



How false hope spread about hydroxychloroquine to treat covid-19 — and the consequences that followed

By **Elyse Samuels** and **Meg Kelly**

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“But I think it could be, based on what I see, it could be a game changer.”

— President Trump, at a White House news briefing, March 19, 2020

“Hydroxychloroquine — I don’t know, it’s looking like it’s having some good results. That would be a phenomenal thing.”

— Trump, at a White House news briefing, April 3

“What do you have to lose? I’ll say it again: What do you have to lose? Take it. I really think they should take it.”

— Trump, at a White House news briefing, April 4

“It’s this powerful drug on malaria. And there are signs that it works on this. Some very strong signs.”

— Trump, at a White House news briefing, April 5

The world is looking for answers in the search for a treatment for covid-19, the disease caused by the novel coronavirus, which has claimed more than 100,000 lives across the globe. President Trump has repeatedly touted the anti-malarial medications hydroxychloroquine and chloroquine as that much-needed solution.

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Even before Trump started talking about the drugs, studies abroad sparked interest in them as a potential cure. News about the drugs spread quickly online, percolated to the media and the White House.

Scientists have since pointed to major flaws in those original studies and say there is a lack of reliable data on the drugs. Experts warn about the dangerous consequences of over-promoting a drug with unknown efficacy: Shortages of hydroxychloroquine have already occurred, depriving lupus and rheumatoid arthritis patients of access to it. Doctors say some patients could die of side effects. Other potential treatments for covid-19 could get overlooked with so much concentration on one option.

The Fact Checker video team has reconstructed how the claim spread online and illustrates the troubling consequences of such misleading hope in the drugs.

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The Facts

Conversation around hydroxychloroquine and chloroquine as potential treatments for covid-19 started in China in late January. According to Kate Starbird of the University of Washington's Center for an Informed Public, tweets from media organizations — including Chinese state outlets — and investors highlighted past studies in which the medications were tested as cures for severe acute respiratory syndrome. (The 2005 tests never made it to human trials.) They also pointed to statements from the coronavirus research center in Wuhan, China, suggesting the drugs could be used to fight covid-19.

Renée DiResta, technical research manager at the Stanford Internet Observatory, found similar trends on Facebook and Instagram in February. The number of total posts and interactions increased, and Internet speculation spread beyond China to Nigeria, Vietnam and France.

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A large portion of activity online at the end of February and early March appeared in French and centered on a study published by French researcher and doctor Didier Raoult.

The spread in the U.S.

Raoult's findings helped bring the theory to the United States. However, scientists have since discredited the trial, pointing to major flaws in the way it was conducted. The journal that published the study announced on April 3 that it did not meet its standards.

Yet before the record could be set straight, the hypothesis spread widely on U.S. social media. The Fact Checker has refrained from linking to original posts on the drugs to avoid giving further oxygen to misleading information.

