

## The COVID Vaccine Trials & the Role of Government in Public Health

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A second company, Moderna, has announced the production of a vaccine against COVID-19. Like Pfizer's vaccine, announced last week, Moderna's is based on transfecting RNA into a subject. The RNA then codes for the production of viral proteins, against which the body's immune system can raise defenses.

The companies' strategy uses the virus's tools against it (SARS-CoV-2 is an RNA virus that commandeers the body's own biology to reproduce itself) which is grimly satisfying, like a judo player using their opponent's momentum against them. No RNA vaccine has yet entered into clinical practice, so the close appearance of two likely candidates is exciting.

Moderna recruited 30,000 volunteers, half of whom received the vaccine, half only a placebo. 95 persons then developed COVID-19, of whom 90 were in the placebo group — a near 95 per cent effectiveness for the vaccine.

Pfizer, similarly, recruited 44,000 volunteers, of whom half were given the vaccine and half placebo. To date, 94 subjects have acquired the disease, of whom over 90 per cent were in the placebo group — very similar findings to Moderna's.

Neither trial is yet complete, but these results to date are hopeful. There are reports of side effects with both vaccines (pain at the injection site, fatigue, muscle aches, joint pain, chills, fever) but these fall within acceptable limits.

However, one vaccine (Moderna's) cost the U.S. taxpayer \$1 billion, while the other (Pfizer's) cost nothing. Instead, Pfizer invested its own money (\$2 billion) in its research, and when asked about that, Pfizer's CEO [Dr. Bourla explained](#) he "wanted to liberate our scientists from any bureaucracy." He wanted the company's scientists to focus on the science and only on the science, not on government paperwork, reports and guidance.

Moderna, on the other hand, was one of six giant companies that took part in Operation Warp Speed, by which their research into a COVID-19 vaccine was funded lavishly by the federal government.

Pfizer was the first company to report good news on the vaccine, and five out of the Operation Warp Speed companies have yet to report good news, so the implication may be that taking

government money might have dulled the Operation Warp Speed companies by blunting their incentives. In Dr. Bourla's words, "if it fails, it goes to our pocket," which is perhaps why Pfizer succeeded before the other Warp Speed companies: It had its own skin in the game, whereas the other six had the taxpayers' skin in the game.

Of course, the government is not wholly removed from play: Should Pfizer create a successful vaccine, it is contracted to supply the government with 100 million doses at a cost of \$1.95 billion. But having the government as consumer is a very different proposition from having it as a funder: when the government is the consumer, a company's incentives are sharpened. When the government is the funder, a company's incentives are dulled.

Pfizer is in partnership with a German company, BioNTech, which received \$445 million from the German state for its research, so we cannot deny government some credit for Pfizer's success. But that money was granted only in September, after the research was completed, to accelerate the vaccine's upscaling and distribution. BioNTech had already taken the research risk with its own money, and in its grant the German government was acting more as a customer than as a funder.

Government laboratories have not emerged with their reputations enhanced by this pandemic. Both the Centers for Disease Control and Prevention (CDC) and the FDA (Food and Drug Administration) have been — sadly, with justification — criticized for their lethargy and obstruction during the early part of the pandemic. This reflects poor leadership from the very top.

Although Pfizer has demonstrated the virtues of the market, there is a genuinely public good called public health, which can be delivered only by the government. Yet two years ago President Trump took the ax to the National Security Council's pandemic unit (the Directorate for Global Health Security and Biodefense) when he decapitated its leadership, shrunk its staff, and fused its rump into a new, diffuse directorate for counterproliferation and biodefense. Further, he abolished the equivalent unit within the Department of Homeland Security, sacking its director and staff.

Before the pandemic, moreover, President Trump planned to cut funding to the CDC, and to the National Institutes of Health (NIH) and — before he withdrew it altogether — to the World Health Organization (WHO). In short, President Trump, by his actions, disparaged the idea of public health as a public good, with consequences we have all suffered.

Aggravating that problem, President Trump, by funding Operation Warp Speed, may have wasted public funds by subsidizing the private sector in ways that actually weakened its incentives. The role of industry is to take risks, so the federal government might have limited its actions to that of customer, incentivizing industry into venturing its own funds more capaciously.

The lesson of the last year is that public health needs to be funded properly by the state, but that the private sector needs no public subsidies, only market incentives. President Trump is apparently unhappy that the vaccine's early success was not reported before the election, but by his mishandling of both public and private science he did not help his cause.

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