

IS BLOCKCHAIN KEY TO COVID-19 VACCINE DISTRIBUTION?

The global supply chain has taken a huge hit over the last several months, what role might blockchain play when it comes to vaccine distribution.

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Through the initiative Operation Warp Speed, the U.S. federal government has entered numerous contracts with pharmaceutical companies, investing billions to support the development of a vaccine to combat COVID-19, with the goal of delivering 300 million doses of a vaccine by January 2021. The broader strategy aims to accelerate development, manufacturing, and distribution of COVID-19 vaccines, therapeutics, and diagnostics.

In June, the U.S. government awarded Novavax \$1.6 billion to expedite the development and manufacture of 10 million doses of its vaccine candidate, NVX-CoV2373, made using its nanoparticle technology and Matrix-M adjuvant, and most recently up to \$2.1 billion under an agreement with Sanofi and GSK to accelerate the development and manufacture of 100 million

doses of a COVID-19 recombinant protein-based vaccine leveraging GSK's pandemic adjuvant technology.

While a potential vaccine seems like a silver bullet, some experts are concerned about supply chain distribution challenges.

The global supply chain has taken a huge hit over the last several months, which has slowed down distribution channels, heightened labor shortages and increased product delays. Pharmaceutical companies must begin to rethink their strategies and capabilities around manufacturing, production, and inventory management.

The vaccine supply chain involves not only manufacturing the vaccine, but storage and packaging components, cold-chain transit, domestic and global shipping, distribution

strategies and storage. In turn, pharmaceutical companies may need to utilize blockchain to help clean up their supply chains, which could increase transparency and improve communication with vendors. By incorporating blockchain, pharmaceutical companies can track vaccine distribution and ensure a fair and equitable process - especially as vaccines manufacturers have limits on what they can use, making sourcing more complicated.

Gina Parry, Distribution and Pharmaceutical Sales Manager at VAI discusses the role blockchain will play in the pharmaceutical supply chain when it comes to vaccine distribution. -KB

Contract Pharma: What global supply chain challenges does the Pharma/Biopharma industry currently face amid the pandemic?



Gina Parry: The pharmaceutical industry has been facing drug and personal protective equipment (PPE) supply shortages throughout the COVID-19 pandemic.

Shortages tend to increase demand as everyone is scrambling to get their hands on products expected to remain hard to attain.

Additionally, some drug companies have ramped up production on drugs that were initially thought to be helpful in fighting the virus, which later was found to be ineffective and/or dangerous by the FDA. This led to an overabundance of these drugs in the market, and subsequently, an increase of dead stock for the industry.

Manufacturing companies have also experienced the loss of employee productivity due to illness and in some cases, employee cutbacks, as well as plant closures due to the lockdown measures imposed by local and federal governments.

The transportation industry can also experience container shortages in which to move products as they are redirected for more critical distribution.

These challenges are significant on their own, but when combined,

they can create a serious ripple effect across the entire industry and then out to the population at large.

CP: What challenges do you anticipate upon approval of a COVID-19 vaccine?

GP: While it may be uncertain at this time what percentage of the population will initially seek the COVID-19 vaccine, there may be an overwhelming demand for this vaccine on a level not seen in recent memory. Manufacturers will be working hard to meet any kind of sizable demand, and distributors will be fighting to acquire the product for their customers first. After initial distribution, we anticipate this demand to continue for many months.

CP: What role will blockchain play in the pharmaceutical supply chain when it comes to vaccine distribution?

GP: A blockchain-based COVID-19 pharmaceutical supply chain would be a private and highly controlled environment. Blockchain based supply chains would work well because they will instill trust for consumers, who during this time may have heightened fears about safety and reliability within the supply chain. Blockchain can also

help supply chains to be more efficient in these times especially with current workforce challenges.

The interest level for the pharmaceutical supply chain in blockchain would encompass tracking whichever components they need to be included in their vaccines, along with their own portion of the vaccine that they develop. The blockchain itself would enable confidence for everyone from the pharmaceutical supply chain, down to doctors and recipients of vaccines that it has been verified along every step, and safe for distribution. Since the data in a blockchain is tamper proof, people can feel safe when a vaccine is available.

If you're just joining a blockchain, the only investment needed is having software that is capable of working with blockchain. If you're going beyond just joining blockchain and want to be part of blockchain at the authentication point, then you would need to invest in the infrastructure to be part of that blockchain. Usually only the biggest providers and pharmaceutical companies would be part of the blockchain or, it would entail them going to companies such as IBM or others as the blockchain provider.

