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The Global Patent Race for a COVID-19 Vaccine

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As COVID-19 is causing chaos around the globe, the world's largest economies are competing to be the first to find a cure to this new pandemic and taking measures to ensure that their citizens will have access to any vaccines or treatments once available. COVID-19 has introduced a whole new global arms race--the race to own patent rights to a COVID-19 vaccine.

A patent is an exchange between inventor and national government in which the inventor discloses to the public exactly how to recreate the claimed invention (e.g., a vaccine) and is in return given an exclusivity period during which it may choose who, when, where, and how that invention is made, used, or sold. Research and Development for a single vaccine, drug, or diagnostic test will often cost billions of dollars, but patents nonetheless promote medical and scientific innovation in pharmaceutical drugs and diagnostic tests around the world by providing a way for companies to recoup their costs through exclusive manufacture, sale, and licensing of their inventions. Patents typically allow the general public to access essential medicines, which would otherwise have unlikely been invented. Given the current global political climate, however, critics fear that a nation's right to control how and when a COVID-19 vaccine is distributed may wind up being wielded in a restrictive manner.

There is currently no vaccine for COVID-19, but several pharmaceutical companies in Europe, the United States, and China believe they are close to producing successful treatments. European leaders have repeatedly given assurances that if a European laboratory is the first to develop and patent a vaccine, the vaccine will be broadly licensed around the world to ensure access for vulnerable populations. In contrast, the

United States and China have been engaged in an escalating trade war since 2018 surrounding China's lack of enforcement of intellectual property rights of non-Chinese citizens and both nations have responded to the coronavirus pandemic with strong nationalist sentiments. Experts thus warn that if either the United States or China is first to develop and patent a vaccine, access to the vaccine could be used as political leverage against the other.

Political tensions between the two nations have already affected how Chinese and American laboratories cooperate to provide access to a COVID-19 antiviral that could potentially treat COVID-19 symptoms in patients most in need of medical aid.

Gilead, a major United States pharmaceutical laboratory, owns the patent rights to Remesdivir, the only known antiviral believed to be effective at treating coronaviruses, such as COVID-19 (*See, e.g.,* [CN108348526A](#)). Remesdivir was first developed as a treatment for Ebola, but after being largely unsuccessful for that intended purpose, Gilead discovered that Remesdivir could be effective at mitigating the effects of various coronaviruses. In response to the recent COVID-19 outbreak, Gilead has donated Remesdivir to hospitals in China to test its efficacy on COVID-19.

Soon after receiving Remesdivir samples from Gilead, the Wuhan Institute of Virology in China ("Wuhan Institute") filed a competing "method of use" patent that involves using Remdesivir in conjunction with chloroquine, a common malaria antiviral. The Wuhan Institute's patent has not yet been made public, but if the patent claims nothing more than the combination of two known drugs in an expected manner, it is unlikely the Wuhan Institute patent will be granted. Furthermore, even if the Wuhan Institute's patent is granted, Gilead will still be entitled to compensation for any use of Remesdivir by virtue of a license. Interestingly, the Wuhan Institute almost immediately issued a statement after its filing that its patent application was filed "in the nation's interest," and that it would be willing to forgo enforcement of its patent if unnamed foreign pharmaceutical companies would collaborate with China to address COVID-19.

Accordingly, it is likely that the Wuhan Institute filed its patent for the use of Remesdivir merely as a defensive measure to secure access to Remesdivir in China

and potentially lower any licensing fees it would owe Gilead for its use. Gilead alleges, however, that the Wuhan Institute never approached it about licensing Remdesivir, which is typically the first step to obtaining a potential license. Moreover, even if Gilead had denied any licensing request, China has compulsory licensing statutes similar to those of the TRIPS Agreement under which China could have compelled a license from Gilead for use of Remdesivir. Instead, the Wuhan Institute's patent filing, in a country with a poor history of enforcing patent rights of American inventors, signals a deeper mistrust between China and the United States and could have a detrimental effect on global access to an eventual COVID-19 vaccine, should either nation be first to produce it.

Furthermore, as other foreign laboratories are working on a vaccine for COVID-19 (e.g., Johnson & Johnson, GlaxoSmithKline, CureVac, BioNTech, etc.), critics warn that defensive patent filings by Chinese laboratories will disincentivize foreign laboratories from testing their drugs or vaccines in China for fear that China will not protect their intellectual property rights.

A vaccine is still at least another 12-18 months away from being ready for public use, but if tensions between China and the United States worsen in that time and either of these nations is first to find a vaccine, the COVID-19 vaccine may become the newest bargaining chip in an ever escalating trade war between the two nations.

National governments decide how vaccines are approved for use within their borders and how and when they may be exported internationally. When Australia became the first nation to develop a successful swine flu vaccine in 2009, the global demand for the vaccine exceeded Australia's ability to produce it, and Australia's government ordered that Australian citizens receive priority in obtaining the vaccine before any could be exported abroad. Given the rate at which COVID-19 is spreading globally, it is likely the global demand for a vaccine will exceed any supply, and political tensions between China and the United States could greatly exacerbate the issue.

Patents and scientific innovation are intended to operate independently of politics. In the face of a global pandemic, political conflicts should never threaten public access to

essential medicines and treatments. It remains to be seen, however, how the global arms race for a COVID-19 vaccine patent will unfold in light of these recent events.

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