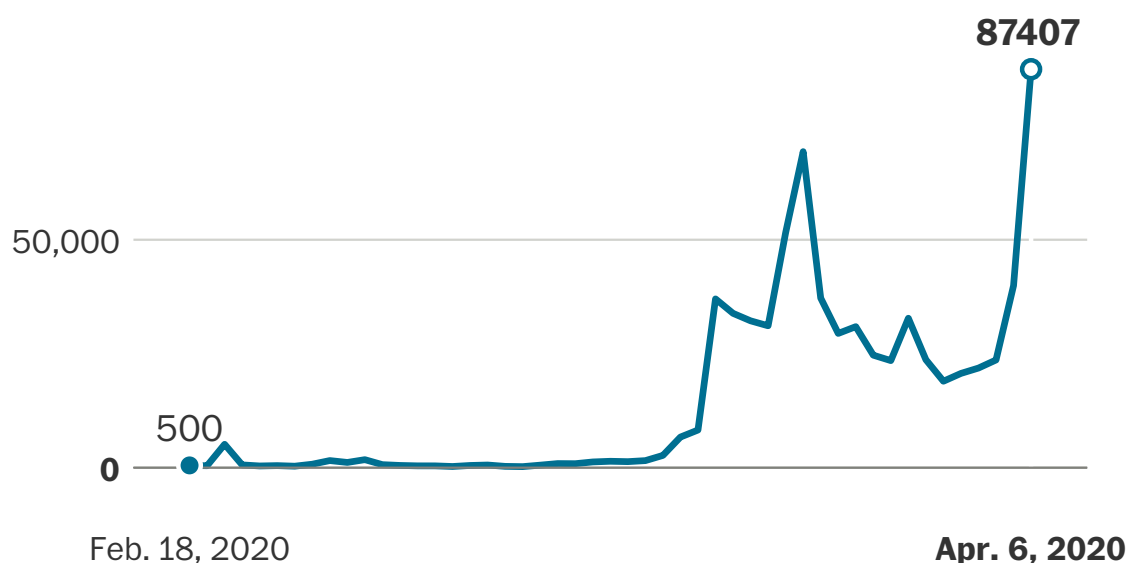
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According to Starbird, the first viral tweets were posted by Paul Sperry, a staunchly conservative author, on March 9 and 11. A blockchain investor, James Todaro, then tweeted a link to a Google document he co-wrote with Gregory Rigano about the potential cure on March 13. Tesla chief executive Elon Musk retweeted that Google doc on March 16, writing, “Maybe worth considering chloroquine for C19.” The faulty research then appeared in the Gateway Pundit, Breitbart and the Blaze. It ultimately made its way to Fox News, first appearing on Laura Ingraham’s program on March 16. Fox News shows hosted by Sean Hannity and Tucker Carlson went on to promote the drugs and continue to do so.

On March 19, Trump first mentioned hydroxychloroquine at a White House news briefing. DiResta’s analysis showed that the following week, the claim started to spike in the United States, with 101,844 posts on Facebook. Starbird reports Trump’s first mention set off a surge in attention, seeing tens of thousands of tweets per hour in late March.

Data from Brandwatch, a digital consumer intelligence company, as well as DiResta and Starbird, show the total number of mentions about hydroxychloroquine and chloroquine increased in late March and early April.

Social media mentions of hydroxychloroquine



Claims about hydroxychloroquine and chloroquine as a treatment for covid-19 surged on social media in the second half of March and early April.

Source: Brandwatch, Crowdtangle

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Trump and his allies, including his son Donald Trump Jr. and his personal attorney Rudolph W. Giuliani, tweeted about the drugs in late March. These posts saw the highest percent of reach, according to Brandwatch data, at some of the sharpest spikes in social media mentions online.

Trump again spoke about the drugs at news conferences on April 3, 4 and 5. Mentions on Twitter skyrocketed on April 6.

The science

As attention on the drugs became even more prolific — online, in the media and from the president — scientists say there is only “anecdotal evidence” on the drugs. To a layperson, that may not sound bad, but it’s actually an insult in the scientific community.

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Anecdotal evidence refers to people's personal stories about taking the drugs and has no basis in scientific data. It's akin to a Yelp review.

Anthony S. Fauci, director of the National Institute of Allergy and Infectious Diseases and a member of Trump's coronavirus task force, has consistently said there is not enough evidence to support the drugs as a viable treatment for covid-19.

The Centers for Disease Control and Prevention conducted tests on the drugs in treating SARS in 2005. Results showed the drugs had anti-viral effects on cell cultures. However, it did not work in studies on mice.

According to David Boulware, professor of medicine at the University of Minnesota, that "is a little bit of a red flag." Moreover, it was "not a clinical trial and did not look at the effect of chloroquine on humans," according to a CDC spokesman.

Boulware is conducting a clinical trial on using hydroxychloroquine for prevention or early treatment of covid-19 in humans, but he says it is too early to know whether the drug works.

