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COVID-19 vaccine in 'uncharted territory' amid cautious optimism and the need for safety

Damon Cronshaw

Coronavirus

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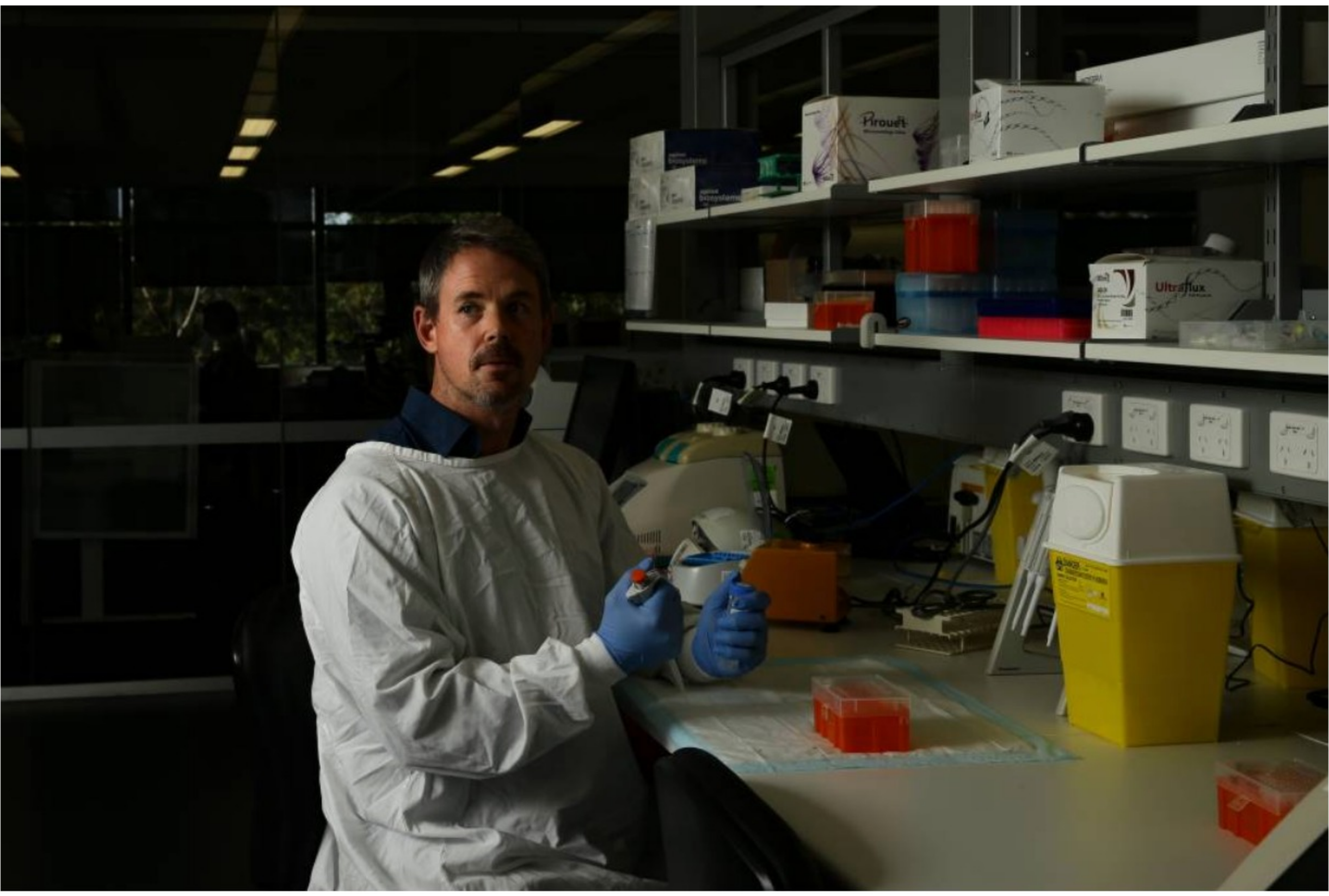
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Treatment: Newcastle virologist Nathan Bartlett says a coronavirus vaccine will be "incredibly important in the long term". Picture: Jonathan Carroll

The race for a vaccine is speeding ahead, as the world hopes for a silver bullet to defeat the COVID-19 pandemic and end the lockdowns and restrictions that have turned life upside down.

