

Vaccine news great, but COVID-19 therapeutics may have a faster effect, expert says

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Fresh COVID-19 vaccine progress is "fantastic" news, but it will take time to implement a vaccine in New Zealand, a University of Otago

expert says.

News swept the globe this week that a [vaccine](#) being tested by Pfizer and BioNTech could be 90 percent effective at preventing COVID-19. But there are some large hurdles to cross before rolling that specific type of vaccine out across New Zealand, Associate Professor Jo Kirman of the University's Department of Microbiology and Immunology says.

"This is fantastic, exciting news, but there are big barriers to a vaccine like this for us here in New Zealand. There is no place in New Zealand or Australia that can manufacture this type of vaccine. And because this type of vaccine must never reach a temperature above -60 deg C, transporting and storing it would be extremely challenging."

In fact, it may be time New Zealand focused on finding and funding a therapeutic answer to COVID-19, which could have a more immediate impact than a vaccine, she says.

Associate Professor Kirman, who heads the University's Health Science First Year program and is an expert on the [immune response](#) to and vaccine search for tuberculosis, says a low-cost therapeutic solution may be an effective and fast way to take the sting out of the pandemic.

Therapeutics—medicines that treat the symptoms of a disease—are being rapidly and aggressively developed around the world in response to the pandemic, though without the media attention being afforded to vaccines, she says.

"Researching to find a vaccine for this virus is worthy and necessary work as a long-term strategy. But we have to recognize that there are a lot of things that have to go very well before a vaccine can make a big impact on COVID-19."

Beyond the hurdle of finding a safe and effective vaccine is the ability to manufacture, transport, store and administer it at enormous scale, she says. Initially, there will only be enough vaccine available to immunize priority populations, such as people working at the border or in healthcare. It's generally considered that more than 80 percent of the population should be vaccinated to achieve herd immunity.

"If a vaccine isn't very efficacious then even with high vaccination rates within a population we still won't achieve herd immunity. For herd immunity we need two things: an effective vaccine and high vaccination rates. That may end up being possible in the long term, but for a more immediate impact it may be better to look to a therapeutic answer."

Such an answer would involve medicines that limit the ability of the virus to cause [severe symptoms](#), Associate Professor Kirman says.

"The good thing about a therapeutic is that you only need to administer it to a sick person, rather than to the entire population. Imagine if there was a drug that, when people are sick, you can give it to them and keep them, ideally, out of hospital and out of the ICU. That would really take the sting out of this disease, because then it would become less scary and reduce demand on the health system."

Associate Professor Kirman says much has been learned about COVID-19 in the last eight months.

"We have learned that many people infected with this virus show no symptoms at all and many others only have mild symptoms. Of course, the frightening aspect to this virus is the extremely severe disease, or ongoing disease, that can develop in some individuals. If we can find cost-effective and safe ways to reduce the symptoms of those who are severely affected, this feeling that we are in a 'virus or bust' space can go. Perhaps then we will be able to live with this virus in the same way

we live with other viral respiratory infections."

A therapeutic solution has worked with the HIV virus, she says, for which no suitable vaccine has been found despite many years and considerable money being spent.

"Yet the advancement of therapeutics for HIV has brought about massive health benefits and mean an HIV diagnosis today is no longer the death sentence it was a few decades ago. We have the expertise and facilities to research and produce these sorts of therapeutics for COVID-19, right here in New Zealand. Perhaps it's time we put a considered focus on that, alongside our work on a vaccine."

Provided by University of Otago

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