COVID-19 Vaccines: FDA Regulatory Timeline and Next Steps Prior to Widespread Distribution

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There is increasing optimism that COVID-19 vaccines may be widely available in the United States (and perhaps throughout the world) in the near future based upon the recent release of positive results from two Phase 3 vaccine trials. The results of the first interim analyses of the Pfizer/BioNTech and Moderna Phase 3 vaccine studies are striking and both vaccines are reported to be approximately 95% effective in preventing COVID-19.

The sponsors of these vaccines, which both rely on mRNA technology, are expected to apply for emergency authorization from the Food and Drug Administration ("FDA"). Pfizer indicated that it would submit its EUA today, and Moderna should follow shortly. If approved, distribution of the vaccines could begin before the end of the year. Unlike traditional vaccines, mRNA vaccines work by introducing fragments of mRNA into human cells that reprogram them to produce pathogen-specific antigens, which then stimulate an adaptive immune response against the pathogen. These would be the first mRNA vaccines authorized for distribution by FDA. Additional vaccine candidates from Johnson & Johnson and other vaccine developers are close behind.

We provide below the FDA approval timeline and related hurdles that must be addressed prior to widespread distribution of these, and other, COVID-19 vaccine candidates.

FDA Emergency Use Authorization: Review and Approval Timeline. FDA has indicated that it expects to issue Emergency Use Authorizations ("EUAs") for COVID-19 vaccines before Phase 3 trials are completed. An EUA may only be issued during a public health emergency based upon an FDA decision that a product "may be effective" and the

benefits outweigh the risks.[1] This lower standard, in comparison to a traditional vaccine approval, allows for life-saving products to be distributed as soon as possible. Ultimately, however, it is anticipated that companies developing COVID-19 vaccines will proceed through the traditional vaccine approval/licensure process, even after EUA authorization, when clinical studies have been completed.

FDA has issued guidance on the development and licensure of COVID-19 vaccines; among other requirements, FDA has indicated that COVID-19 vaccines must be at least 50% efficacious.[2] The initial Pfizer and Moderna data easily exceed this threshold, making them eligible for EUA authorization.

FDA has indicated that it expects the scientific review associated with vaccine EUA applications to take approximately two to three weeks. The applications will also be considered by the Vaccines and Related Biological Products Advisory Committee, composed of independent experts including scientists, physicians, infectious diseases experts and a consumer representative. The committee is currently scheduled to meet from December 8–10 and will likely review the Pfizer EUA application, which the company expects to submit in the next few days, and potentially the Moderna application as well. The committee will review safety and efficacy data and will make a non-binding recommendation of whether the vaccine should be authorized for use and in which populations.

FDA will take the advisory committee vote into account when deciding whether to issue the EUA. Dr. Peter Marks, the director of FDA's Center for Biologics Evaluation and Research, leads the FDA team responsible for making the final decision. FDA recently reaffirmed its commitment to transparency throughout the process and indicated that, consistent with its longstanding practice for new drug and biological product approvals, it will publicly post its reviews of the scientific data and information supporting the issuance of any vaccine EUA, likely including redactions of confidential commercial information and trade secrets.[3]

A number of states, including New York, California, and the District of Columbia, are convening their own committees to review safety and efficacy data for any vaccine applying for FDA authorization. State officials have said that they expect to conduct their reviews in parallel with FDA in order to avoid impeding the vaccine distribution process.

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1 FDA, Guidance for Industry and Other Stakeholders: Emergency Use Authorization of Medical Products and Related Authorities (July 2017).

2 FDA, Guidance for Industry: Development and Licensure of Vaccines to Prevent COVID-19 (June 2020).

3 FDA, COVID-19 Update: FDA's Ongoing Commitment to Transparency for COVID-19 EUAs (Nov. 17, 2020). *See also* GAO, COVID-19: Federal Efforts Accelerate Vaccine and Therapeutic Development, but More Transparency Needed on Emergency Use Authorizations (Nov. 2020).

Distribution Triage. The Center for Disease Control's ("CDC's") Advisory Committee on Immunization Practices ("ACIP") will determine the distribution prioritization for each vaccine, taking into account dosage, timing, and any safety precautions. Front-line healthcare workers will likely be first in line for the vaccines, followed by the elderly and people with health conditions that put them at greater risk for COVID-19 complications. Current reports suggest the general public may not have widespread access to vaccines until the second quarter of 2021 due to the limited number available. Distribution timing will depend on the number of vaccines that receive EUAs in coming months and the manufacturing capacity and distribution plans for each vaccine.

ACIP is expected to develop its plans concurrent with FDA's review with the goal of initiating vaccine distribution within 24 hours of EUA issuance. ACIP has scheduled a preliminary meeting for Monday, November 23. After ACIP issues its recommendations, state governments are expected to distribute vaccines to their residents consistent with these guidelines. In preparation, states are developing individual vaccine distribution plans based on the CDC's Interim Playbook.[4] In addition, Pfizer is working with four states of varying size, diversity, and infrastructure to launch a pilot delivery program aimed at addressing distribution challenges.

Manufacturing and Distribution Challenges. Vaccination timing will depend in large part on how rapidly manufacturing can be safely scaled up to millions of doses. Vaccine manufacturers may also confront limited supplies of raw ingredients, glass vials, and other items necessary for manufacturing and distribution.

Operation Warp Speed, announced by the Trump Administration, set a goal of 300 million doses available by the end of 2020. It is currently expected that we will only have a fraction of that number, based upon projections of approximately 45 million doses of the Pfizer and Moderna vaccines combined (which would be enough to vaccinate 22.5 million people, as both vaccines require two doses). Hundreds of millions of additional doses, however, would be expected throughout 2021.

Distribution may also be challenged by storage temperature requirements. The Pfizer vaccine, for example, must be stored at minus 70 degrees Celsius, presenting potential distribution hurdles. Pfizer has indicated, however, that it has developed packaging and shipping innovations to maintain cold chain storage throughout the distribution process.

Societal Impact. The societal impact is expected to be gradual as an increasing number of individuals are vaccinated throughout the next year. Both the Pfizer and Moderna vaccines require two doses several weeks apart, so approximately a month must be

[4] CDC, COVID-19 Vaccination Program Interim Playbook for Jurisdiction Operations (Oct. 29, 2020).

added to initial vaccine availability until an individual would be protected. In addition, the impact of the vaccination program and the potential for "herd immunity" will depend not only on availability of the vaccines and their ultimate efficacy, but also on the percentage of the population willing to be vaccinated. It is also unclear how long immunity will last after taking a vaccine, although recent encouraging—but not conclusive—evidence suggests that immunity may last years, assuming the virus does not mutate in a way that would lessen a vaccine's efficacy. In sum, vaccine authorization will not result in an immediate return to normalcy but should establish a path toward normalcy over the coming year.

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For more information regarding the legal impacts of the coronavirus, please visit our Coronavirus Resource Center.

Please do not hesitate to contact us with any questions.

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