

## Global infrastructure and supply chain will need to improve

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At the 2020 World Vaccine Congress Europe held in October 2020, Avantor, a leading global provider of critical products and services to customers in the life sciences, advanced technologies and applied materials industries, highlighted the key challenges facing vaccine developers as they progressively turn to single-use technology to increase productivity and also on the importance of managing risk and minimizing complexity in the global single-use supply chain as manufacturers scale operations to fight COVID-19. In an interview with Ankit Kankar from BioSpectrum, Nandu Deorkar, Vice President, R & D, Biopharma Bioproduction, Avantor, USA shared his views on the current challenges before the global vaccine industry and how Avantor is gearing up for the post COVID era?



### **1. What are the current challenges facing the vaccine industry worldwide?**

The emergence of COVID-19 has caused a rapid evolution across the biopharma industry. Now that we've quickly developed safe, efficient vaccines, we must meet the next challenge: achieving and maintaining scale. Much work still needs to be done to reach a goal of the nine billion doses (with some vaccines requiring repeated doses) required to vaccinate the global population by the end of 2021.

For example, expedited treatment development increases pressure on the supply chain of materials such as salts and buffers. Some raw material requirements, like enzymes, have not previously been manufactured at commercial scale or to cGMP specifications. Biopharmaceutical companies will need to work with suppliers to validate and audit materials, as well as scale production to meet this rising demand.

Global infrastructure and supply chain will also need to improve if we are to meet ongoing demands of research, scale-up, manufacture and delivery, especially if — or, more likely, when — another pandemic arises. Future vaccines will need to be efficient, safe, easy to manufacture, stable and convenient.

### **2. How is Avantor helping in meeting production and transportation needs of COVID-19 vaccine manufacturers globally?**

The pandemic has highlighted the need for biopharma companies to collaborate with suppliers able to enhance regulatory compliance, minimize risk, drive cost-effectiveness and improve time-to-market. As a biopharma supplier, we provide critical components and services needed to support nearly all vaccines and vaccine candidates globally, including those developed by leading manufacturers.

For example, we help establish and optimize workflows in manufacturing and formulation steps, particularly in downstream bioprocessing. By implementing new approaches to buffer management, like utilizing pre-packaged buffer materials to streamline steps, we can help overcome potential processing bottlenecks. These improvements can help customers reduce quality testing, buffer preparation time and tank volume used, while enhancing process efficiency.

We also support biomanufacturers in leveraging data analysis tools, providing deeper insights into complex raw material interactions in downstream processing. We help customers make better use of the data we collect during development and manufacturing so they can better characterize raw material variability, as well as mitigate any impact this might have on manufactured batches.

### **3. How is Avantor gearing up for the post COVID era?**

From bioengineered vaccines to cell and gene therapies, drug complexity continues to escalate. As a result, drugs are increasingly defined not by their product content alone, but rather by their production processes. We offer the broad product portfolio as well as in-depth research and production process expertise to support customers as they move complex therapies from lab-scale formulation to commercial manufacturing.

For example, the industry is moving toward single-use technology to provide flexible, localized infrastructure. In 2020, we introduced the Avantor TopMixer single-use mixing system and our new SterilEnz™ single-use high-pressure fluid

handling system.

Avantor is also ready to support the acceleration of personalized medicine, like cell and gene therapies. We recently expanded our J.T.Baker® BAKERBOND® PROchievA™ portfolio, which provides best-in-class purification for the critical protein A chromatography step of monoclonal antibodies (mAbs) manufacturing.

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