.com/article/us-health-coronavirus-chile-astrazeneca-idUSKBN29W1SQ>

NEW ZEALAND – See <https://covid19.govt.nz/health-and-wellbeing/covid-19-vaccines/>. Novavax advanced purchase agreement also in place.

SINGAPORE – MODERNA, authorised and first shipment expected to arrive march, FEB 3RD - <https://www.channelnewsasia.com/news/singapore/moderna-covid-19-vaccine-singapore-authorized-hsa-first-shipment-14103204>

SINOVAC, received first shipment 23rd February, yet to be authorised, FEB 24TH - <https://sg.news.yahoo.com/singapore-first-shipment-sinovac-covid-vaccine-142835660.html>

UK - <https://www.nhs.uk/conditions/coronavirus-covid-19/coronavirus-vaccination/coronavirus-vaccine/>

USA - <https://www.bloomberg.com/graphics/covid-vaccine-tracker-global-distribution/>

e appendix Protocol 1 A protocol for monitoring of response to COVID19 vaccination in patients with solid organ and hematologic malignancy (adapted from Monin-Aldama L, *et al.* Interim results of the safety and immune-efficacy of 1 versus 2 doses of COVID-19 vaccine BNT162b2 for cancer patients in the context of the UK vaccine priority guidelines. medRxiv. 2021:2021.03.17.21253131 with permission).

Specific aims:

1. Determine immune response to COVID19 vaccination in patients with solid organ and hematologic malignancy
2. Determine duration of protective immunity to COVID19 in patients with solid organ and hematologic malignancy who receive COVID19 vaccination

Inclusion criteria

1. Diagnosis of solid organ or hematologic malignancy on active systemic treatment at the time of planned vaccination (chemotherapy, targeted therapy, immune checkpoint inhibitor therapy, endocrine therapy)
2. Age 18 or above
3. Written informed consent
4. Not yet received COVID19 vaccination or have received COVID19 vaccination within 3 weeks

Study procedures

	Pre-vaccine (TP1)	3weeks post 1 st dose (TP2)	5-weeks post 1 st dose (TP2)	2-weeks post booster if not had at D21 (TP4)	6months post 1 st dose (TP5)	12months post 1 st dose (TP5)
Patient information and informed consent	X					
Demographics	X					
Blood for PBMC	X (Optional)	X (Optional)	X (Optional)	X (Optional)	X (Optional)	X (Optional)
Blood for Serum & Plasma	X (Optional)	X	X	X	X	X

Minimum Clinical Dataset:

Demographics: Site/study number/medical record number/name/date of birth/telephone number/gender/ethnicity/BMI/malignancy: solid tumor vs hematologic/malignancy: diagnosis/date of diagnosis/stage at time of vaccine/medical co-morbidities
COVID19 and Vaccination information: history of COVID19 prior to vaccination and date of diagnosis/type of vaccine/date of 1st vaccine/date of booster/date TP1/date TP2/date TP3/date TP4/date TP5/COVID19 diagnosis post-vaccination and outcome
Systemic treatment information: Type and date of treatment prior to first vaccine/ date and type of treatment after first vaccine dose/date and type of treatment prior to 2nd vaccine dose/ date and type of treatment after 2nd vaccine dose/ vaccine-related reactions