**Five areas of focus for manufacturers, distributors, and governments**

***1. Ensuring sufficient manufacturing capacity:***At this point, there does not appear to be a significant capacity constraint, and many manufacturers have already secured the space they expect to need. Moreover, many vaccine candidates have different manufacturing profiles. Some manufacturers have already ramped production of their COVID-19 vaccines in advance of approval. The current mantra is to produce as many doses as possible so that there is enough supply if approval is granted. However, companies that wind up with the most effective vaccine could quickly reach capacity, especially if governments and other buyers start making large purchases. Given that manufacturing capacity is finite, companies that emerge first with a safe and effective vaccine might need to partner with less successful competitors to secure additional capacity. Enabling shared-capacity agreements could reduce the risk of demand outpacing supply. However, it doesn’t seem that many companies are discussing shared capacity at this point.

***2. Agreeing to packaging interoperability:***The ancillary packaging of a vaccine could wind up being a significant hurdle for vaccine manufacturers. Shortages of raw materials, syringes, glass vials, or other supplies could limit dose availability. Lockdowns and restrictions on travel, along with unforeseen geopolitical risks, could also hinder the distribution of critical materials to manufacturing sites around the world. As it stands today, there is no harmonization around the packaging that will be needed to transport and distribute vaccines. Most companies have their own set of product security standards and packaging requirements. Given that there could be multiple products in the market at the same time, it might be beneficial to establish some level of interoperability in primary packaging for similar vaccine types. If one company’s vaccine isn’t selected or has problems, can the packaging or vials that one company procured be directed to another manufacturer? In September, nine pharmaceutical companies issued a joint pledge not to release a vaccine until it had been thoroughly tested for safety and effectiveness. If competing manufacturers are able to come together and agree on such a pledge, perhaps they could also agree on some level of standardized packaging.

***3. Preparing the cold chain:***for example, could be secured to transport vaccines. Super-freezer containers might be used for over-the-road and even short-sea or rail transport. The International Air Transport Association estimates that 8,000 jumbo jets would be needed to transport vaccines around the globe, but those aircraft would need to meet storage-temperature requirements.3

***4. Distributing vaccines to administration sites.*** Governments, including the US, are essentially acting as vertically integrated R&D, manufacturing, distribution, and potentially administration entities. Vaccine manufacturers should fulfill the commitments they have made to governmental and NGO entities. This is a key difference from a traditional commercial model, particularly where multiple vaccine products are available.

***5. Getting people vaccinated:***States and distributors might not have a fully accurate picture of demand given that some people, even within priority groups, might not opt to receive the vaccine. As a result, some doses might not get used and could be wasted. Real-time tracking of vaccine demand will likely be critical to optimizing the allocation of supply. Vaccine manufacturers should be agile in adapting their operations as priorities shift as vaccines enter the market. Importantly, a significant percentage of the public would need to get vaccinated to achieve herd immunity

6. Discrimination 🡪Nearly half (51 percent) of Americans said they would definitely or probably get a COVID-19 vaccine if it were available today, a September KFF [report](https://pharmanewsintel.com/news/just-half-of-americans-would-get-a-covid-19-vaccine-if-ready-today) found.