“That’s our goal, to really rapidly identify as quickly as possible, does this actually work or not? Because there’s a lot of hubbub about it now,” Boulware said. “But there’s very little evidence that we actually have that this has a clinical benefit, which is kind of bad for something that’s being very heavily promoted. We should probably have some data and some science behind it.”

Yet the World Health Organization, university labs and governments around the world are conducting larger clinical trials of hydroxychloroquine and chloroquine in treating covid-19.

Asked whether chloroquine was a possible cure for covid-19, Janet Diaz of WHO told reporters on Feb. 20 that the organization was prioritizing other therapeutics: “For chloroquine, there is no proof that that is an effective treatment at this time. We recommend that therapeutics be tested under ethically approved clinical trials to show efficacy and safety.” A few weeks later, both chloroquine and hydroxychloroquine were included in a mega-trial WHO launched.

The Food and Drug Administration granted an emergency use approval to distribute millions of doses of the drugs to hospitals across the country on March 29.

“During the evaluation of the criteria under which to issue an EUA, it was determined, based on the scientific evidence available, that it is reasonable to believe that the specific drugs may be effective in treating COVID-19, and that, given there are no adequate, approved, or available alternative treatments, the known and potential benefits to treat this serious or life-threatening virus outweigh the known and potential risks when used under the conditions described in the EUA,” an FDA spokesman told the Fact Checker in an email.

Luciana Borio, the former head of medical and biodefense preparedness at the National Security Council, criticized the FDA’s EUA announcement and has called for a randomized clinical trial of the drugs.

“I think that it was a misuse of emergency authorizations of the authority that the FDA has. Because it gives this credence that the government is actually backing, and it’s so common for people to equate that with an approval,” Borio said.

When asked whether any of the completed studies have provided substantial evidence that the benefits of the drugs outweigh the risks, Borio responded, “Not at all. No study was done in a way that would allow that conclusion.”

The consequences

Hydroxychloroquine and chloroquine are commonly used by patients with lupus, rheumatoid arthritis and other autoimmune diseases. The attention around the drugs caused a panic, in which doctors and patients rushed pharmacies, resulting in a major shortage of the drugs. Consequently, some patients have reported not being able to access the medicine they need.

There are also potentially fatal side effects, such as sudden cardiac death, from taking the drug without proper oversight from a doctor. These dangerous yet rare side effects are often overlooked in conversation around the drugs.

Separately, some people have mistakenly taken other drugs that sounded like hydroxychloroquine after hearing about it so much to try to prevent covid-19. A man in Arizona died after taking chloroquine phosphate — a drug that sounds similar to chloroquine but is used to clean fish tanks.

Experts warn of the dangers of too much focus on one particular drug in a crisis like the coronavirus pandemic. The attention could blind researchers and scientists to other promising treatments.

“It’s important that we don’t put all our eggs in this one basket and that we continue to look at some of these other well-known drugs,” said Katherine Seley-Radtke, a professor of chemistry and biochemistry at the University of Maryland at Baltimore County.

The White House did not respond to our inquires.

The Pinocchio Test

Over the course of only a few weeks, posts online, the media and politicians turned chloroquine from an unknown drug to a “100% coronavirus cure,” misleading the public on its effectiveness and engendering unintended but negative consequences.

Hydroxychloroquine and chloroquine as treatments for covid-19 are not yet backed by reliable scientific evidence. In a pandemic, it’s important for everyone to follow the lead of scientists. Rumors on the Internet are the least reliable source of information. And politicians are not qualified to provide scientific advice, despite even the best intentions.

In particular, Trump’s incorrect comments on the drugs and his role in advocating for their use, based on minimal and flimsy evidence, sets a bad example. His advocacy for this unproven treatment provides potentially false hope and has led to shortages for people who rely on the drugs. The president earns Four Pinocchios.

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Four Pinocchios

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