

Labs worldwide working on coronavirus vaccine, but rollout could take time

February 3 2020, by Dennis Thompson, Healthday Reporter



(HealthDay)—A mad dash is afoot to craft a vaccine for the new

coronavirus that's ravaging China and starting to spread across the globe, with possibly dozens of labs working on permanent protection against the pathogen.

Researchers say an effective vaccine could be created in a matter of weeks, using advanced techniques.

"We know enough. We can do this. We can actually make a vaccine in the lab in two weeks," said Florian Krammer, a professor of vaccinology at the Icahn School of Medicine at Mount Sinai, in New York City.

"But—here's the but—that doesn't help us much."

Why not? Because any new vaccine will still face manufacturing and regulatory hurdles that would take months to surmount, experts say.

Dr. Amesh Adalja, a senior scholar at the Johns Hopkins Center for Health Security, said, "Though we may be in clinical trials within a year, I do not expect a coronavirus vaccine to be commercially available within a year."

The World Health Organization on Thursday declared the Wuhan coronavirus outbreak a global public health emergency.

Countries around the world are reporting isolated cases of coronavirus, as travelers carry the bug out of China—including the United States, Thailand, Japan, Hong Kong, Singapore, Australia, Malaysia, Macau, France, South Korea, Germany, the United Arab Emirates, Canada, Vietnam, India, the Philippines, Nepal, Cambodia, Sri Lanka, Finland, the United Kingdom and Russia.

And the United States has had its first case of person-to-person transmission of the coronavirus, with a Chicago woman passing the virus to her husband.

"I don't think it's been overhyped," Krammer said of the threat posed by the virus. "We have to take this very seriously. We don't know which direction it will go. It might be that it's stoppable. It might be that it's not stoppable."

In response, vaccine labs worldwide are adapting their work on previous coronavirus vaccines for SARS ([severe acute respiratory syndrome](#)) and MERS (Middle East respiratory syndrome) to try to stop this new pathogen, Krammer said.

"There are SARS vaccines and MERS vaccines that work. We can model a vaccine right away with the new coronavirus, based on those vaccines. My lab is doing that. There's probably 50 labs in the U.S. that are doing that right now," Krammer said.

For example, virologist Keith Chappell at the University of Queensland in Australia told *NPR* that his lab is working at speed to produce a vaccine using the virus' genetic sequence, which Chinese researchers cracked and have shared with the world.

"Our goal was to be able to hit 16 weeks from sequence information to having a product that is shown to be safe and effective, and is ready for administration to the first humans," Chappell said.

The more high-profile efforts at developing a coronavirus vaccine include:

- A Massachusetts biotech company called Moderna is developing a vaccine genetically designed by researchers at the U.S. National Institutes of Health (NIH), according to the *Washington Post*. The NIH hopes to have safety trials for this vaccine underway by April.

- A Philadelphia biotech firm, Inovio, is gearing up for lab and animal testing of a vaccine of its own design. The effort is backed by a \$9 million grant from the Coalition for Epidemic Preparedness Innovations, according to *The New York Times*.
- Pharmaceutical industry leader Johnson & Johnson is also working on a vaccine, but its top scientists say it could take up to a year to bring the vaccine to market, *CNBC* reports.

Unfortunately, getting millions of doses of coronavirus vaccine into the hands of doctors and the arms of patients is a more complicated process, Krammer said.

The problem is that there are no vaccines on the market for any coronavirus, not even SARS or MERS, Krammer said.

If this were the flu, manufacturing could be more easily spun up because the technology is in place to mass-produce the annual flu vaccine, Krammer said.

"There's no already-in-play manufacturing technology we can employ right now that regulatory authorities are used to," Krammer said of a coronavirus vaccine. "That's the complication."

Vaccine developers also have to prove to federal regulators that their creation is safe and effective, and being manufactured to the highest standards, Krammer added.

"You need to make these vaccines in a quality that is acceptable to regulatory agencies," Krammer said. "That's a little bit harder, because that includes sourcing qualified materials that can be used in such a process, which is not so easy, and you also need to have extensive testing in order to release these vaccines," he explained.

"The truth is it's going to take a few months until there is a [vaccine](#) available for testing," Krammer concluded. "Then the main question that remains is how long it will take to produce, once the U.S. Food and Drug Administration allows its use in the population. How much time do we need to make sufficient doses?"

More information: The U.S. Centers for Disease Control and Prevention has more about [coronaviruses](#).

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Citation: Labs worldwide working on coronavirus vaccine, but rollout could take time (2020, February 3) retrieved 3 May 2024 from <https://medicalxpress.com/news/2020-02-labs-worldwide-coronavirus-vaccine-rollout.html>

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