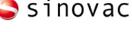


COVID-19 Vaccines Cheat Sheet: Access Edition

	Overall Efficacy*	Efficacy against COVID-19-related hospitalization and death	Tested against newly circulating variants	Dosing / Interval	Cold Chain	Cost*	Manufacturing Capacity (2021)	Emergency Use	Approval
 Pfizer / BioNTech <i>mRNA</i>	91.3% (95% CI: 89-93.2)	>99%	No	2 doses / 3 weeks	Freezer stable for 2 weeks	\$15-19	1.3 Billion	U.S., E.U., other countries.	Saudi Arabia, Bahrain, Brazil, NZ, Switzerland
 Moderna <i>mRNA</i>	94.1% (95% CI: 89.3 - 96.8%)	>99%	No	2 doses / 4 weeks	Freezer / refrigerator stable for 30 days	\$15-37	600M-1 Billion	U.S., U.K., E.U., other countries	Switzerland
 Oxford /AstraZeneca <i>Viral vector (ChimpAd)</i>	76% (US study) (standard dose) (95% CE: 69-82%)	>99%	Yes, but efficacy result does not reflect SA data yet	2 doses / 4 weeks	Refrigerator stable for 6 months	\$2-5	Up to 3 Billion	UK, EU, other countries	Brazil
 J&J <i>Viral Vecotr (Ad26)</i>	66.1% (95% CI: 55.0 – 74.8)	>99%	Yes		Refrigeration	\$8-10	1 Billion	Emergency use in U.S., Bahrain	
 Gamaleya <i>Viral Vector (Ad5/Ad26)</i>	91.6% (95% CI 85.6 – 95.2)	>99%	No	2 doses / 3 weeks	Freezer	\$10.00	1 Billion	Early use in Russia. Emergency use in other countries	
 Sinopharm/Beijing Inst. <i>Inactivated</i>	72.5% ?	>99%	No	2 doses / 3 weeks	TBC	\$30.00	1 Billion	Egypt, other countries	China, U.A.E., Bahrain.
 SinoVac <i>Inactivated</i>	50.38 (95% CI: 35 – 62%)	>99%	No	2 doses / 2 weeks	Refrigeration	\$30.00	1 Billion	Brazil, other countries.	China
 Bharat Biotech <i>Inactivated</i>	78%	>99%	TBC	2 doses / 4 weeks	Refrigeration / 1 week at room temp	\$8-16	700 M	India, other countries	

About Variants

All viruses mutate, and the SARS-CoV-2 virus is no exception. This means variations in the viral genome occur when the virus replicates; over time, these mutations may get passed along as the virus is transmitted from person to person. Scientists have identified multiple prominent variants of SARS-CoV-2 that are now circulating around the world.

How well COVID-19 vaccines protect against emerging variants is a vital question. Vaccines that have been tested more recently, and in places where new variants are circulating widely, offer some answers. For example, the J&J vaccine was found to be 57 percent effective against moderate to severe disease caused by the variant first identified in South Africa (and 66 percent effective against all variant encountered during Ph.3 testing), while the AstraZeneca-Oxford vaccine did not protect clinical trial volunteers from mild or moderate illness against this same variant. The Pfizer/BioNTech and Moderna vaccines -- the first to show high efficacy and gain FDA Emergency Use Authorization -- were tested earlier in the epidemic, before these variants emerged, and scientists are still learning to what degree variants will impact the effectiveness of these vaccines.

Vaccines can protect people in multiple ways. They can reduce the likelihood of contracting a disease, reduce the risk of severe illness, and/or reduce the chance of onward transmission. While COVID-19 vaccines show varying levels of protection against symptomatic illness (overall efficacy in the above chart) -- available data from Ph. 3 trials show they have all done a spectacular job at preventing hospitalization and death, even against emerging variants.

* Per dose (not including delivery costs)

The 3 C's: Cost, Cold Chain, Capacity Vaccine Characteristics Impacting Access

Vaccine efficacy—how much protection a vaccine provides during a clinical trial—is only one of several characteristics that must be evaluated when comparing products. Vaccines don't save lives; vaccinations do. Even a 99 percent effective vaccine will have a limited impact on the COVID-19 epidemic if financial and logistical constraints prevent its widespread use. **Cost, cold chain** and manufacturing **capacity** are all elements of a vaccine's profile that can have a significant impact on equitable access and translating efficacy in a clinical trial into public health impact.



Cost

Cost: For low- and middle income countries (LMICs) that spend US\$15-60 per capita on primary healthcare (compared with ~US\$5,000 for high-income countries) many of the currently authorized vaccines are out of reach. Some product developers have committed to at-cost pricing for LMICs. However, to ensure at-cost pricing, **transparency about the actual costs of R&D and production, including resources received from public and charitable sources, is essential.**

ACTION: Advocates can demand that product developers publicly disclose the true costs of vaccine development to ensure fair pricing. [Act Now](#)



Cold

Cold: A product that can be stored within the typical refrigeration cold chain is easier to transport and deliver globally, increasing the chances that doses will be distributed to all who need them. Products using conventional refrigerators, as opposed to specialized freezers, can integrate with the existing supply chain and immunization infrastructure, which lowers the costs associated with vaccine introduction. However, no matter the type of cold chain, the logistical challenges associated with a global vaccine effort will be significant. **Investment in the systems, infrastructure, and people needed to deliver vaccines is needed now.**

ACTION: Advocates can demand governments prioritize health system strengthening to support equitable global rollout. [Act Now](#)



Manufacturing Capacity

Manufacturing Capacity: Vaccines are complex to make, but the number of doses product developers have said they can manufacture is only a portion of what could actually be produced. In order to ensure that available doses meet the massive global demand, product developers should commit to **not enforcing intellectual property in the pandemic and sharing intellectual property, technologies, and materials (including technology transfer) to qualified producers.**

ACTION: Advocates can demand governments (including Australia, Brazil, Canada, the EU, Japan, Norway, Switzerland, UK, and the US) support the proposed TRIPS waiver to ensure non-enforcement of IP until the majority of the world population receives effective vaccines. [Act Now](#)

ACTION: Advocates can push product developers and funders to build appropriate manufacturing capacity and develop innovative partnerships for these vaccines as public goods. [Act Now](#)



Facilitates equitable global access

About AVAC. AVAC is a non-profit organization that uses education, policy analysis, advocacy and a network of global collaborations to accelerate the ethical development and global delivery of new HIV prevention options as part of a comprehensive response to the pandemic. For more information, visit www.avac.org.