More than 60 potential vaccines are being developed globally. Several have begun clinical trials in human volunteers, the World Health Organisation said.

Most scientists say a COVID-19 vaccine will take a least 12 to 18 months to develop.

However, a vaccine under development at Oxford University in the UK could be ready this year.

Hunter Medical Research Institute virologist Nathan Bartlett said it was important for people to understand that a vaccine had never been developed for coronavirus.

"We're in uncharted territory. We're only assuming we'll be able to do this and it'll be safe and effective, but we don't know that for sure because we've never done it," Dr Bartlett said.

"We [humanity] are in a good position and one would be very optimistic we'll get an effective vaccine, but we don't know for sure yet."

Potential vaccines need to pass safety tests and go through several phases of clinical trials, which can involve thousands of people.

It's been suggested that federal drug authorities in the US could approve a COVID-19 vaccine for emergency use more quickly than usual.

And Sarah Gilbert, professor of vaccinology at Oxford University, has said that her team could develop a vaccine this year "if everything goes perfectly".

If the vaccine proves effective, a million doses could be produced by September and hundreds of millions by the end of the year, she said.

Harvard Medical School Professor David Sinclair said the development of a vaccine this year was "within the bounds of possibility".

"I would say it's more likely that a vaccine would be here in early 2021. A company that a friend of mine at Harvard helped start is leading the US race," said Professor Sinclair, who had been due to attend the Newcastle Writers Festival in early April to discuss his book *Lifespan*.

"I've been doing drug development for many years. I even started a vaccine company myself. Drugs never go as fast as you want.

"In this case, there's an extra level of safety needed because the number of people who will get this vaccine is in the billions."

Potential vaccines were sometimes scrapped because studies find they "cause more harm than good".

"If they're going to vaccinate billions of us, it has to be completely safe," he said.

"That's why I think we'll have to wait longer, even if a vaccine looks promising. I don't think governments will allow their population to get a vaccine until it's safe."

Dr Bartlett said vaccine development was "hugely expensive".

"That's why commercially-directed research into vaccines has not been well supported," he said.

"It's hard to make money from developing vaccines, to put it bluntly."

Market failure has been blamed on stalled research and development of vaccines, along with a lack of profitability for the pharmaceutical industry.

Similar points have been made about the failure to develop new drugs to overcome antibiotic-resistant superbugs.

A lack of funding stalled the development of at least three SARS vaccines before the COVID-19 pandemic struck. If they had been able to proceed, they could have been quickly adapted to vaccinate people against SARS-CoV-2, the coronavirus that causes COVID-19.

Billionaire philanthropist Bill Gates has said that his foundation will spend billions of dollars to build factories to manufacture and test seven possible coronavirus vaccines. He believes the manufacturing capacity must be ready before the vaccines are proven to prevent delays in getting billions of people vaccinated.

As recently reported, Dr Bartlett is testing existing drugs for antiviral use in the fight against COVID-19. He said a vaccine and antivirals were both needed.

"We need vaccines for the bigger picture, but for the individuals who are going to get infected we need something to treat them with."

Influenza is an example.

"We have great vaccines for flu, but we still rely very heavily on flu antivirals as a frontline of defence," Dr Bartlett said.

"We're never going to have a vaccine that's 100 per cent effective for respiratory viruses, like influenza and probably coronavirus.

"There will always be people who weren't vaccinated or weren't vaccinated early enough, or the vaccine they got was not the right one."

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