# The Race For A Vaccine

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## Abstract

The virus that has captivated the entire nation's attention has been none other than COVID-19. The coronavirus is severely impacting the economy, public health, and human social behavior. Today the efforts for a vaccine are a high priority, yet there is still no vaccine to provide relief for the people of the United States. The rush for this vaccine is a recipe for disaster, if not handled correctly. The race for the vaccine may be harder than what was anticipated. The present articles review and discuss the COVID-19 vaccine and the potential effects on public health.

# The Race For A Vaccine

For decades, vaccinations have saved many lives and raised the life expectancy of humans in general. Previous improvements in science and research, have paved the roads to the efficiency and quality of the production of vaccines. The nation is scared, panicking, and hopeful that a COVID-19 vaccine will be created to finally end the agony. But the rush for this vaccine can end up costing even more lives than before if not handled properly. The present articles, “Here's why we can't rush a COVID-19 vaccine” by Patrick Boyle, “Health officials worry nations not ready for COVID-19 vaccine” by Liza Szabo, and “Vaccine development against coronavirus” by Badgujar et al, all discuss how should the coronavirus vaccine be produced to ensure the safety of public health?

The first articles by Patrick Boyle, Badgujar, and Liz Sabo all explain a concern they have in common, why we must not rush a vaccine. Beginning with Boyle’s article he goes into detail about the aspects that go into the process of testing and approving a vaccine for safe public use. Boyle goes on to explain that after completion of all three phases of clinical trials, companies apply to the FDA for a license to market and publicly administer the vaccine. Some vaccines undergo a fourth phase to study effects while the vaccine is being publicly administered, a process that can involve thousands of people over several years. “If we aren’t deliberate and careful, we could harm people. “All that has to happen is one significant harmful side effect and you have to start over,” Poland says (p. 3). Boyle shows the extensive process of approving a vaccine by adding that if one side effect that can take years to find and will potentially affect the public's health is detected, then researchers would have to start over.

Without rushing the vaccine researchers can ensure that the public's health will not be jeopardized.

In Szabo's article, she touches on the concern health officials have about the speedy production of a vaccine. She goes on to add that officials still need to figure out who will keep track of who has gotten which doses and how they'll keep the workers who give the shots safe, with enough protective gear and syringes to do their jobs. With only about half of Americans saying they would get vaccinated, according to a poll from AP-NORC Center for Public Affairs Research, it also will be crucial to educate people about the benefits of vaccination (p. 4). Szabo's demonstrates the process can take extensive efforts and time and health officials still have yet to formulate a plan on how they are going to be able to handle the situation. Rushing the process needed to complete a safe coronavirus vaccine, will not only put the public's health at risk but the health officials' lives as well.

Badgujars' article mentions that within the last 17 years, there have been efforts to design a successful vaccine against coronavirus but no vaccine has been approved. He goes on to add "It is always a skillful, critical and challenging task to develop the vaccine within a short period, which may take generally an average 1.5–3.0 years for possible successful designing of the vaccine against newly emerging pathogens. The rush in development of fast-track vaccines may be dangerous" (p. 3). Badgujar explicitly shows the expected time for a successful vaccine to be prepared, it has been merely a year and researchers are still pressured to rush the vaccine which, as mentioned, can be dangerous to the general public's health. Health officials mustn't rush the development of the coronavirus vaccine for the sake of the public's well-being. All three of these

authors explain why the vaccine should not rush the vaccine due to the risks, which answers the research question, how the coronavirus vaccine should be produced to ensure public health.

An ongoing concern in the creation of the coronavirus vaccine is the cost and limited supplies. The scientific research industry has to be granted and funded money by sponsors and the federal government to conduct the necessary research needed. In Boyle's article, he mentions that the process from conception to market grows more complicated and expensive at each step, labs usually find government, philanthropic, and business partners to fund the studies, revisions, and approvals, with private companies typically taking on the ultimate manufacturing and distribution. CEPI projects that bringing several COVID-19 vaccines to trial will cost $2 billion (p. 4). This example provides insight into the process of getting the funds necessary and how much work goes into it. Boyle explains why the vaccine cannot be rushed due to having to locate funding and despite trying to accelerate the process, it is risky, timelines are long, and it's expensive. This further answers the research question on

In Szabo’s article she explains, “Paying for the Rollout”, the U.S. has committed more than $10 billion to develop the coronavirus vaccine yet an investigation going on by Kaiser Health News, has detailed how state and local public health departments have been starved, leaving them underfunded and without adequate resources to confront the coronavirus pandemic. The investigation further found that federal coronavirus funds have been slow to reach public health departments and many health departments are so overwhelmed with the current costs of the pandemic such as testing and contact tracing that they can’t reserve money for the vaccine work to come (p. 3). Szabo explains the issue of funding the coronavirus vaccine and despite

rushing, health departments are not being funded as they should. This has led to the closure of clinics and other essential services. Not having the funds needed for supplies, staff, and to form a successful vaccine is a recipe for disaster that can be greater than the pandemic itself.

