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# Addendum to Towards a Global Covid-19 Vaccine Strategy

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**EQUIPPING LEADERS  
AND GOVERNMENTS  
FOR A GLOBAL FUTURE**

Players	Stage	Manufacturing Process	Approach	Country	Capacity / Collaboration for Access
<b>Moderna</b>	<b>Phase III trials begin in July</b>	Nucleic acid synthesis	RNA	US	Tech transfer to Lonza plants in Switzerland and the US is due to start in June, with production scheduled for July. Some CEPI money.
<b>BioNTech and Pfizer</b>	<b>Phase I/II trials</b>	Nucleic acid synthesis	RNA	Germany	BioNTech plans to manufacture supplies for clinical trials at its European mRNA facility, with the help of Polymun; “millions” of vaccine doses by the end of 2020 and hundreds of millions by end of 2021. Pfizer will activate its manufacturing network and product at risk an approved vaccine.
<b>Imperial College London</b>	<b>Phase I/II trials under way</b>	Nucleic acid synthesis	RNA	UK	\$8.4M funding from CEPI. Imperial’s supply chain and manufacturing partners will be ready to produce tens of millions of vaccines starting in early 2021.
<b>CureVac</b>	<b>Starting Phase I/IIa clinical trials in June</b>	Nucleic acid synthesis	RNA	Germany	The company is prepared to manufacture several hundred million doses per year at its facility in Germany.
<b>Inovio Pharmaceuticals</b>	<b>Phase I trials</b>	Nucleic acid synthesis	DNA	US	Inovio has a lawsuit pending against manufacturer, VGXI.

<b>Applied DNA and Takis Bio</b>	Starting clinical trials in autumn	Nucleic acid synthesis	DNA	US / Italy	Applied DNA began large-scale production of five vaccine candidates, using the company's proprietary PCR-based DNA ("LinearDNA") manufacturing systems.
<b>Sinovac Biotech</b>	<b>Phase I/II trials</b>	Biomanufacturing	Attenuated virus	China	Sinovac will produce up to 100 million doses of CoronaVac each year.
<b>Wuhan Inst. of Biological Products and Sinopharm</b>	In	Biomanufacturing	Attenuated virus	China	CNBG (Sinopharm's subsidiary) will manufacture 200 million doses a year at two new vaccine production facilities in Beijing and Wuhan.
<b>CanSino Biologics and the Chinese Academy of Military Medical Sciences</b>	<b>Phase II trials</b>	Biomanufacturing	Non-replicating viral vector	China	Canada's National Research Council will manufacture doses that can be administered in human tests and for emergency pandemic use.
<b>Astra Zeneca and University of Oxford</b>	<b>Phase IIb/III trials</b>	Biomanufacturing	Non-replicating viral vector	UK	Partnered with CMOs Halix (NL), Cobra, and Oxford Biomedical for initial manufacturing. Collaborating with AZ for global distribution. Millions of doses could be available by September. Wuxi and SRI are reportedly also getting rights. Intelligence suggest collaborating

					with Janssen.
<b>J&amp;J (Janssen)</b>	Starting clinical trials September 2020	Biomanufacturing	Non-replicating viral vector	Belgium	With BARDA's support, Janssen will scale up to produce up to 300 million doses of vaccine in the US each year. Collaborating with Oxford, partnered with Catalent on manufacturing.
<b>Novavax</b>	<b>Phase I/II trials</b>	Biomanufacturing	Protein	US	\$388m in funding from CEPI to boost manufacturing. In June 2020, US Department of Defense (DoD) provided a \$60m contract to Novavax to manufacture in June 2020. Novavax will supply 10 million doses to the DoD in 2020 to be used in Phase II/III clinical trials or under an Emergency Use Authorisation, if approved.
<b>Symvivo</b>	<b>Phase I trials</b>	Biomanufacturing	Other	Canada	In-house manufacturing
<b>Clover Biopharma</b>	Starting clinical trials in July	Biomanufacturing	Protein	China	
<b>Vaxart</b>	Starting clinical trials 2H 2020	Biomanufacturing	Protein	US	
<b>University of Pittsburgh</b>	Starting clinical trials in Q3	Biomanufacturing	Protein	US	
<b>Sanofi and GSK</b>	Starting clinical trials in 2H20	Biomanufacturing	Protein	France / UK	
<b>Medicago</b>	Starting clinical trials in summer	Greenhouse production (!)	Other	US	
<b>Vir, AbCellera, Regeneron, etc.</b>	Starting clinical trials in summer	Biomanufacturing	Non-vaccine proteins	NA	Partnered with Samsung, Wuxi, and Biogen

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