

NOT ENOUGH TO GO AROUND

Vaccine manufacturing for the COVID19 pandemic

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WHAT CAN THE VACCINE DEVELOPMENT COMMUNITY LEARN FROM COVID?

What **has** worked well to-date



HICs providing **at-risk funding** for R&D has enabled Phase III studies for multiple candidates



Efficient and **rapid clinical development** of vaccines



Promising coordination around securing adequate **fill/finish capacity** and **glass vials**



Increased funding and interest for **newer vaccine platforms** (e.g. mRNA)



Establishment of opt-in COVAX facility with efforts to make fair global allocation decisions

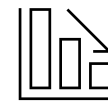
What has **not** worked well to-date



Relatively small vaccine supply secured for LMICs



Nationalist procurement of early vaccine doses (well above need for most HICs)



Postponement of vaccinations (campaigns and routine), increasing risk of multiple outbreaks



Procurement scramble creates dependence on a **high volume of tech transfers**



Emerging risk of **vaccine hesitancy** and distrust of clinical approval process integrity

HOW CAN THE VACCINE DEVELOPMENT COMMUNITY DO BETTER?

Manufacturing was blamed for supply shortages, but not always for the right reasons; future solution will need to account for the full scope of the problem

To maximize global supply, need innovative ways to **ease and encourage tech transfer**

- › Intellectual property blamed for lack of adequate LMIC supply; necessary, but not sufficient
- › Tech transfer requires time, resources and sharing of know-how; can be enabled by novel technology that reduces cost and footprint

To mitigate geopolitical risk, need **diversified supply chains and production options**

- › Need to optimize geographic distribution for investments to be financially and operationally feasible, given necessity of large markets for sustainable vaccine markets

To ensure capacity can accommodate the most successful products, must have **flexible ever-warm multi-platform facilities**

- › Despite success of multiple vaccine platforms (mRNA, viral-vector, inactivated), cannot predict ahead of time which platform will offer most successful protection requiring multi-platform facilities that can accommodate the major platforms
- › Facilities must be constantly running (“ever-warm”) in order to be ready for use
- › Need flexible systems

To ensure that manufacturing isn't only done for rich countries, need to develop **innovative financing and business models**

- › Current models rely on company goodwill to ‘make the right choice’, and only certain countries and blocs can put huge sums of capital at-risk, up-front
- › Mechanisms needed to reasonably risk-share and include requirements for equitable distribution, and need model to make facilities sustainable in non-pandemic periods

FINAL THOUGHTS

- COVID has demonstrated potential of vaccine development, and exposed important gaps in the system
- Current system of direct supply and expanding via licensing; can consider a third way for future, such as a hub and spoke model that leverages novel technology to make tech transfer easier, and has more established geographical reach
- Guiding principles of any solution that supply should be accessible, flexible, and global

THANK YOU!
