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These are the countries that have pre-ordered the most COVID vaccines

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5-6 minutes

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- There has been recent promising news about 3 COVID-19 vaccine candidates, prompting thoughts to shift to distribution and delivery.
 - Mathematical models predict that the pandemic will kill more people, if wealthy countries buy all of the vaccines first, than if vaccines were distributed equally.
 - Canada, Japan, the UK, and the US have pre-ordered enough vaccines to immunise over 100% of their populations.
 - Covax aims to distribute vaccines fairly worldwide, but faces a shortfall in funding.

At this point in the Covid-19 pandemic, three vaccine research and development groups—BioNTech and Pfizer; Moderna; and AstraZeneca and the University of Oxford—have released promising preliminary data about their Covid-19 vaccine candidates. So far, all of these candidates have been safe in trials, and prevented Covid-19 in anywhere between 70% and 95% of trail subjects. Moderna and AstraZeneca plan on submitting their data to regulators for emergency use authorization imminently; Pfizer and BioNTech already have.

This is good news for the end of the pandemic—but particularly for those countries that have already pre-ordered millions of doses of these three vaccine candidates. According to [a tally](#) from the Duke Global Health Innovation Center, individual countries and the European Union have already ordered 2.8 billion doses of these potential vaccines. (Many countries have also pre-ordered vaccines from other companies, but these aren't yet in late-stage clinical trials.)

Millions of doses of top three Covid-19 vaccine candidates pre-ordered by country

	Pfizer	Moderna	AZ/Oxf.	Total
EU	300	0	400	700
US	100	100	500	700
India	0	0	500	500
Japan	120	50	120	290
UK	40	5	100	145
Indonesia	0	0	100	100
Brazil	0	0	100	100
Canada	20	56	20	96
Australia	10	0	33.8	43.8
Egypt	0	0	30	30
Chile	10	0	14.4	24.4
Argentina	0	0	22	22
Peru	9.9	0	0	9.9
Ecuador	2	0	5	7
Switzerland	0	4.5	0	4.5
Costa Rica	3	0	0	3
New Zealand	1.5	0	0	1.5

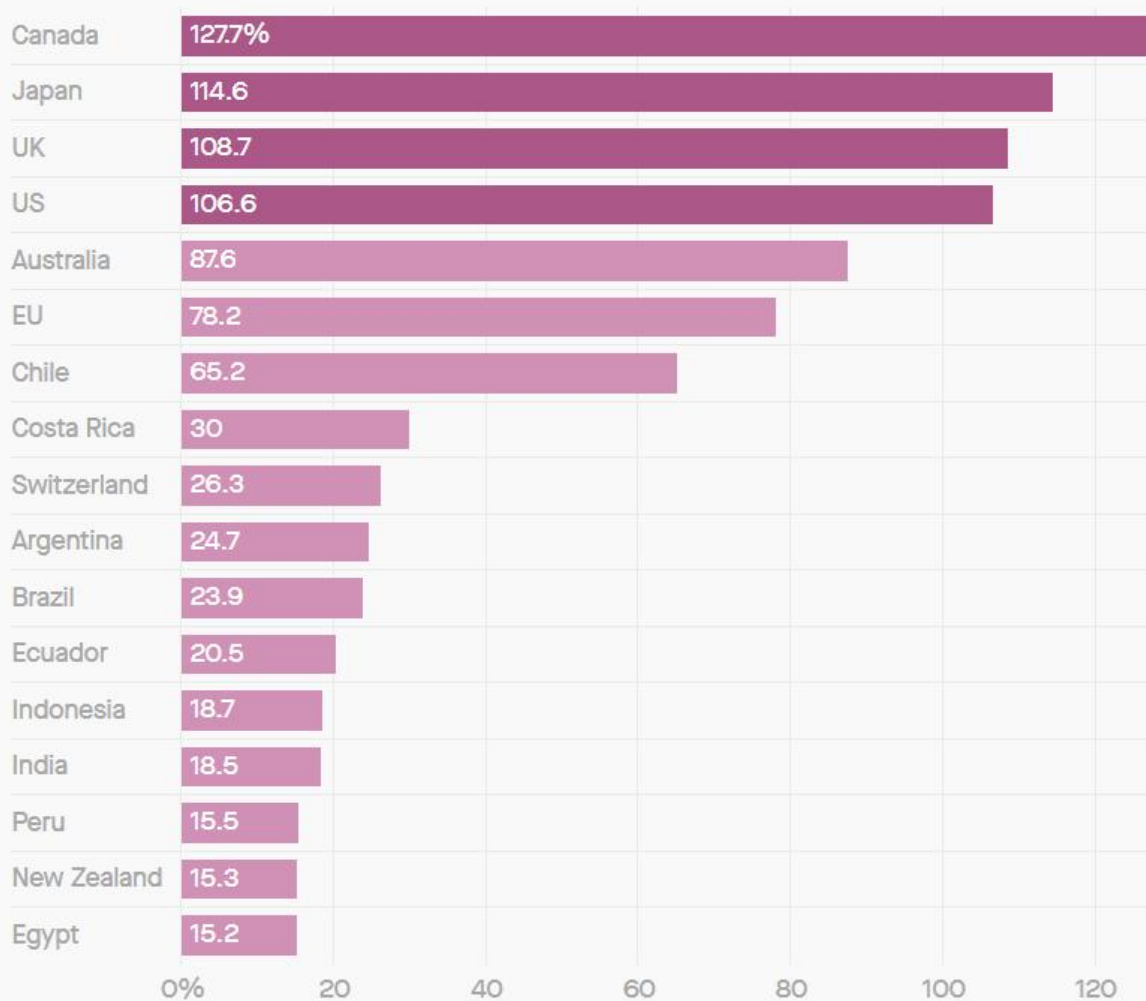
Quartz | qz.com | Data: Launch and Scale Speedometer/Duke Global Health Innovation Center | Note: AZ/Oxf. stands for AstraZeneca/Oxford University.