In Badgujar's article, he explains that the global health concern vaccine must be made available with minimal charges. For this, various research organizations need to take initiative. Unpredictable side effects of the newly developed vaccine and high-cost investment are the major concerns to develop the rapid vaccine against newly emerging viruses in present pandemic scenario cost investment is a major concern to developing the rapid vaccine against newly emerging viruses in the present pandemic scenario (p. 9). He explains that the high cost of investment into the vaccine is a major concern and urges organizations to step up to get the funding they need. Badgujar also states that there is a rush to find a successful vaccine due to emerging viruses but the hurry may result in complete failure of the coronavirus vaccine designing project. This overall supports the discussion of the coronavirus vaccine and the potential effects on public health.

Another theme all of these articles have in common is the importance of reviewing past efforts to not have history repeat itself. Boyles's article reserves a section to explain a history lesson. In that, he mentions the "Cutter Incident", which was a polio vaccine that was approved and passed required safety tests that contained a live poliovirus. This in turn produced 120,000 doses of live polio vaccines that were administered and later caused an epidemic. Boyle mentioned the incident of the respiratory syncytial virus (RSV)

> "This pervasive respiratory virus was proven resistant to vaccination. Children treated with one vaccine in the 1960s developed an enhanced form of the disease, suffering high fever, bronchopneumonia, and wheezing. Many were hospitalized and died. 'That set the field back years,' Poland said, as researchers and manufacturers "were afraid" to try again. Researchers have since tried but still not developed an RSV vaccine for public use, according to the CDC (Boyle, p. 3).

Boyle includes the history of a failed vaccine that originally killed many but also ended up mutating into an enhanced form. This example shows the effect of what mistakes in vaccine production can do to public health and why researchers should review previous efforts to not be careless with producing a much-needed vaccine even with the production being better than what it used to be. The risk of the simplest mistake can generate another COVID-19 epidemic, being that corona has mutated before, it can mutate again after tampering in a lab.

In Szabo's article, she mentions H1N1 influenza and the approach taken to ensure people were vaccinated. Szabo presents a question many have, how would we even get this vaccine? This is an issue due to the number of vaccines that have to be administered. In her article, she explains that in the years 2009 and 2010, the CDC scaled up to vaccinate 81 million people against pandemic H1N1 and that in August, the administration announced that McKesson Corp., which distributed H1N1 vaccines during that pandemic, will also distribute COVID-19 vaccines to doctors' offices and clinics (Szabo p. 2). This is an example of what reviewing past efforts can do for the result of positive outcomes and to ensure public health is prioritized. Szabo uses the tactic provided previously for the H1N1 vaccine and shows how the same approach will be used for the coronavirus due to officials facilitating the vaccine distribution this way.

Badgujar's article goes into great detail on reviewing the previous strain of the coronavirus. Badgujar begins by looking at previous efforts from 2003 when trying to contain SARS, the coronavirus strain that mutated into COVID-19. Badgujar explains vaccine designing and the available past/historical efforts or experience of vaccine development against SARS will be of great value in the present worldwide pandemic COVID-19 scenario considering the gene sequence homology of SARS and COVID-19 are very similar and both have urgent need of vaccine to control existing pandemic with a short period (p. 4). Badgujar shows the importance of reviewing past efforts and how they can be beneficial when securing the public's health. Using the knowledge already known from the past can help researchers efficiently and carefully produce a COVID-19 vaccine without jeopardizing the health of the nation. This overall answers the research question, of how the coronavirus vaccine should be produced to ensure public health.

Vaccinations can save many lives and raise life expectancy due to scientific research. The vast improvements in science and research pave the roads to the efficiency and quality of the production of vaccines. The race for the coronavirus vaccine is a long one, but efforts are being made to produce a safe and effective vaccine. Rushing for this vaccine can end up costing even more lives than before. The present articles, "Here's why we can't rush a COVID-19 vaccine", "Health officials worry nations not ready for COVID-19 vaccine", and "Vaccine development against coronavirus", all answer the research question at hand, how should the coronavirus vaccine be produced to ensure the safety of public health?

## References

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