The EU have already ordered 2.8 billion doses of these potential vaccines.

Image: Duke Global Health Innovation Center

Should all three of these candidates gain regulatory clearance, four countries—Canada, Japan, the UK, and the US—could vaccinate more than 100% of their entire populations based on the number of these three vaccines they’ve already pre-ordered. (Each vaccine requires two doses to generate protection from Covid-19.)

Rate of Covid-19 vaccine coverage from pre-ordered vaccines from Pfizer, Moderna, and AstraZeneca/Oxford



Quartz | qz.com | Data: Launch and Scale Speedometer/Duke Global Health Innovation Center

Some nations could vaccinate more than 100% of their entire populations based on pre-ordered vaccines.

Image: Duke Global Health Innovation Center

The scramble to pre-order vaccines helped spur their rapid development. Essentially, these orders allowed vaccine developers to take on the financial risk of clinical trials without knowing whether the candidate will work. In normal times, vaccine development can take up to a decade because companies are only able to pay for clinical trials once they have enough data to be confident it will be successful.

But it also creates a very real possibility that the vaccines will be unequally distributed. The Duke research group [classifies](#) as high or upper middle income the five countries and the EU that could potentially vaccinate more than their populations. According to mathematical models, if wealthy countries buy up all of the first available vaccines, the pandemic [will actually kill more people](#) than if these vaccines are distributed evenly across the globe.

Gavi, the Vaccine Alliance—an international consortium that includes the WHO and the Gates Foundation—has created the Covid-19 Vaccines Global Access Facility, or Covax, whose goal is to help distribute the rest of these vaccines across the globe. So far, they've received [more than \\$2 billion](#) in funding from countries, individuals, and philanthropic groups; they estimate that they'll need an additional \$5 billion to cover the rest of the world. Covax has so far pre-ordered 300 million doses of the AstraZeneca/University of Oxford vaccine and 200 million from Sanofi and GlaxoSmithKline (which is still in early stages of clinical testing), but those won't be enough to cover the populations of the 92 countries that may need help buying them.

Correction (Nov. 25): An earlier version of this story showed twice the rate of vaccine coverage for countries in the second chart due to an error in data interpretation. We have updated the chart, and

updated the story to reflect that only four countries, not six, currently have pre-ordered enough vaccines to vaccinate their entire countries.

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